

Aviation News

McGRAW-HILL PUBLISHING COMPANY, INC.

OCTOBER 23, 1944



Hawker Tempest—Buzz Bomb Buster: *More than 600 flying bombs were knocked down by this successor to the Hurricane and Typhoon, just off the RAF secret list. It is now being used from Belgian bases against the Nazi jet Messerschmitt 262. It is powered with a supercharged Napier Sabre 2,200 hp. engine and has a de Havilland variable pitch four-blade prop.*

CAB Speeds Hearing on North Atlantic Route Case

Moves quickly to assume leading role in world air commerce as military situation promises early reopening of Continental trade.....Page 38

Industry Cold to Plan to Offer Revised CAR at Parley

Time is too short, manufacturers and airlines feel, for proper study and discussion of proposed new regulations before Nov. 1.....Page 42

U. S. to Seek Provisional Agreement on Landing Rights

Reciprocal accords believed America's early objective in air parley with view to opening service on CAB's proposed 140,000 miles of routes..Page 7

Study FCC Radio Hearings for Effect on Flight Control

Company specialists see move to solve radio frequency spectrum problems as of vital importance in future development of aviation.....Page 43

Speed Near that of Sound Presents Design Problems

Revamped equipment and new conception of aerodynamics developing as result of war-stimulated advances.....Page 31

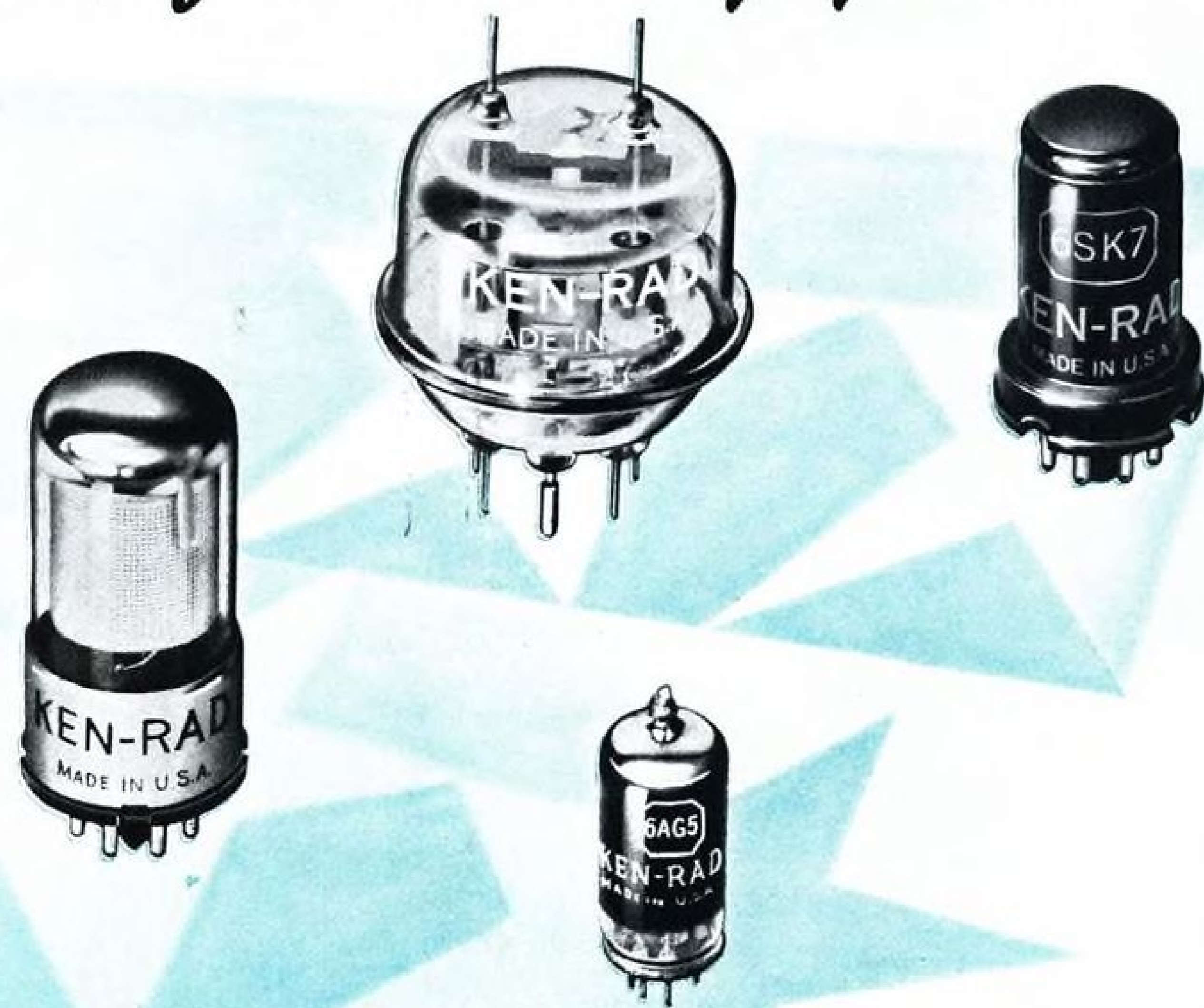
Over 100 Military Plane Types Eligible for Civil Okay

Out of six warplanes tested by CAA at its Vandalia, Ohio, base, only one, the Boeing C-73, is found acceptable without modification....Page 13

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THE AVIATION NEWS

Washington Observer

PROTESTS RELAXATION—At least one light plane manufacturer is protesting to CAA that recommendations by Aero Chamber Personal Aircraft Council spokesmen favoring extensive relaxation of aircraft type certification requirements, were made without his knowledge or consent. This manufacturer, who feels that some others agree with him, says that removal of stringent regulations would be followed by dangerous short cuts in stresses and tolerances. This would have two bad effects, in his opinion: (1) skimpy designers would gain advantage over those who maintained high standards, and (2) accidents due to skimpy design would damage the entire industry. He adds the Council does not represent the entire industry and that it must make exceptions in its commitments. Council's position is that manufacturers' desire for success and profit is the best possible motivation for safe and durable airplanes, and that the industry should work toward freedom equal to that of the automobile industry.

★ ★ ★

MORE TRANSPORT PLANES—It may be some time off, but the Army is known to be cognizant of the needs for additional planes for both domestic and foreign airlines. The change in procedure for allocation, with requirements being measured by a group in Surplus Property Board, including representatives of more agencies than have hitherto been involved, may be helpful to the airlines even before the end of the European war. State Department and FEA will be potent factors in arguing for planes to be allocated airlines in South America and other key countries. But ships can hardly be given overseas operators unless domestic needs are measured against them—and on that basis American lines can put up a good case.

★ ★ ★

V-E DAY CUTBACKS—There is little doubt now but that the initial cutback on V-E Day will total more than the 40 percent which has been discussed. WPB officials admit privately

that it will be nearer 60 percent, but little will be said publicly because of the fear of the armed forces that industry will become bullish and difficult to control as V-E Day approaches.

★ ★ ★

PRE-DETERMINATION—Aircraft manufacturers facing cutbacks are coming more and more in contact with the word "pre-determination" in their dealings with the Army Readjustment Branch. Simply defined, pre-determination means an agreement reached by the company and the Government before work on the contract is stopped. Many details can be worked out ahead of cancellation and the War Department is anxious to do as much as it can. Promoting it is Brig. Gen. D. N. Hauseman, head of the Army's termination work.

★ ★ ★

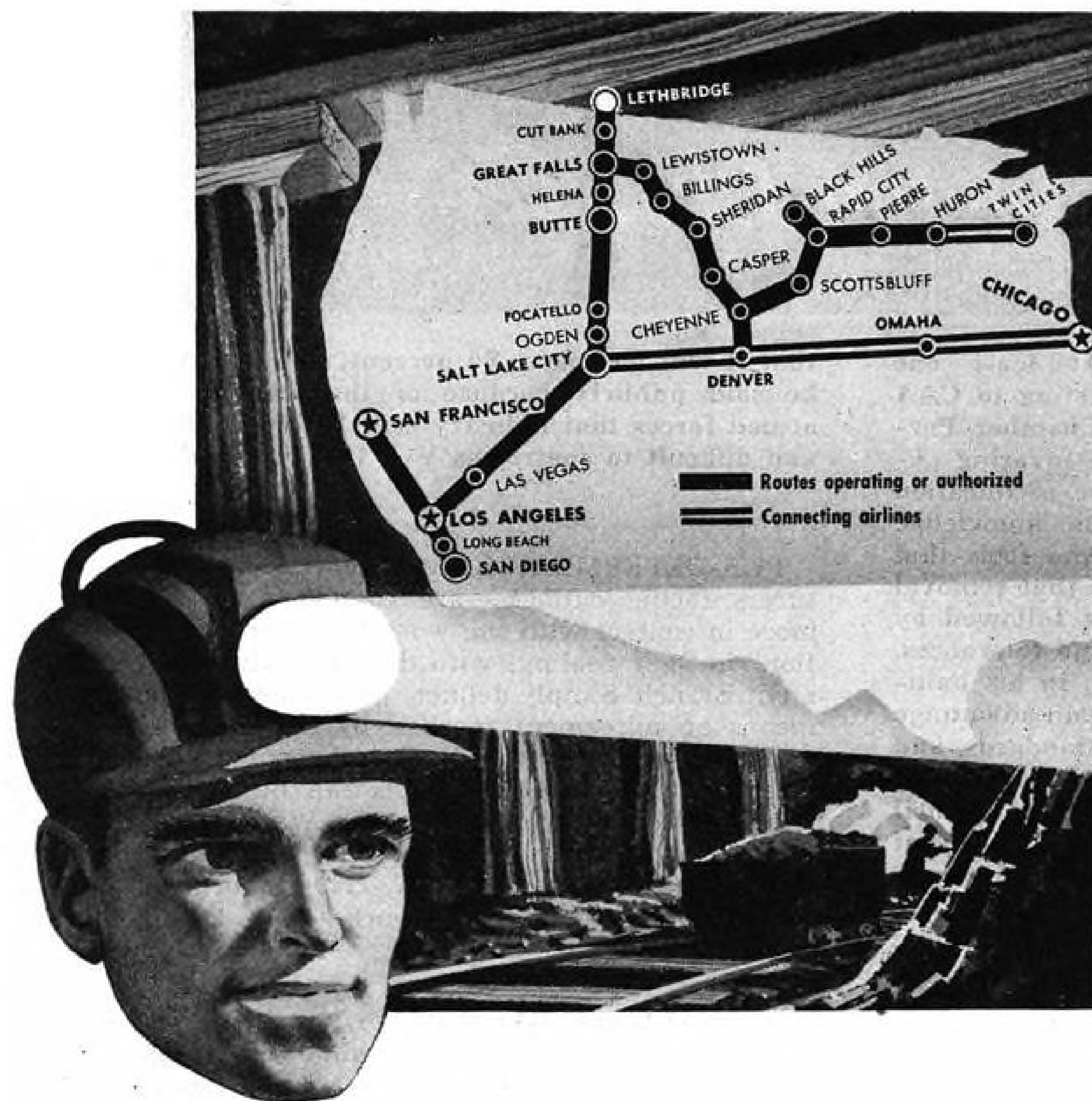
NO SALE ON GLIDERS—Although no information on sales of surplus gliders is available from Defense Plant Corp., an analysis of bid invitation lists shows that, of the first eight offered in the Atlanta CAA region, none was sold. They have been re-offered in a later bid invitation. The ones offered were Pipers, and the company says it is impractical to convert them to planes. However, they would supply spares, and are offered without ceiling prices being set.

★ ★ ★

MARINE CARRIERS—Marine Corps air squadrons probably will be in action aboard two carriers assigned them shortly after the first of the year. Carriers logically would be of the Sangamon class, converted from fleet oilers. The four announced ships in this class have longer flight decks than other CVE classes and are well compartmented to take punishment in the kind of inboard screening of landing forces for which Marine squadrons are trained. It would be a good bet that squadrons will consist of new F-4-U's with better deck landing

Auxiliary Belly Tanks brought out by carrier handlers during opening of the Battle of the Eastern Philippines.





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characteristics. Marines have been using the Corsairs as fighter-bombers lugging 2,000 pounds. They may mount other types of armament, also.

★

NOT A NEW ROLE—Marine squadrons served on carriers before the war, but since Pearl Harbor have been used in land-based operations entirely. Marine air has worked out methods of close teamwork with ground units, concentrating on development of pin-point accuracy and low level support tactics. New pilots are trained in ground tactics, from landings to jungle in-fighting, both to give them knowledge of what ground troops need in way of support and to instill in pilots the idea that they are part of one team—The Marines. It pays off.

★ ★ ★

LIGHT PROPELLERS—Small automatic and controllable pitch propellers will be down to a point in weight and price where engineers will have to decide, almost immediately, whether to put them on their post-war personal planes. Army and Navy experimentation with at least three light variable hubs—Bartlett Hayward, Annesley, and Beech—has pushed light controllable and automatic pitch development years ahead of where it might otherwise have been. In addition to the three in military programs, several others are on test with light plane manufacturers. Still others have designs and manufacturing plans.

★ ★ ★



▶ Top flight engineers forecast that jet-turbine units roughly equivalent of 4,000 to 5,000 horsepower will be perfected in the near future... Military demand for helicopters has dropped off again and there appears little likelihood that unit production schedules will be increased.

▶ General reorganization of the Air Transport Association's Air Traffic Conference is being studied, one proposal being to provide for membership of foreign airlines in an International Air Traffic Conference.

▶ If CAB grants certificates to new airlines, including feeders, the Air Transport Association is expected to take them in as members. All American Aviation is at present the only ATA member not carrying passengers. Essair, Inc., granted a certificate but not yet operating, still is outside ATA.

▶ Bendix Aviation Corp.'s interest in lightplanes has reached the point of negotiations with at least one established manufacturer. Discussions with Aeronca, however, failed to materialize in purchase of the company.

▶ Unconfirmed reports in Detroit say Reuben Fleet, former head of Consolidated Aircraft Corp., has turned down offers to become Boeing head.

▶ Omer L. Woodson, who resigned recently as Bell Aircraft vice-president and Georgia Division man-

Washington Observer

POST-WAR FOREIGN MARKETS — A study just completed by the Coordinator of Inter-American Affairs shows that makers of capital goods will find a market close to \$6,000,000,000 worth of new and used products in the first ten years after the war, and that Brazil, Mexico and Argentina will be among the best customers. The figure includes about \$1,600,000,000 of used equipment, of which 60 percent could come from U. S. surpluses. Aircraft equipment is on the list along with machine tools and productive machinery of all kinds.

★ ★ ★

HIGHWAY FLIGHT STRIPS—Apprehension that expenditures of large sums for a state-federal highway flight strip program will interfere seriously with the proposed CAA airport program is being felt and voiced by some government officials. Advocates of the airport program contend that the flight strips would be located "wherever there is an available flat piece of land alongside a highway" without regard to serving a particular community, which is the primary consideration in the airport program. Whether there would be sufficient public funds made available for both the flight strip program and the airport program is an important question. The airport advocates also question the "safety" feature of putting the flightstrips alongside highways, pointing out the possible hazards of airplanes out of control going over on the highways.

ager, has not joined Hughes Tool Co., despite the announcement made to that effect.

▶ Marquis Childs' syndicated column last week made first public mention of Lockheed's proposed small transport, the *Saturn*, answer to Douglas' *Skybus*. Childs also referred to the super transport, the double-decked *Constitution*, and Lockheed's *Skyliner*.

▶ An entire crop of new German plane types is flying, according to visitors returning from Europe. One is described as a four-engined bomber somewhere between the sizes of the *Fortress* and *Superfortress*. Several new jet or turbine types with fantastic speeds have been seen.

▶ Ford is scheduled to switch to single-tailed *Liberators* soon, while the Convair West Coast *Libs* will retain the double fin. The Navy's version probably will become known as the *Sea Liberator*.

▶ All-jet propelled airliners will be in commercial use within 10 years, a chief engineer of a major aircraft manufacturer told newsmen recently.

▶ The first C-69 *Constellation* will start extensive test flights soon throughout the U. S. in the service of the Air Transport Command, but it probably will not be put into any over-ocean or foreign work in the near future.

▶ Revisions in the Curtiss-Wright C-46, already made in at least one ship delivered by the company, include a heated, bird-proof windshield and revised nose and cockpit.

A Triumph of Planning



So writes

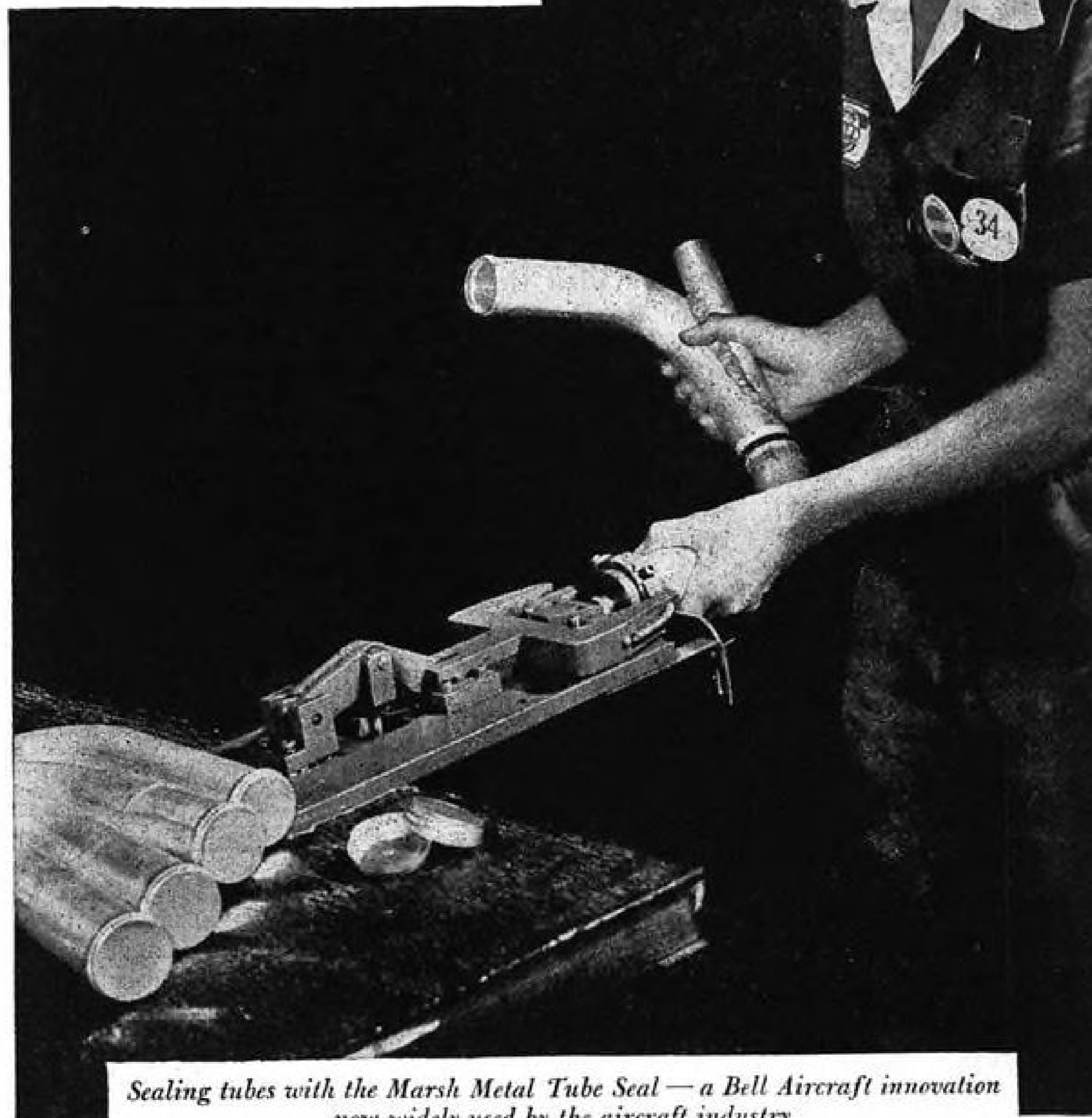
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in describing Bell Aircraft's
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who work there: it became vocal in
the machinist who demonstrated his
tube-bending machine for me, and
the foreman who showed the method
he himself had invented for sealing
aluminum hydraulic tubes to keep
them dust-free.

"And then, from this demonstra-
tion of perfected techniques, we went
to the laboratories, where scientific
knowledge and inventive genius
must still work with experimental
methods to solve problems that have
no precedent. Instead of the calm as-
surance of the big assembly plant, the
atmosphere here in these technologi-
cal maternity wards was one of barely
suppressed excitement: hurry, tension,
exhilaration, but above all, confidence.

"This was an event to be remem-
bered, because I saw for the first time
two of the most spectacular develop-
ments in aviation: I saw the Bell heli-



Sealing tubes with the Marsh Metal Tube Seal—a Bell Aircraft innovation
now widely used by the aircraft industry.

copter hover and swing under perfect
control within reaching distance of
the ground, and I had my first glimpse
of a jet propulsion plane. The Bell
crowd evidently is as adept at design
as it is skilled in manufacturing.

"There are many people I know
whom I'd like to take through that

plant and those laboratories. They
would have a better understanding of
what modern industry has grown into
now that it's really hitting its stride,
and what the future offers in aviation
progress for our nation's prosperity."

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AVIATION NEWS • October 23, 1944

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Aviation News

McGraw-Hill Publishing Co., Inc.

October 23, 1944

U.S. To Seek Provisional Agreement On Landing Rights at Chicago Talks

Reciprocal accords on most-favored-nation basis believed
America's early objective in world air parley with view to
opening service on CAB's proposed 140,000 miles of routes as
soon as war conditions permit.

America will seek at the Inter-
national Aviation Conference
opening in Chicago on Nov. 1 to
implement the main objective of
post-war air policy—to obtain
commercial landing rights for
United States airlines in more
than 50 countries so that world
trade on the 140,000 miles of air
routes recently proposed by the
Civil Aeronautics Board can be
instituted as rapidly as war con-
ditions permit.

Rights would be granted on a
national and most-favored-nation
basis in a provisional agreement
which U. S. delegates will urge the
conference to adopt. It follows
automatically that the same privi-
leges will be available to foreign
airlines at U. S. airports as are
granted American carriers abroad.

► **Transit Rights**—With the ap-
proval of Britain and China as-
sured, and that of Russia expected,
American officials are hopeful that
right of transit and technical stop
will be adopted by the conference
with little difficulty, but whether
the proposal for commercial rights
will succeed is an open question.

Potentials of a dispute which
could lead the conference to an
impasse, and jeopardize America's
hopes that commercial routes can
be re-established and expanded
immediately, were present in a
British white paper published last
week as an official proposal for
conference consideration.

This white paper brought into
the open on an official level for
the first time the wide gap be-
tween Washington and London on
two fundamental aspects of post-
war air transport, a gap which As-
sistant Secretary of State Adolf
Berle, Jr., and Lord Beaverbrook,
then top British air official, were
never able to close.

► **British Proposal**—The British
Government proposed that air
transport should be brought un-
der rigid control through an in-
ternational aeronautical body.
These are the points at issue:

► What shall be the jurisdiction of
the international authority?

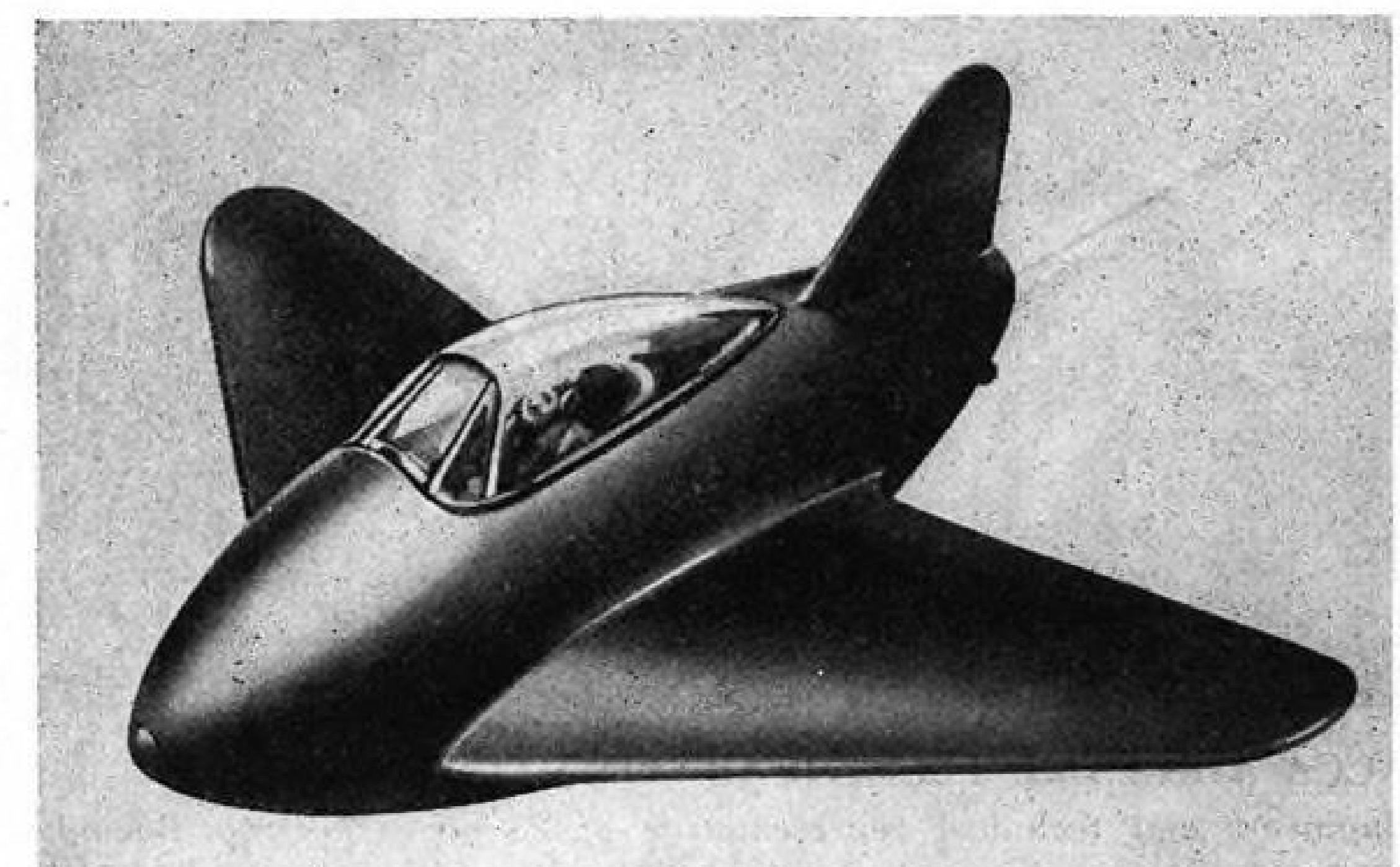
► Shall total world traffic be di-
vided by intergovernmental agree-
ment among the several airlines
which will be participants?

Britain would give the aeronau-
tical body such broad powers that,
in the words of an American offi-
cial, CAB's present authority
would be "derogated." Among
other powers would be that to
allocate frequencies and to assign
portions of world traffic.

America, China and Russia will
reject these portions of the white
paper, it was reported on high
authority last week. The view
here is that aviation should be
conducted on a business basis, not
a political basis as seems inherent
in the British proposal. American
officials hold steadfastly to their
original proposition that, once
routes are established and landing
rights granted, the frequency of
operation is to be determined en-
tirely by the demonstrated com-
mercial need, and that an airline is
entitled to that traffic which it
can capture.

The British viewpoint was at-
tributed to that country's second-
ary position in world aviation, and
her apprehension about American
advancement.

► **U. S. Attitude**—The American
viewpoint is that any arbitrary
division of world traffic would
lead inevitably to power struggles,
with a dangerous potential of war;
aviation, it is held, should be per-
mitted to expand normally on a
business basis. Americans point
out that there is no precedent for
placing an instrument of transpor-



MESSERSCHMITT'S 600 MPH. "SQUIRT":

Although no photos have been released of Germany's new reaction pro-
pelled single seat fighter—the stubby, teardrop Messerschmitt 163—an
artist for *Aeroplane*, British weekly, prepared this sketch from U. S.
sources plus Messerschmitt patents. AVIATION NEWS' Air War Commen-
tator, *Navigator*, reports the 163 has "amazingly fast climb" and top
speed of over 550 mph., but short endurance.

AVIATION NEWS • October 23, 1944

tation or communication under such control as Britain proposes, and contend that without further experience in international air transport, the nations would be well advised to avoid such controls.

Britain probably will obtain support of the Commonwealths for her position. They are meeting in Montreal Oct. 23. Other countries in the British orbit, Spain, Portugal, and the Middle East area, for instance, also may support her. But the American position is expected to win the favor of Latin America, in addition to that of China and Russia. U. S. delegates will argue that small countries might be deprived of satisfactory air services if left to the arbitrary decisions of an international authority.

Agreement in Principle — On other points, the British white paper showed a wide area of agreement with Washington. A new air convention was proposed, recognizing national air sovereignty; right of transit, technical stop and commercial landing; need for prevention of uneconomic competition, and for standard safety regulations, radio equipment and weather reporting.

The British, however, proposed that the right of an airline to embark passengers in a second country destined for a third country should be a matter of negotiation. American delegates hope this right

can be settled at the conference on a "provisional" basis, to avert the lengthy process of bi-lateral negotiation. They point out that if such an arrangement is unsuccessful, it can be corrected later, since it is to be provisional.

Flight Test Base of CAA to be Moved

Shift from Dayton to Bush Field at Augusta, Ga., to give full use of former flight training school airport.

CAA flight engineers who have been operating a temporary flight test base for type-testing surplus planes at Dayton municipal airport will move their operations to Bush field, Augusta, Ga., about Nov. 1.

The move, as forecast in AVIATION NEWS, Oct. 16, will give the CAA full use of the former flight training school airport, government owned. Eight miles from Augusta, the field has three 5,200-foot runways, is equipped with two hangars of permanent construction and a shop, and barracks for trainees, which would be available for office or other use.

Staff to Be Increased—While approximately the same number of employees, ten, will staff the new operation, as have been assigned at Dayton, it is reported the staff will be augmented as operations at

Augusta are enlarged. At Dayton the CAA occupied one hangar at the Dayton Army Air base at the airport, and in flight tests shared the surrounding air with Army planes and commercial airliners.

The move has been interpreted as a long first step toward establishing a more expanded flight testing program in CAA, and the Augusta operation probably will continue as a permanent flight test base, even after the type-testing of surplus military planes has been completed. Future testing would be in the line of CAA-sponsored development work on commercial and personal aircraft, and in coordinating and fostering individual company developments within the industry.

J. D. McCutcheon, manager of the Dayton base, is scheduled to continue in charge of testing at Augusta.

AVIATION CALENDAR

Oct. 25—Aircraft War Production Council, East Coast, New York.
Oct. 25—Aircraft Manufacturers Council, East Coast, New York.
Oct. 25-26-27—Southwestern Aviation Conference, Amarillo, Tex.
Nov. 9-10—Fall Meeting, Institute of Aeronautical Sciences, Dayton, O.
Nov. 13-14—National Association of State Aviation Officials, Annual Meeting, Oklahoma City.
Nov. 15-18—National Clinic of Domestic Aviation Planning, Oklahoma City.
Dec. 4-5—SAE National Air Cargo Meeting, Chicago.
Dec. 5-7—Second Annual Meeting, Aviation Distributors and Manufacturers Association, Jefferson Hotel, St. Louis, Mo.
Dec. 6-7—National Aviation Trades Association, Annual Convention, Jefferson Hotel, St. Louis, Mo.
Dec. 17—Wright Brothers lecture, Institute of Aeronautical Sciences, Washington.

World Air Power Plan Challenged As Unsound Military Policy

Airmen see Dumbarton Oaks program as glamorous and good morale builder but voice doubts as to actual effectiveness of system if put to test.

By WILLIAM G. KEY

Application of the international air force proposal of the Dumbarton Oaks conference is the subject of considerable discussion by air experts who view it from the strategic application standpoint.

As originally conceived, particularly by airmen, the world air force would have been an actual air fleet in being. It would have bases, supply channels, personnel and equipment necessary to carry out its mission of policing the globe. In the course of the concept's application, national jealousies and national fears diluted the basic principles until the draft worked out at the Dumbarton Oaks conference left little of the world-encompassing aspect.

Group of National Air Units—The Dumbarton formula would leave the international air force a succession of national air units theoretically in a stage of constant readiness for movement to any threatening spot on the globe. Once there, each national unit would operate in concert with similar forces of other countries. Direction ostensibly would be in the hands of the Security Council's Military Staff Committee.

Airmen realize that to the general public this formula has a ring of grandeur and effectiveness. It is good morale, but they wonder if it is sound military policy.

In substance, here are some of the views of men who see in the Dumbarton Oaks air policy a shallow and perhaps dangerous fraud: **Air power is replacing sea power as a world weapon both for war and for the enforcement of peace.** It operates on many of the same fundamental concepts. Great Britain enforced an era of relative international peace not alone because it had a fleet in being, but because it had a fleet with operating bases in reach of virtually every world danger point. It had a fleet train of supply ships unequaled by any other country in its merchant marine. The fleet was economically justified because it in turn protected this merchant marine and the colonies surround-

ing and protecting the bases, as well as the home country.

The British fleet could not have been a force for peace if it had not had bases, from coaling stations to major operating installations, in strategic locations. However, it could not operate from Pearl Harbor; neither could the American fleet operate from Singapore, whatever the size of these bases, because they did not operate with common supplies, ammunition, personnel, food, clothing, in some instances fuel, or even operating practices. The American Navy in the northern Pacific and in western hemisphere waters implemented the world domination of the British Navy, but they were not interchangeable. Only because their bases fitted into friendly strategic needs around the world were they powerful.

An international air force would have the same world aspect, but without the implementing bases it becomes a sham. A striking force of American planes—or Russian planes—could not effectively use a Chilean base, for example, any more than the American Navy could have operated from Singapore at the outbreak of the Japanese war. When American planes operated into Russia, special bases had to be built and supplied. The planes of neither Russia nor the United States could use a Chilean base with any more speed and effectiveness than the B-29's have used Chinese bases, which were in preparation before the planes were even completed. On the other hand, it will be possible for the B-29's to use far Pacific bases because they have been captured by naval forces, secured by land fortifications and can be supplied adequately by sea and air. But they, too, take time to prepare, supply and put into effective operation.

To those who cite the commercial air bases in a worldwide network, these airmen counterpose the situation that confronted the Allies at Singapore and Hong Kong. Unless the commercial bases and military bases built by this country for this war are main-



ACCA AIRPLANE TECHNICAL COMMITTEE MEETS:

Engineers and technical representative of 25 aircraft manufacturing companies gathered at Los Angeles for a two-day meeting of the Airplane Technical Committee of the Aeronautical Chamber of Commerce. One of the important discussion subjects concerned technical matters expected to receive consideration at the International Civil Aviation Conference in Chicago next month. Picture at left shows, left to right: C. L. Johnson, chief research engineer, Lockheed; Welwood E. Beall, vice-president, engi-

neering, Boeing; R. B. Maloy, technical assistant to director of safety regulation, Civil Aeronautics Administration; G. A. Page, director of engineering, Curtiss-Wright. At right: W. C. Jamouneau, chief engineer, Piper; W. A. Klickoff, chief, engineering branch, Santa Monica, CAA; Dr. Karl Arnstein, vice-president and chief engineer, Goodyear; J. E. P. Morgan, manager, Personal Aircraft Council (ACCA); R. H. Wendt, vice-president, engineering, Taylorcraft.



PNEUMATIC CUSHIONS LIFT PLANES:

Rubber pneumatic cushions of giant size, used as plane jacks by the AAF, are laced together to lift planes. The deflated bags are placed under the wings of a plane and inflated to three pounds air pressure per square inch, a pressure not exceeding the skin strength of an airplane wing. The method, taken from the Germans, and improved by Wright Field ATSC engineers, represents considerable saving in time and manpower, over old system of excavating under wings of belly landed plane to place hydraulic jacks. It is useful on soft ground. Four bags will lift a B-24.



HELICOPTER FLOWN TO C-B-I THEATER:

Tail section of helicopter flown from the United States to the First Air Commando Group is unloaded at an Indian base. It is that of an R4-B Sikorsky, the first production model helicopter. They have been used in the Burma campaign to good advantage. Two newer models are in production.

tained as supply and repair depots for military use, protected by air fleets and ground troops with open supply lines to home sources, they will be equally ineffective.

► **Protection Doubted** — Under these conditions, say those concerned by the proposal, an international air force of the Dumbarton type is not a protection against war but an incitement to war. It will require major air, sea and land operations to put into use against any threatening country possessing any degree of power.

They insist that the proposed international weapon is dangerous, is based on a false promise that will delude the people of the world into a false sense of security and be ineffective when a showdown comes.

Ross Gets New Post

Frank E. Ross, who has been director of information for the Aircraft War Production Council, West Coast, has been named assistant in the western region office of the Aircraft Manufacturers Council and its parent organization, the Aeronautical Chamber of Commerce.

Ross will assist James L. Straight, western region manager in coordinating aircraft industry activities relating to conversion, surplus materials disposal and other transition problems.

Airframe Weight Triple '40 Average

Totals almost 10,300 pounds, compared with 3,020 four years ago, WPB reveals.

Present average airframe weight is now almost 10,300 pounds, compared with 3,020 pounds in 1940, War Production Board reports, with the forecast that by the end of this year average airframe weight will rise to approximately 10,500 pounds.

Development of bigger and more powerful planes has been the outstanding characteristic of the nation's aircraft production program as it has been analyzed each week by AVIATION NEWS, which showed an accompanying decline in the number of airplanes accepted monthly.

► **September Unit Total Off**—This trend was emphasized by September production when 7,598 planes were accepted, as against 7,937 in August and 9,117 in March, peak month in unit output.

Airframe weight last month, excluding spare parts, was 78,900,000 pounds compared with 79,700,000 in August and 89,800,000 in May, the record month in weight. At the same time, weight per plane, at 10,270 pounds, was two per cent greater in September than in August.

WPB released the following

tabulation of average airframe weights at various points in the development of the aircraft program:

September	Pounds
1940	3,020
1941	3,970
1942	5,960
1943	8,080
1944	10,270

This shows graphically the extent of the aircraft industry production achievement and points up once more the importance of airframe weight as against unit output.

Production now is concentrated on tactical types—bombers, fighters, naval reconnaissance and transports—in contrast to the earlier period when the program was expanding rapidly. In 1942, for example, 85 out of every 100 pounds of airframe weight accepted was in tactical planes and 15 percent in non-tactical types—trainers, communications and special pursuit types.

Last month, 98 out of every 100 pounds was in bombers, fighters, naval reconnaissance and transports. The change reflects continued emphasis on bigger and more powerful fighting planes and the reduction in the Army and Navy training programs. Emphasis on heavy bombers continues.

Plan JP Research In New MIT Lab

Intensive research in electronics and new methods of propulsion, including gas turbines and jet units, will be started shortly in new laboratories at Massachusetts Institute of Technology, according to a report made by Dr. Karl T. Compton, president. The Institute's faculty includes Dr. Jerome C. Hunsaker, chairman of the National Advisory Committee for Aeronautics.

► **Research Projects** — Compton's report to the corporation disclosed that volume of war projects, including research, reached a value of \$25,000,000 this year at MIT.

E. W. Wiggins Dies

E. W. Wiggins, prominent school and fixed base operator, died at Columbia, Missouri, October 18, and funeral services were held Sunday in Edgewood, R. I. E. W. Wiggins, Jr., will carry on the business established by his father. He is a former Pan American-Grace Airline pilot and is now in naval aviation.

Loening Sees Need for Imagination, Talent, Courage in 'Copter Field

Chairman of NACA helicopter subcommittee tells Washington Aero Club that development of rotor craft still is in hands of fearless young engineers rather than in elaborately equipped research centers.

The multitude of helicopter types now being developed indicate they are still in the stage where talent, imagination and courage are needed more than concentration in research centers, Grover Loening, chairman of the helicopter subcommittee of the National Advisory Committee for Aeronautics, believes.

In the only recent comprehensive picture of helicopter development available from a source qualified to adjudge both secret and known experimentation, Mr. Loening says he believes that progress has been rapid, and that the more encouragement given young engineers, the more quickly and completely the problems still facing the new vehicle will be solved.

► **Many Versions**—There are more versions in fundamental type in the helicopter than there were originally in the airplane, Mr. Loening points out, and he believes it will require a longer time to weed out unsatisfactory models and leave the best ones.

But there is still much to be done to give the public a useful helicopter, in Mr. Loening's view. Some of these things are:

- Vibration must be overcome.
- Faster cross-country speeds are vital.
- Controls must be simplified.
- Production costs must be cut.

Usage of the helicopter is likely to be quite different from that of the airplane, and Mr. Loening does not see any rivalry between the two types. Neither does he see rivalry between the helicopter and the automobile. The proper perspective is that of dealing with a new vehicle, in a class by itself.

► **Platt-LePage Model**—In addition to the first successful helicopter, the Sikorsky now in use by the Army, Mr. Loening recently told the Aero Club of Washington of the background of other models he feels are progressing along the right lines.

One of these is the Platt-LePage twin-rotor helicopter which he classifies as most successful, and with a design lending itself to large

size and heavy load carrying, with high horsepower.

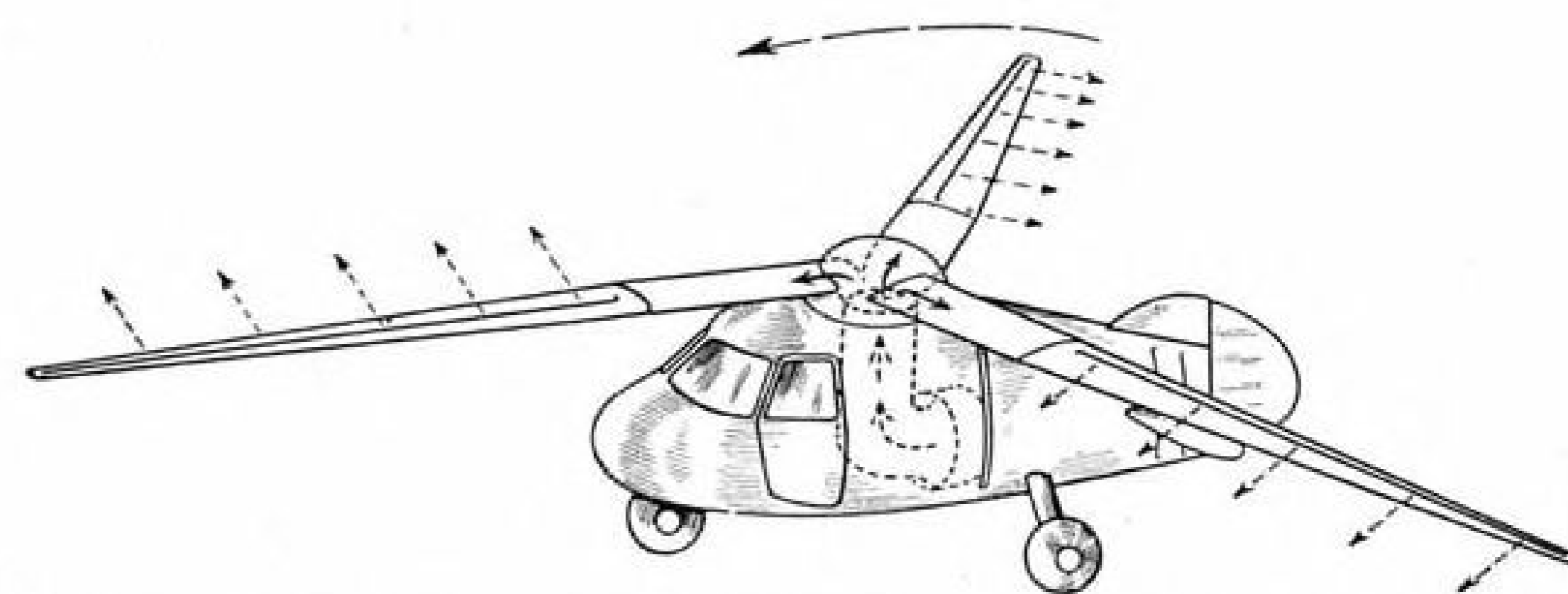
► **Hiller's Success**—The work of Stanley Hiller on the West Coast, which now has the financial and engineering backing of Kaiser Cargo, Inc., in Mr. Loening's view shows great talent. He points out that young Hiller did not know that engineers had largely rejected the coaxial type helicopter, and to the surprise of many engineers designed one that works well. It is too early, however, to appraise ex-

actly how successful the type will prove, although it has extremely good control, particularly directional.

► **Bell Stability**—The Bell helicopter is the first to give proper attention to obtaining stability, using an ingenious gyroscopic attachment. This machine uses a solid rotor pivoted at the center in contrast to the Sikorsky hinged blades.

► **Higgins Type**—The Higgins helicopter is a variation of this Bell technique, while the Aeronautical Products version is somewhat similar to the Sikorsky, although it incorporates changes in engine placement and other features.

► **P-V Still Secret** — Frank Piasecki's P-V Engineering Forum helicopter is still under Navy wraps in many of its aspects, but Mr. Loening says it presents an additional solution to the torque problem. Piasecki's earlier single rotor design demonstrated remark-



Jet-Propelled Helicopter Principle: Serious studies of jet-propelled helicopters are now well advanced, Grover Loening, chairman of the helicopter subcommittee of the National Advisory Committee for Aeronautics, says. Principle involved is illustrated in Mr. Loening's drawing above.



Higgins' Double See-Saw Helicopter: Stream-lined Higgins helicopter, designed by Enea Bossi, is reported to have made limited test flights, tethered with a rope, at New Orleans. Grover Loening, rotary-wing aircraft expert, described the Bossi design recently as a variation of the see-saw type, with solid rotor blades which pivot at the center.

Study Jet Helicopters

Propulsion of helicopters by the jet principle, either with jet engines or with a conventional power plant, is being worked on in secret in "three or four" places in the U. S., Grover Loening has disclosed.

He credits Professor Stalker of Detroit and the late Professor Montgomery Knight of Georgia Tech with early disclosure and proposal of the principle.

Mr. Loening says many engineers believe it has a promising future. It offers another method

of eliminating the torque problem. The helicopter rotor drives itself around the axis by the reaction of a jet of air discharged along the trailing edge of the blade or at the tip. There is no torque since motor power is not applied directly to the rotor shaft. An ordinary engine can be used, driving a blower which will exhaust its air out at the tips of the blades and drive the rotor around very much as the familiar garden spray is driven by a steady jet of water.

able control, particularly in turbulent air, and introduced new rotor features.

It is this multitude of types and the incorporation of rejected ideas into successful models that leads to Mr. Loening's belief that research must be encouraged by those with the talent, imagination and courage to try new things, rather than to relegate further development of the helicopter to "long-haired research staffs with elaborate facilities who will spend so much time and money chasing down the intimate details of an original idea that was wrong to start with."

Most designs now flying he classifies as too slow to survive to any great extent. They are more complicated to fly than an airplane and cannot carry anything like as much load per horsepower.

Bill to Ease Curb On Modifications

WPB order reported in process of amendment with view to releasing materials for conversion of surplus planes.

An amendment to L-48, War Production Board order allocating priorities to civilian and commercial aircraft, which will permit modification of surplus government planes is clearing through WPB channels and should be issued almost immediately. The amendment was being held up on a technicality. It is termed Direction 1 to L-48.

Through the amendment to L-48, it will be possible for manufacturers and others to obtain necessary modification material to convert them to commercial use or to meet requirements for Civil Aeronautics Board certification. Some

surplus models will require modification before CAA will certify them for civilian use. This is the first time a procedure has been set up whereby modification material can be obtained without diversion of Army or Navy materials for the work.

► **Materials Negligible**—The materials used in connection with small trainers and liaison planes will be negligible, but in the case of airliners will be in greater volume although, measured against total demands, even these will be insignificant.

Heretofore, airliners returned to the carriers have been planes returned from the pool of those taken over by the Army, or replacements for these craft. Materials could be assigned from Army-Navy stocks for this work to place the commercial ships in condition comparable to that when they were taken over.

Since any further plane returns will be allocations of surplus planes through Defense Plant Corp. and the Surplus Property Board, it will be necessary to obtain priorities for material through civilian channels.

► **Lightplanes** — Meanwhile, processing of lightplane manufacturers' requests for civilian production are moving slowly through WPB. Engineering and Research Corp., builders of *Ercoupe*, are farther advanced than any other. The *Ercoupe* application has been handled through the Baltimore office of the War Manpower Commission and returned to WPB for final handling. WMC will not reveal its findings, and it will have great bearing on the decision, since the manpower question is paramount now. One complicating factor is reported to be a new service contract given Engineering and Research in the past few weeks.

McCarran Bill Leads To Monopoly—Royce

Airlines policy chairman reveals details of lines' argument against "Chosen Instrument" operation in international air transport.

Charging that a "chosen instrument" is a monopoly and is "the first step toward cartelism," Alexander B. Royce, chairman of the Airlines Committee for United States Air Policy, representing all American lines except Pan American and United, last week made public the committee's position on international operation after the war. The committee released a 27-page documentary report in which it raised nine key issues and discussed them with factual evidence to support the committee's stand against a "chosen instrument."

The record of the domestic airlines in this country has provided a sound basis for future development, declared Mr. Royce, and this successful operation offers a pattern for international air transport.

The United States has been committed to an established policy for domestic and international air transport for more than six years, the chairman continued, charging that the McCarran Bill, now before the Senate, provides a chosen instrument which would lead to monopolistic government ownership or control, which, he said, has proved ineffective abroad.

The nine key points discussed in the committee's report are:

1. The United States already has an established policy for both domestic and international air policy.
2. Regulated competition is in the public interest in time of peace and in the national interest in promoting adequate defense measures.
3. The McCarran bill would create a single "chosen instrument" to represent America in the field of international air transport.
4. The "chosen instrument" is a monopoly, whether represented by a "community company," a single company or a government operation. It is the first step toward "cartelism."
5. Cartels arise whenever any interest other than governments themselves negotiate with foreign countries.
6. The "chosen instrument" policy would not stimulate the development of technical improvements in the public and national interest.
7. The "chosen instrument" policy would, in effect, exclude new American pioneers from the field of international air transport.
8. The performance of American companies operating under regulated competition is unexcelled throughout the world.
9. The "anti-cartel" domestic airlines don't all want to fly the same routes. They ask only for regulated competition.

Over 100 Military Plane Types Eligible for Civil Certification

Out of six warplanes tested by CAA at its Vandalia base, only one, the Boeing C-73, acceptable without modification.

More than 100 military aircraft types are eligible for civil certification, most of them on the basis of similarity to previously approved civil models.

Six military models have been tested by the Civil Aeronautics Administration at its testing base at Vandalia, O., of which only one has been found eligible for certification without modification. Two are now being tested and three are scheduled for testing soon.

Approved plane is Boeing C-73, which is identical to the Boeing 247D except for power plant changes found to be satisfactory.

► **Naval Trainer Offered**—The Naval Aircraft Factory N3N-3, a trainer, will be approved with modifications. Some of these ships are now being offered in surplus sales.

Fairchild PT-23, not eligible at present, is being engineered by Fairchild to correct features standing in way of approval.

Republic AT-12 has been ruled ineligible on basis of flight characteristics.

North American O-47B, ineli-

gible at present, is being studied further and may be eligible with some modification.

► **Cessna**—Cessna's C-78 will require modifications, now being engineered, before being eligible for certification.

Now being tested are the Douglas C-39 and the Curtiss AT-9. Scheduled for testing are the Lockheed AT-18 and A-28A, and the Stearman PT-17.

Approved in basis of similarity to previously approved models are the Aeronca L-3 series from B to F models and the TG-5. B and C are O-58B's, D, the 65-TAF; E, 65-TAC and F, 65-CA.

The following Beech military models can be converted to C-18's civil models: UC-45, UC-45A-B-F, AT-7, AT-7A-B-C, JRB-1-2-3-4, and SNB-2 and 2-C. The UC-43A is approved as a D-17R, the 43C as a B-17D, the 43D as a B-17B, the 43E as a C-17R and the 43D as a C-17B.

Cessna UC-77B is certificated as a C-34 and the UC-94 as a C-165. Commonwealth Rearwin UC-102 is approved as a 9000ER and the 102A as an 8135.

► **Douglas**—The Douglas C-47 and 47A as DC-3C's. As DC-3A's are the C-48 and 48A, C-52 and 52A-B-C, C-53 and 53B-C-D and C-68. As DC-3's, the C-49 and 49A through 49K, C-50 and 50A-B-C-D and C-51.

Fairchild PT-19, 19A and B as M-62A's and the UC-86 as the 24R40. Grumman UC-103 as the G-32A and Howard UC-70 and 70B as DGA-15P and DGA-15J.

Interstate L-6, of which some are being offered as surplus, are the equivalent of the S-1B1.

Again in the transport field, Lockheed C-57 and 57B are certificated as 18-08, the C-59 as 18-07, the C-60 as 18-56. Navy versions and civilian models are R-50-1 as 18-40, R-50-2 as 18-07, the R-50-3 as 18-08, and R-50-5 and the R-50-6 as 18-56.

► **Piper**—The Piper L-4 and L-4A and BH are certificated as J3C-65, the L-4F as J5A, the L-4G as J5B and the TG-8 glider under the same civilian designation.

Ryan PT-22 and 22A certificate as the ST3-KR.



PAPER FUEL TANK:

This bomb-shaped papier maché container is an extra airplane gasoline tank found by Royal Air Force men at a captured Nazi airfield in Belgium. It is designed to be dropped by the plane after use.

Schweizer TG-2 has a civilian certificate as the SGS2-8.

Spartan UC-71 is civilian 7W.

Stinson L-9B is the 10A; UC81 the SR-8B; UC81A the SR-10G; UC-81B and SR-8D; UC81C the SR-9C; UC-81E the SR-9F; UC-81F the SR-10F; UC-81G the SR-9D; UC-81J the SR-9E, and the UC81K the SR-10C.

In the Taylorcraft series, the L-2 and L-2C are certificated as the DC-65. The L-2A-B and M as the DCO-65, the L-2F as the BL-65 and the L-2H as BC12-65, L-2J as BL12-65, L-2K as BF12-65, and TG-6 glider as ST-100.

Waco model certificates are: UC-72B as EGC-8; UC-72D as VKS-7; UC-72E as ZOC-7; UC-72H as ZQC-6 and UC-72K as YKS-7.

Vanaman Prisoner

Brig. Gen. Arthur W. Vanaman, first American general officer to be held a prisoner by the Germans, was captured after the plane on which he was acting as observer, was shot down in a recent bombing mission. General Vanaman was former American military attaché for air in Germany before the war, later serving as commanding general of the AAF Materiel Center, Wright Field, and as commanding general, Oklahoma City Air Service Command.

Study Compromise Contract Termination

Washington circles examine various types of agreements affecting aircraft industry.

Study is being given in official circles in Washington to various types of compromises between vertical and direct settlement of terminated war contracts affecting the aircraft industry as preliminary negotiations point up the complex problems that face the industry and its large number of aircraft subcontractors.

In an effort to meet the peculiar termination problems of aircraft manufacturers, it is now planned to assign teams of contract termination officers to major aircraft plants within the next few weeks to assist them in pre-planning termination settlements.

► **Top Men Urged for Job**—Both industry and government officials in Washington have been urging

TELLING THE WORLD

• John Maitland Cook becomes new advertising manager for Northwest Airlines. The newly created advertising department will co-ordinate activities between the company and the advertising agency handling the account. Cook has been advertising manager



for Davidson-Boutelle stores and was sales promotion manager for the Kansas City Journal. Other advertising positions include Sears Roebuck and the Boston Store in Milwaukee.

• James C. De Long, New York advertising executive, has been named director of advertising for Transcontinental & Western Air, Inc. He was with American Foreign Service before becoming aviation editor of the *Financial World* in New York in



1929. Later he was appointed vice-president and advertising director of the magazine. In 1938 he became New York advertising representative of Curtis Publishing Co., and then was advertising director of General Cable Corp., New York. De Long has headquarters in Kansas City.

industry executives to assign top men to pre-planning on termination and while some companies have moved rapidly on this suggestion, others were reported lagging and thereby complicating and prolonging termination settlements.

Brig. Gen. Frederick M. Hopkins, Jr., chief of the resources division of the office of assistant chief of air staff, material and service, AAF, has urged earlier filing of termination claims by aircraft contractors and reported that the time lag between effective date of termination and submission of claims to the AAF has increased during the first half of this year.

► **Settlement Delays**—A total of 486 termination cases representing over \$1,000,000,000 in face value of contracts cancelled by the AAF in the first half of the year are more than four months old and in 316 or over 65 percent of these cases, no claim has been filed. General Hopkins said that AAF is settling claims on an average of 66 days from submission but on the average 126 days are elapsing before claims are submitted by the contractors.

Special problems facing the aircraft industry are understood by the AAF and General Hopkins listed among these the financial position of the industry, the problem of allocating inventories to specific contracts, the large number of subcontractors and difficulties of settling cost-plus-fixed-fee contracts.

► **Complicated Problem**—Cost-plus-fixed-fee contracts cover about half the outstanding contracts in the industry and present one of the most complicated settlement problems, particularly as to methods by which settlements are reached, and the finality which they will have, once reached.

All vouchers must be reviewed by the General Accounting Office as well as by Army auditors, either of whom may take an opposite view of any cost question, under present methods.

General Hopkins commented that the problem on the day of termination, therefore, is whether all these questions may be included within a negotiated settlement, which will be final between the government and the contractor except for mutual mistake or fraud.

► **Questionnaire**—To aid in contract terminations, government agencies have accepted a simplified termination questionnaire designed to result in large savings of time and expense. It was drawn by a special subcommittee of the advisory com-

mittee on government questionnaires, headed by F. Stuart Fitzpatrick, an official of the United States Chamber of Commerce.

No. American Makes New Secret Planes

Holds contracts for 500 of restricted models in addition to approximately 10,000 *Mustang* fighters, report to stockholders reveals.

Disclosure that North American Aviation, Inc., now holds contracts for more than 500 planes of "two new secret types" in addition to those for approximately 10,000 P-51 *Mustang* fighters was made by J. H. Kindelberger, president, in a report to the annual stockholders meeting at Wilmington, Del.

He reminded them, however, that all contracts are subject to the convenience of the government and are liable to termination or cutback as the war picture changes.

► **Speed, Climb Increased**—Airplane designers at North American are engineering fighters 30 percent faster with a rate of climb nearly double that of present fighters, he said, and bombers which will be 50 percent faster and have operational ceilings from 25 to 30 percent higher than current models. These planes may be in production within two years.

Kindelberger's report covered 1943 operations and ranged as well into an analysis of North American's engineering and production achievements during the past year, which included: 1. Production of 80 percent more *Mustang* fighters at North American's Inglewood plant today than a year ago; 2. An average monthly production of B-25 *Mitchell* bombers at the company's Kansas City plant, 66 percent greater than in 1943; 3. Average production during each month of 1944 of *Mustangs*, AT-6 *Texan* trainers and B-24 *Liberator* bombers at the company's Dallas plant in excess of the greatest number of planes the government has ever received in one month from any other single manufacturing operation.

► **Costs Reduced**—This production, he said, enabled the company to reduce average cost to the government of P-51 *Mustangs* by more than 18.5 percent over the cost on Jan. 1, and were instrumental in effecting a reduction of 26.5 percent in cost of B-25 *Mitchells*, compared to last Jan. 1.

Data on RAF's New *Tempest* Released

Details of the Royal Air Force's Hawker *Tempest*, now off the British secret list, disclose that this successor to the *Hurricane* and *Typhoon* is the top scoring fighter against German flying bombs, having knocked down more than 600.

Like its predecessors, the *Tempest* is a single-seat low-wing monoplane, designed by Sydney Camm. It is powered with a supercharged Napier Sabre engine of 2,200 hp. and has a de Havilland variable pitch four-bladed propeller. Armament consists of four 20 mm. cannon. Wing span is 41 feet, length 33 feet, 8 inches, height 14 feet, 10 inches, with tail up and one blade vertical and 16 feet 1 inch with tail down.

Specifications were released in London by the Air Ministry and in Washington by the British Information Service. It was disclosed that in addition to their operations against the flying bombs, *Tempests* also are operating from Belgian bases against the *Luftwaffe's* swallow-tailed jet plane *Messerschmitt* 262.

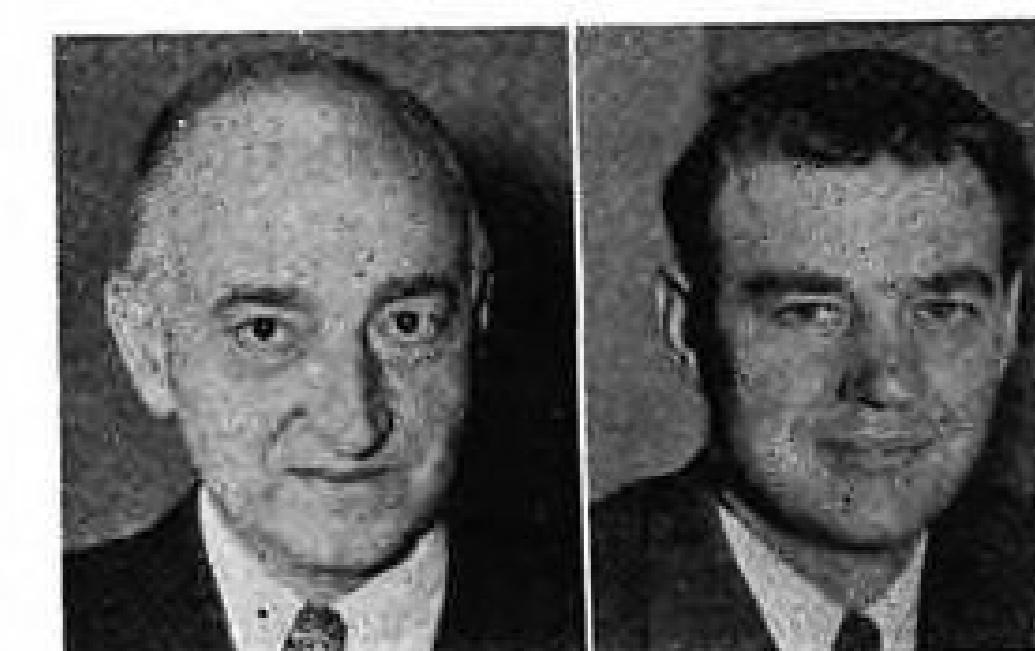
British pilots report speed and easy handling of the *Tempest* is such that they find the German fighters FW 190's and ME 109's easier to shoot down than flying bombs.

The *Tempest* resembles the *Typhoon*, but with the elliptical wing of the *Spitfire* and the high tail fin rising from the fuselage in a curve similar to the *Flying Fortress*.



France

Vanderlipp



Witherspoon

Fuhrer

Davenport, resigned. Ralph A. Fuhrer, general superintendent of planning and tooling at the Columbus plant, becomes factory manager succeeding Vanderlipp.

35-40 Place 'Copter Buses Forecast

Author of *Anything a Horse Can Do* predicts regular service to areas lacking convenient port facilities.

Helicopter buses capable of carrying 35 to 40 passengers and a small amount of mail and baggage, undoubtedly will operate within the next decade as commercial carriers to serve communities without convenient airport facilities, Col. H. Franklin Gregory, AAF Wright Field helicopter specialist predicts in his newly published book, *Anything a Horse Can Do* (Reynal & Hitchcock, New York).

Gregory, who has flown most of the more successful helicopter types now under development and is recognized as a pioneer in developing rotary winged aircraft for military uses, warns that the powerful downdraft created by the helicopter's rotors would "blow all the neighbor's clothes off the line, scattering paper and trash in all directions, and cause a small hurricane in landing and takeoff." He predicts that there will be thousands of helicopters in use within a few years, but not millions.

► **15-Ton Buses**—The helicopter buses he believes may have a gross weight of 15 tons, and based on present helicopter design data would require approximately 2,500 hp., and might have as many as four rotors, cruising at between 100 and 150 mph., with the added factor of vertical ascents and descents.

Two-place helicopters, powered

with 130 to 150 hp. engines, highly streamlined and with excellent sales appeal, will be able to fly non-stop from New York to Washington in less than three hours, and will have service ceilings enabling them to fly with safety over any mountain ranges on this continent. Larger four-place helicopters with 300 to 400 hp. engines, will equal in performance the two-place models. Prices will be too high for the average wage earner, with the 4-place helicopter costing about \$10,000 and the smaller helicopter proportionately less. Buyers will be in the income class of speedboat or sailing boat owners, even after costs have been lowered by substantial mass production, he says.

France Heads C-W St. Louis Plant

Charles W. France, Curtiss-Wright vice-president and general manager of the Airplane Division Buffalo plant, is returning to St. Louis as general manager of the plant. Since St. Louis will be the first plant to convert to manufacture of the commercial version of the *Commando*, France's long experience in commercial aircraft and the airline field will be utilized there. N. F. Vanderlipp, factory manager of the Columbus plant, becomes general manager of the Buffalo plant producing *Commandos*. In addition, Vanderlipp will coordinate certain Navy experimental work with Columbus. Burton H. Witherspoon, general manager of the St. Louis plant, returns to Buffalo as director of business research replacing Dr. Donald H.

Human Pick Up

• Reports from Europe of the use of the aerial pickup system in "snatching" individual patriots from the ground of occupied countries in much the same way that first airmail, and later gliders have been picked up by airplanes in flight, are authenticated by the statement of All-American Aviation's president, Halsey R. Bazley:

"We know it can be done."

It is understood that the human pickup used in Europe is the result of developments carried on in this country for more than a year, before the device was ready for use. Early experiments include the lifting of sheep from the ground by the pickup harness which later was modified, and used to lift human beings successfully.

The London *Star* reports that the pickup harness is dropped from a plane to the patriots in occupied countries; one of them puts on the harness which is attached to a tow rope, and the pickup plane hauls him into the air "completely free of risk" and with "strain less than a parachute jump." The *Star* says the Germans know of the system but are powerless to prevent it, and that it is the means of bringing much information to the United Nations from inside occupied countries.

PRIVATE FLYING

Improved Luscombe Silvaire Prepared for Post-War Market

Engineers working on secret designs for peacetime luxury lightplane, described as all metal but fabric wing covering.

By BLAINE STUBBLEFIELD

Luscombe Airplane Corp. will reinstate its metal *Silvaire* lightplane on the market, with a number of minor improvements, as soon as war contract requirements will permit. Meanwhile engineers are working on post-war designs which they are not ready to discuss.

About 1200 *Silvaires* were delivered between initial production in 1937 and the company's conversion to aircraft sub-assembly war contracts. Luscombe officials estimate that about 1,000 of them still are flying. A great many *Silvaires* were in war training service, and since then have been popular with bidders in the surplus auction market.

► **In \$2000 Class**—The *Silvaire* is all metal except fabric wing covering is in the two-thousand-dollar bracket; and is one of the most eye-appealing designs in the personal plane field. High wing attachment gives a good downward view from the cabin, which is honestly described as luxurious. Dual stick control, side-by-side seating of two, highly refined arrangement for instruments and radio, justify its inclusion in the quality class. Range is about 500 miles, with 23 gallons of gasoline, burned at five gallons per hour. Three alternate engines are offered. The 75 hp Continental has fuel injection instead of carburetion, and does not freeze.

Luscombe is making its bid for position in the private and training plane market on characteristics described as equal to or better than those of other conventional designs in this class, plus metal construction. Company engineers believe the trend is toward metal in lightplane as well as in transport and military types. They argue that personal aviation needs the permanency and durability of metal. And they add that they can easily replace

of their most interesting selling points is under the head of maintenance. War training experience, they say, has reversed the common notion that metal dents and penetrations are hard to repair. According to their reports from training contractors, dents are as easy to straighten as crinkled car fenders. Penetrations and weakened creases are quickly and neatly repaired with new sheet and rivets.

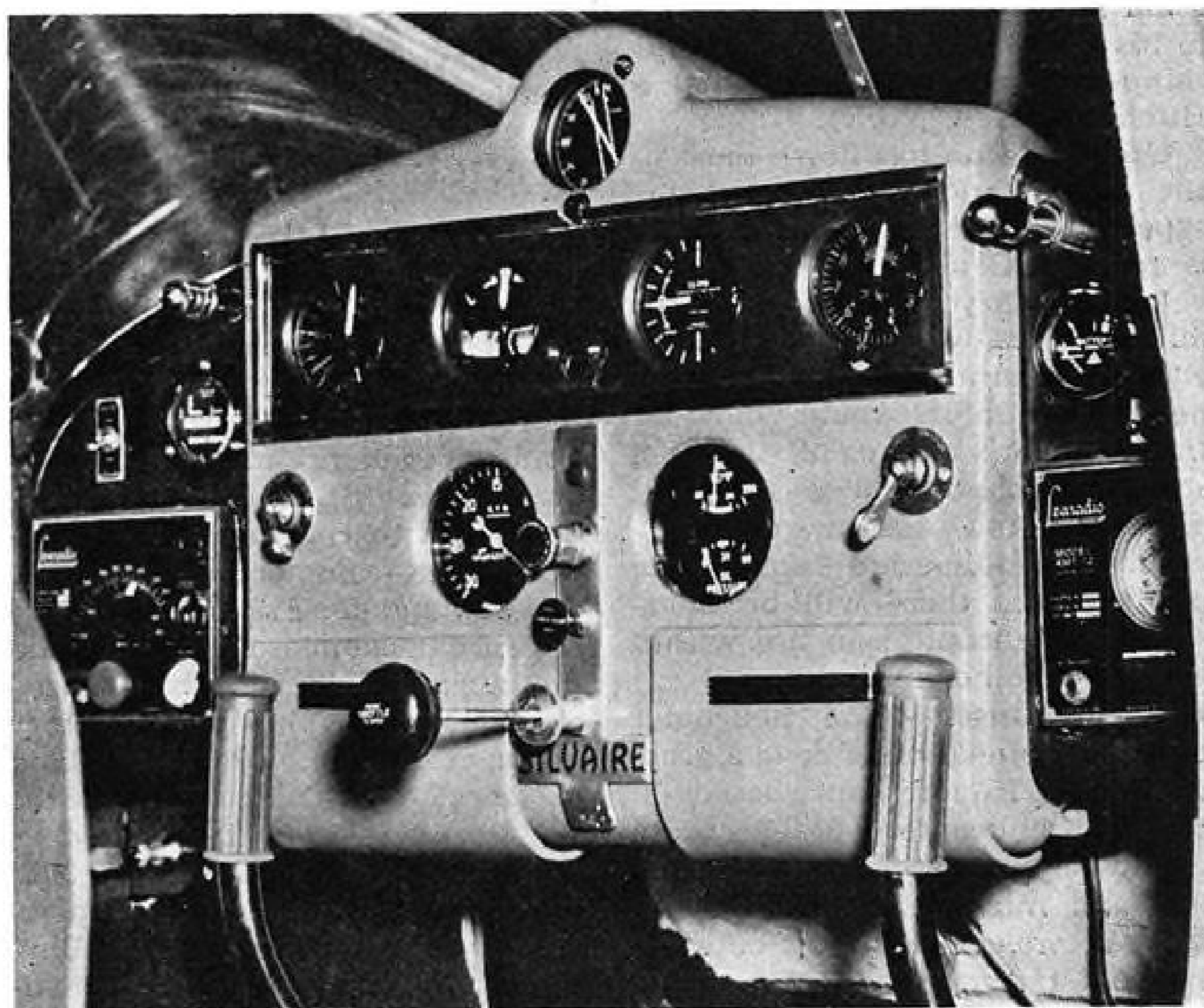
Metal has important advantages in parts replacement, too, Luscombe engineers say. For example, the skin-stressed fuselage is made in several sections. These sections are interchangeable. A fairly bad wreck can be salvaged,

the present fabric wing covering with a metal skin.

► **Maintenance Selling Point**—One



Float-Equipped "Silvaire": This Luscombe Silvaire doubles as a sea-plane. It is useful for landing at air harbors such as those under consideration along New York waterfronts.



Luscombe's Panel: Radio equipment, instrument panel and dual controls of Luscombe Silvaire Model 8D are shown here.

at relatively low cost, with parts replacement saving the expense of rebuilding.

► **Experience Factor**—Luscombe's pre-war metal experience is being augmented by capacity production of metal sub-assemblies for other warplanes. These include bomb bay doors for the Grumman *Avenger*; rudders and vertical fins for the Grumman *Hellcat* and *Wildcat*; fuel tanks for the Curtiss *Commando*; gasoline tanks for the Martin *Marauder*; carburetor air scoops; ammunition boxes and all other metal items. The company is the largest producer of ammunition boxes, and is sole producer for Grumman. Their engineers have made a special study of this item, and have cut the cost in half.

Well before the war, Luscombe was the only plant in its field, officials say, having an overhead conveyor system and a mechanically moved line. It was among the first to use Masonite dies for forming fuselage and cowl sections. The management believes Luscombe's combination of experience in metal, in volume production methods, plus many new devices and methods developed in connection with war work, can be turned into quality metal airplanes at minimum cost.

► **Geared for 2,000 a Year**—Prior to conversion, the Luscombe plant reached an average of 20 units per week, and was being geared up to a volume of 2,000 per year. Most of the facilities are owned outright by Luscombe, Defense Plant Corp. having a small interest. Located in the country a few minutes out of Trenton, N. J., the property has plenty of room to expand, and has an adjacent airport.

The first plane built by Luscombe, called the *Phantom*, powered with a Warner radial 145 hp engine and listed at about \$6,000, in 1934. Then came the Model 90, in 1936, with a 90 hp radial, selling at about \$4,000. Both were metal, high wing monoplanes. First of the *Silvaire* line was the Luscombe "50," with a Continental horizontally opposed 50 hp engine, seating two persons, side by side, and selling at \$1,985.

In 1939, Leopold H. P. Klotz acquired a controlling interest in the company, and is now its active head. Mr. Klotz was then, and still is, impressed by the mass production possibilities of light metal airplanes. Further refinements are planned.



Pre-War Luscombe: Trim lines of the Luscombe Silvaire, one of the few metal fuselage lightplanes in existence before the war, are apparent in this aerial photo.

Parks Offers New Plane Insurance Plan

Program announced in connection with time-purchase arrangement for buying *Ercoupes*.

A new airplane insurance program, with costs reduced from 35 to 50 per cent, has been announced by Oliver L. Parks, East St. Louis, Ill., in connection with a time-purchase arrangement for buying *Ercoupes*. Spinproof characteristics of the airplane were a decisive factor in obtaining the lower insurance rates.

The rates are applied to the *Ercoupe*, only when it is sold by Parks Aircraft Sales and Service, in collaboration with the Manchester Bank of St. Louis and General Insurers, Inc., representing the St. Louis Fire & Marine and the Washington Fire & Marine Insurance companies.

► **Covers Entire Family**—The plan without extra charge also permits members of the buyer's immediate family to fly his plane as well as any certificated pilot who has the buyer's consent. Standard policies cover only the purchaser and/or other individuals specifically named.

Three types of policies are offered: "limited hull" coverage, designed to fit this model plane; "named-peril" coverage, limited to stated risks, and "comprehensive hull" coverage which approximates the "all-risk" policy, the broadest coverage written on private planes. Rates run from \$4.50 per \$100 of insurance for the lim-

ited hull policy, to \$6.50 for the named peril policy and \$9 for comprehensive coverage.

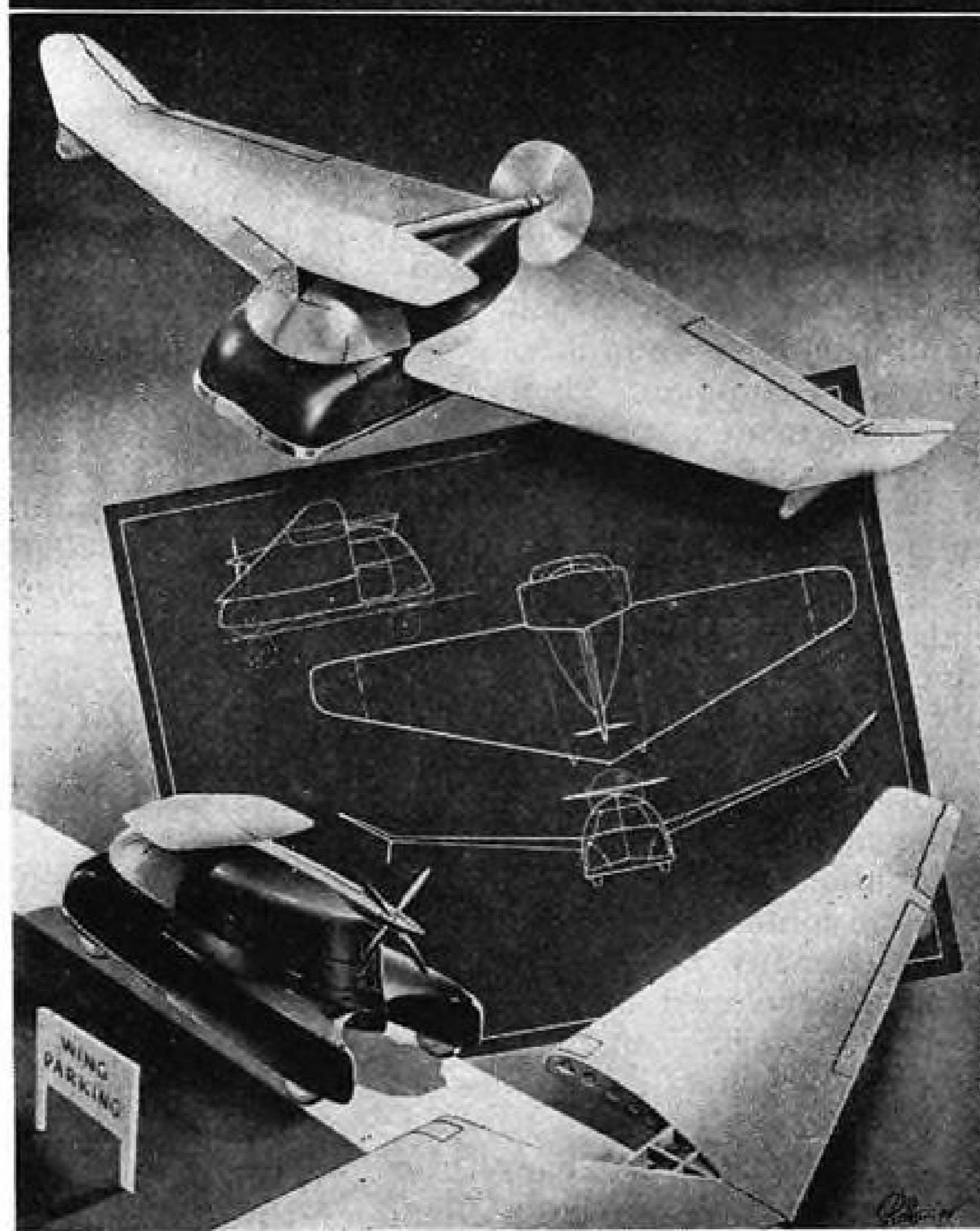
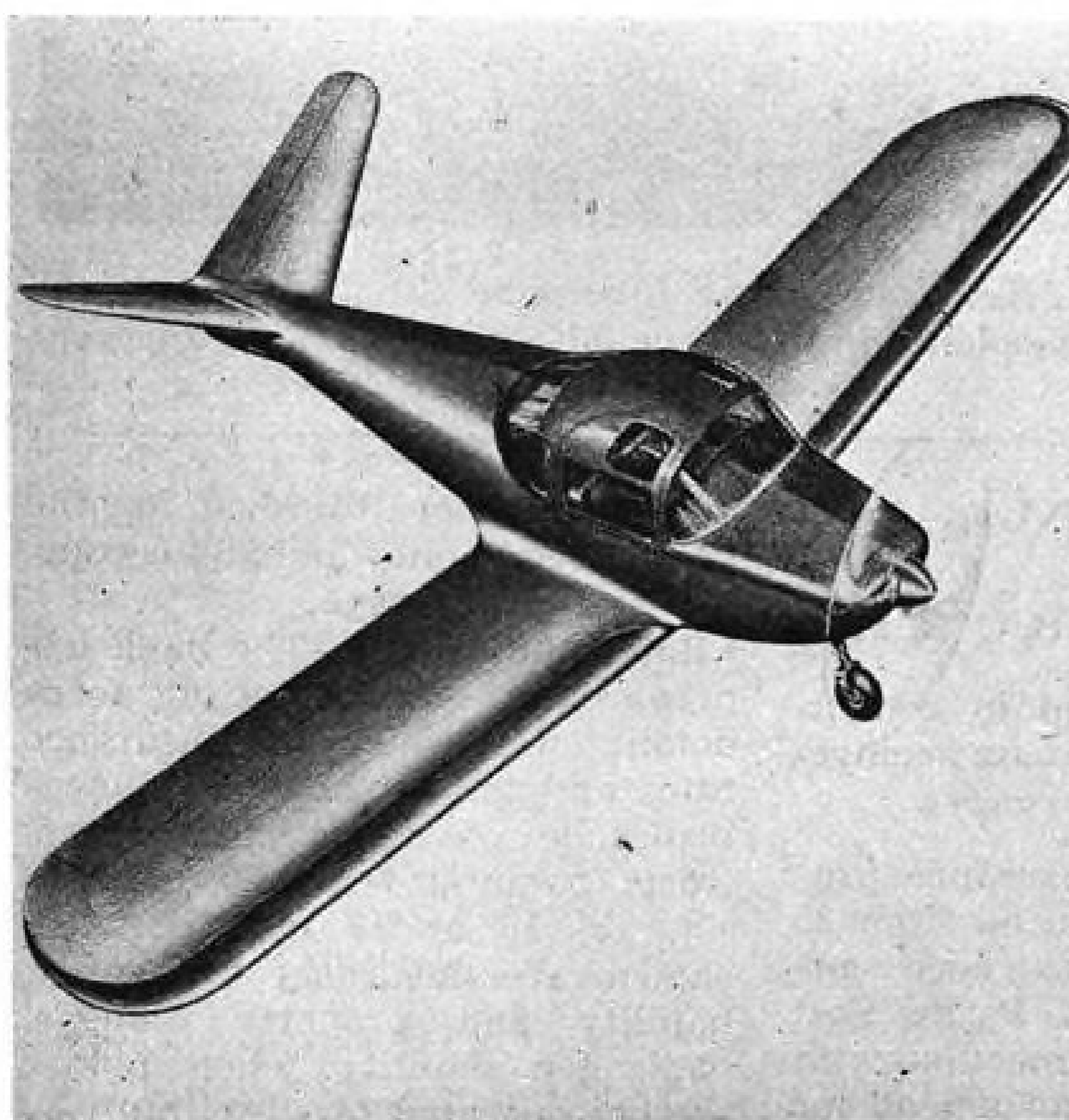
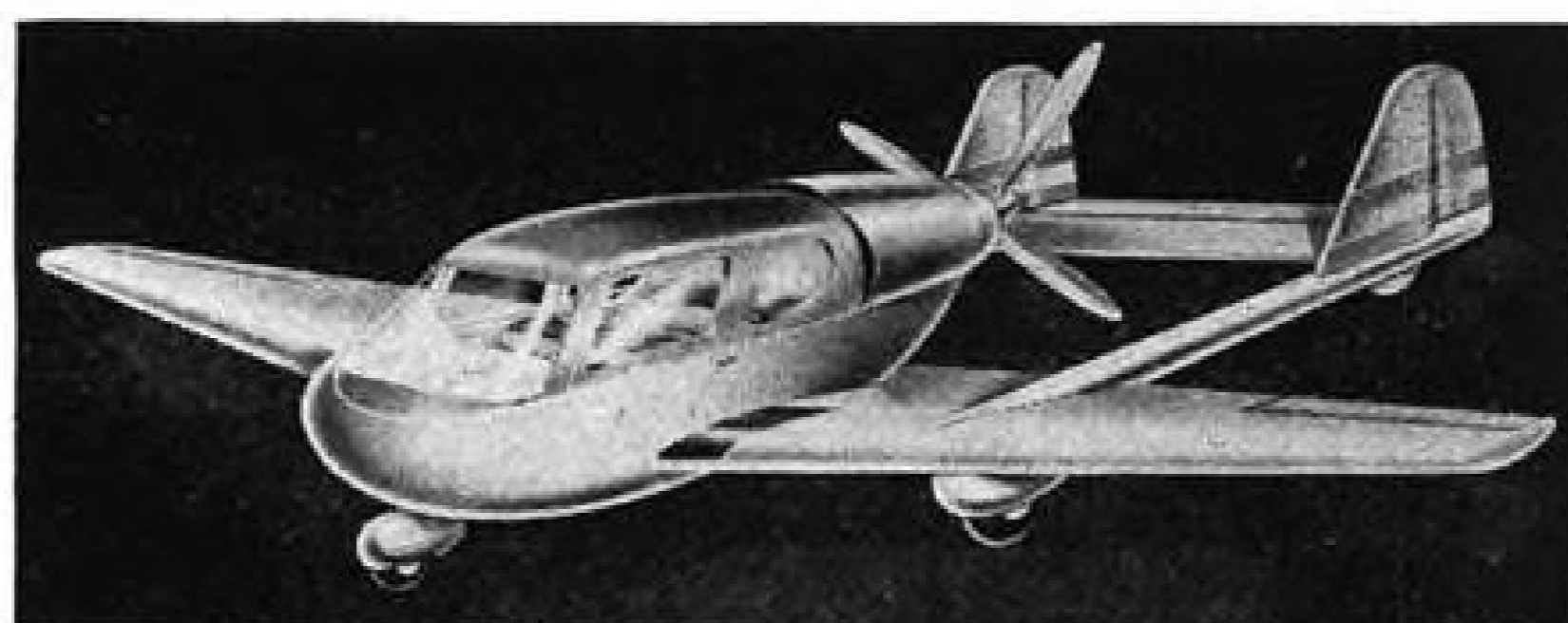
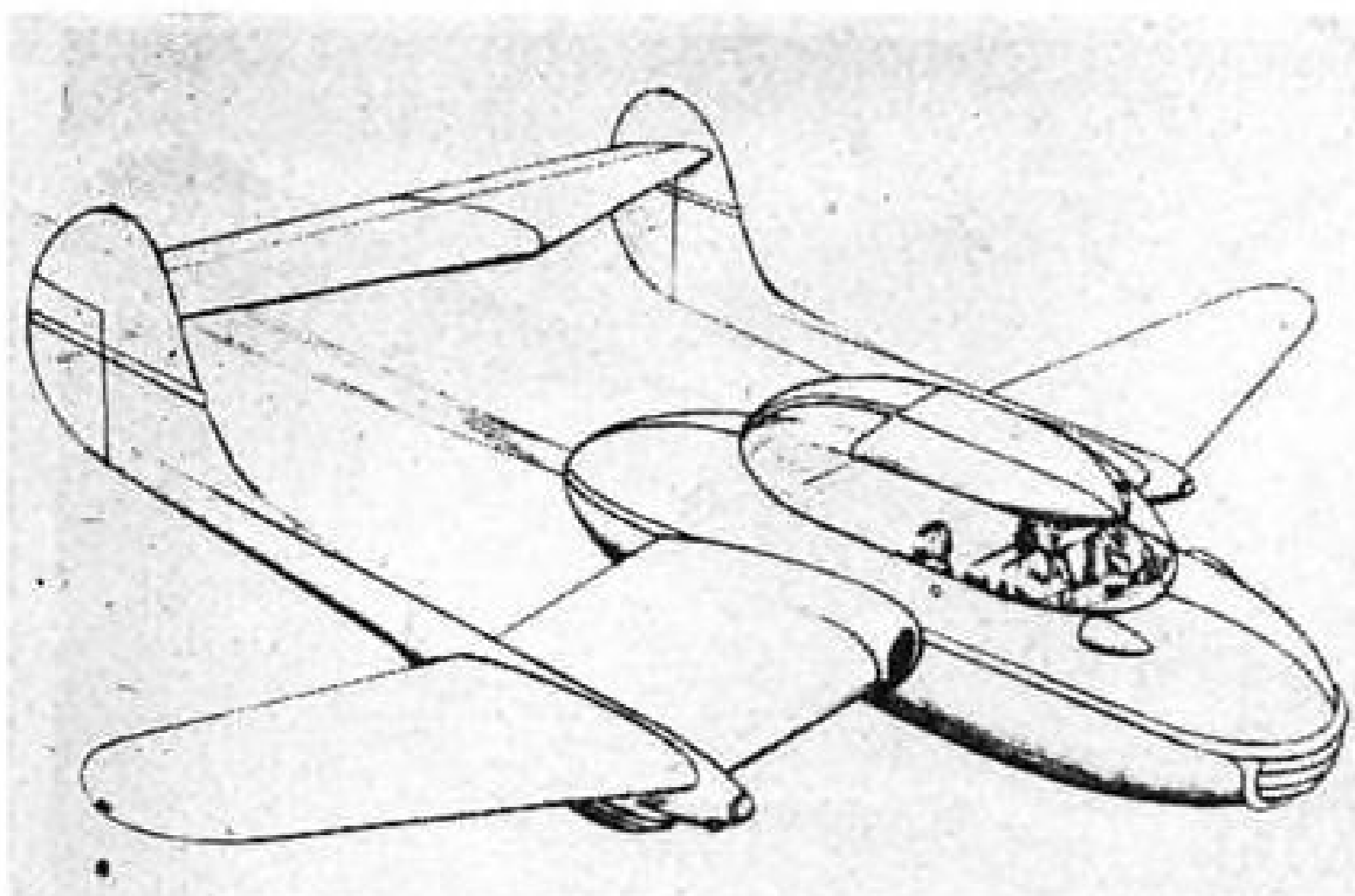
► **Rates and Tables**—The bank has prepared a booklet setting forth details of the various insurance rates and tables showing finance-insurance payments under contracts running from 90 days to six, 12, 15 or 18 months. Also shown are insurance tables on liability and property damage, passenger liability when planes are not operated for hire, hull insurance rates on other planes and price lists for all well-known types of private-owner airplanes.

The Parks program proposes when new planes are available to sell *Ercoupes* complete with flight instruction up to solo and two hours additional check time over the next 15 hours of flying, all included in the purchase. The company now has nine of the planes, used solely for demonstration and instruction.

Post-War Market

Sale of 100,000 private planes to Americans within one year after the war was predicted by William Brotherton of Ryan Aeronautical Co., speaking recently before the National Aeronautic Association quarterly meeting in Sacramento, Calif.

Brotherton said this country will need 15,000 airfields, compared with the present 2,500. He reported the United States has trained 100,000 military pilots a year, at the peak of its present war training program compared with 23,000 licensed pilots five years ago.



Upper left: Nonprofessional Winner; upper right: Professional Winner; lower left: Unorthodox Tail Design; lower right: Roadable Plane Entry.

Plane Preferences Shown in Contest

Both first prizes awarded by *Popular Science Monthly* to amateur and professional entries are for models of four-place aircraft with twin tail booms.

A trend toward public preference for four-place personal planes with twin tail booms enclosing the fuselage, is apparent in the announcement of winners in the *Popular Science Monthly* personal-type airplane design competition.

Both Pfc. Don Leroy Fotheringham, 19-year-old Marine who won first amateur prize, and Donald J. Wheeler, Seattle, Boeing engineer who won first professional prize, chose this type of plane as their personal preference. Both received \$1,000 war bonds.

Anti-Collision Devices — Pfc. Fotheringham's plane design mounts its tail high, to avoid inter-

ference with its pusher jet-propulsion engine. It is equipped with anti-collision devices, television screens and push-button radio for instrument flying. Engineer Wheeler's design uses a conventional engine placed in pusher position with three bladed propeller, while his craft's tail surfaces are not elevated.

A total of 3,345 designs were submitted in professional and amateur divisions of the contest, by designers from all 48 states and 10 foreign countries. Statements accompanying the designs indicated few wanted rotary-wing aircraft, and that a big majority would prefer to pay \$1,500 to \$3,500 for a plane, with better performance, than to pay below \$1,000 with minimum conveniences. Favored speed was about 130 mph.

500-Mile Range—Range requirements averaged about 500 miles. Statements emphasized need for higher speeds and longer range than has been designed into small

private-owner planes up to this time. The twin tail boom design was favored because of protection afforded by screening booms from whirling propeller or puffing jet. The design also was liked because of improved visibility it affords.

Retractable tricycle gear, slots, flaps, dual controls so that both persons in front seat could take turns flying, were highly favored. Other designers, in smaller numbers called for amphibians, sound-proofing, removable wings, wood or plastic construction, self-starters, integration of rudder and aileron control.

Judges were Col. Earle Johnson, national CAP commander; Oliver Parks, president of Parks Air College, East St. Louis; Edward S. Evans, Detroit; Lieut. Col. Leon B. Lent, National Inventors Council; Arthur Wakeling, assistant editor, and C. B. Colby, aviation editor of *Popular Science Monthly*.

A total of \$5,000 in war bonds was distributed among 40 winners.

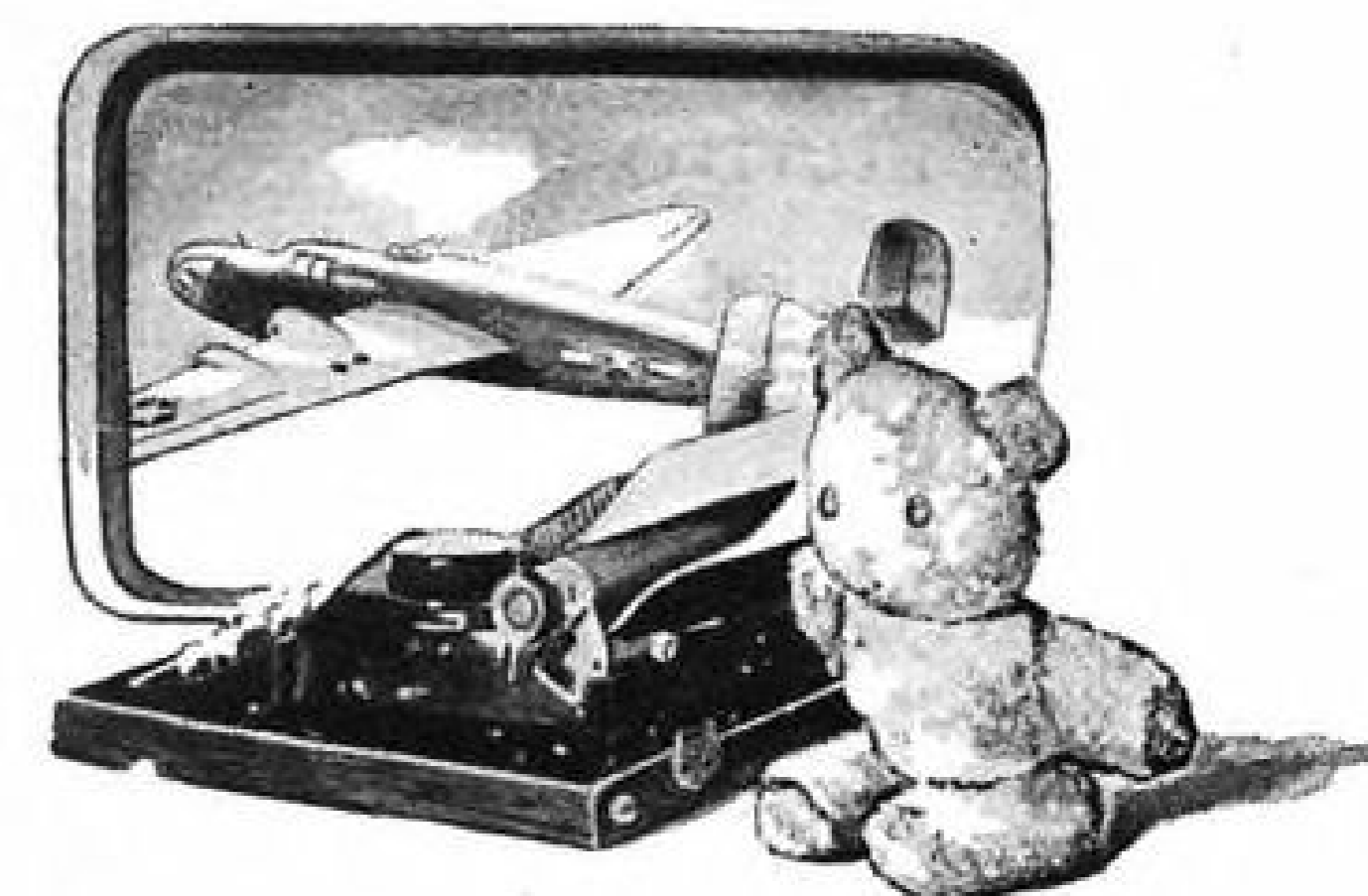
They wouldn't fly without them...



A white kitten was the mascot of a troop carrier plane in the New Guinea area. She gamboled around the plane, quite at home, 10,000 feet above the Pacific.



Speaking of animals—a famous war correspondent always carried a little brown teddy bear whenever he traveled by plane.



A waist gunner on one of our four-engined bombers claims it's a locket containing a few ringlets of his wife's blonde hair that always brings him back safe and sound.

Ethyl antiknock fluid goes along with fighting planes powered by U.S. made gasoline. *It goes into practically every gallon of fighting grade aviation fuel*—which is one reason why our fliers not only have the best gasoline but plenty of it.

ETHYL CORPORATION
Chrysler Building, New York City



ETHYL is a trade mark name



Proposed East River Sky Dock: Design of P. H. Spencer, Republic engineer, for a New York sky dock or harbor for amphibians, seaplanes and helicopters, would be built by fill-in along East River drive to provide a parking and service area for 45 to 50 aircraft.

Air Harbors Urged For N.Y. Waterfront

Proposal believed logical solution to problem in view of extremely limited space available for planes.

Proposals to utilize Manhattan's waterfront areas for air harbors may be New York's most logical solution to the problem of providing landing and service facilities for personal planes. There is serious doubt that other convenient space may be found in the metropolitan areas which can be converted to airports, at cost low enough to warrant its use.

Two designs for air harbors which will provide facilities for helicopters as well as for personal amphibians and seaplanes, prepared by P. H. Spencer, assistant chief commercial project engineer, Republic Aviation Corp., Farmingdale, L. I., are being sponsored by the aviation section of the New York Board of Trade.

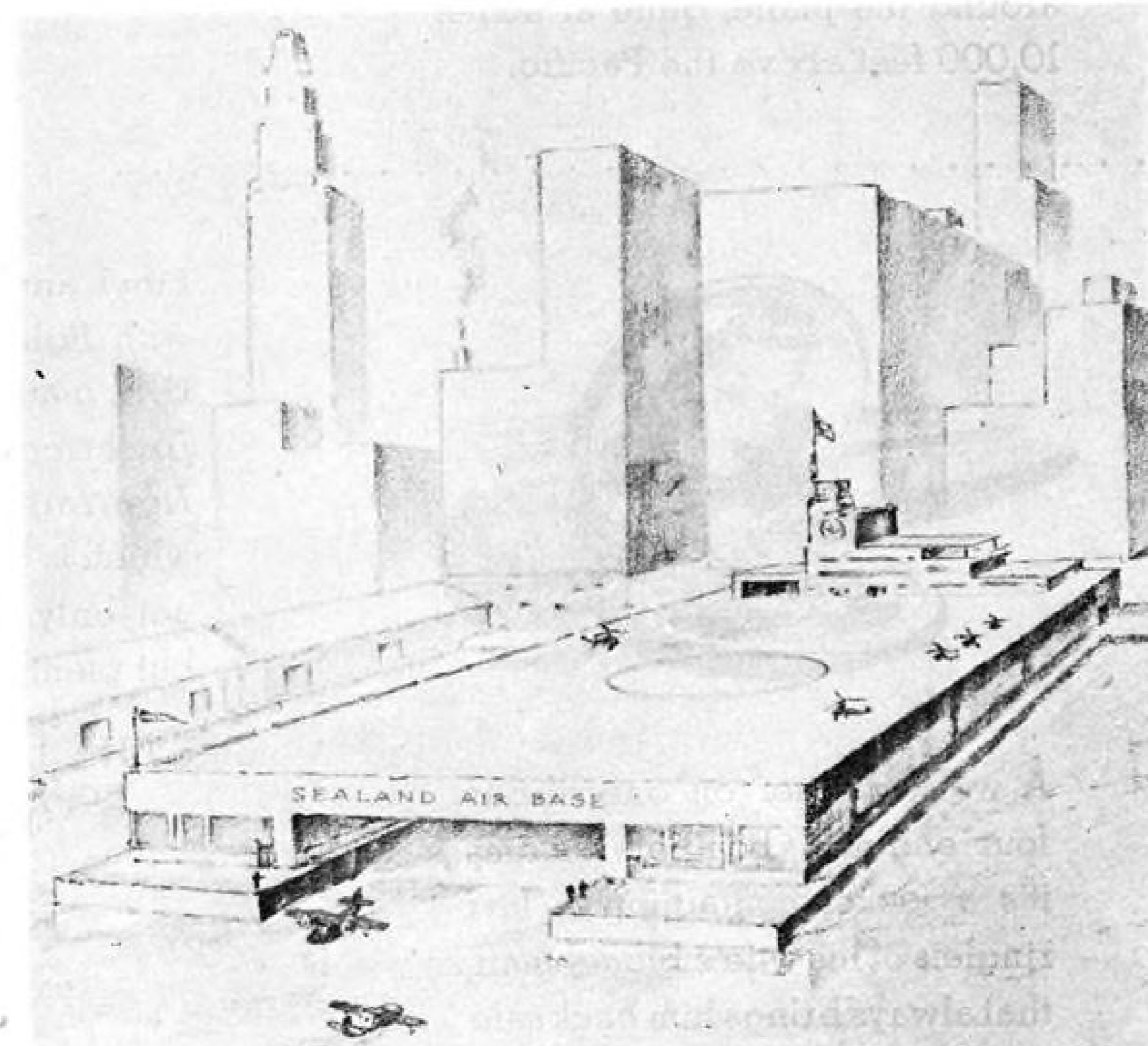
► **May Roof Over Piers**—Most novel of the two ideas proposes to roof over two adjoining piers on the North River or elsewhere, to provide a flat landing and parking surface 308 by 300 feet for helicopter operation. Parking area for approximately 25 helicopters or amphibians would be provided here, in addition to the landing area. The upper surface also would provide space for waiting room, restaurant, administration and operation office, control tower, elevator platform and service facilities. On a lower level, beneath the roof, an enclosed area, would provide 101,600 square feet for storage and parking; 21,-

500 square feet, a ramp 150 by 110 feet, and space for a control tower, service drive and service hangar. Forty-five to 50 medium size, amphibians, seaplanes or helicopters could be parked.

► **Potential** — Before wartime restrictions went into effect some 25 to 30 flyers daily made amphibian landings on East River at the foot of Wall Street, and others at 23rd Street. Spencer believes that, with small low-cost amphibians, seaplanes and helicopters "coming into production now for post-war delivery" a very large patronage will be available.

Pre-war amphibians and seaplanes used were larger, more expensive craft than those expected to be used in the post-war era, and usually were flown by professional pilots who would land the owners and passengers, and then had to fly the planes to other landing places because there was no facility at either 23rd St. or Wall St. to anchor or store.

Several aircraft manufacturers are designing small amphibians for post-war uses similar to those suggested by Spencer, among them his own company, Republic, and Allied Aviation Corp., Cockeysville, Md.



Piers Would Support N. Y. Sky Harbor Project: Landing and service facilities for helicopters, personal amphibians and seaplanes, would be provided on the Manhattan water front, by placing a flat-surfaced roof over two piers, as shown in the above design of P. H. Spencer, Republic Aircraft Corp., project engineer.

ANSWERING SOME HELICOPTER QUESTIONS

The past century has witnessed the development of the telegraph, electric light, telephone, automobile, airplane, radio and many other industrial marvels, which are still in the process of transforming living conditions throughout the world. And today there is wide enthusiasm over another revolutionary development—the helicopter . . . and wide curiosity concerning its future possibilities.

Therefore it is timely to publish a sincere and factual appraisal of the helicopter and an informed statement of the part it may play in future progress. As one of a dozen or more substantial and conservative industrial organizations engaged in helicopter development—the oldest in the rotary wing field—Kellett Aircraft Corporation accepts this opportunity to present some helicopter facts and to state the opinions of its management and engineering staff on the future of the helicopter.

DEVELOPMENT HAS BEEN RAPID

Today, in the United States, a half dozen or more different helicopter types are flying. To the best of our knowledge, helicopters are flying in no other country, and only in the United States is effective research and production being carried on. This is largely due to the sponsorship received from our military services during the war period.

WHAT CAN HELICOPTERS DO?

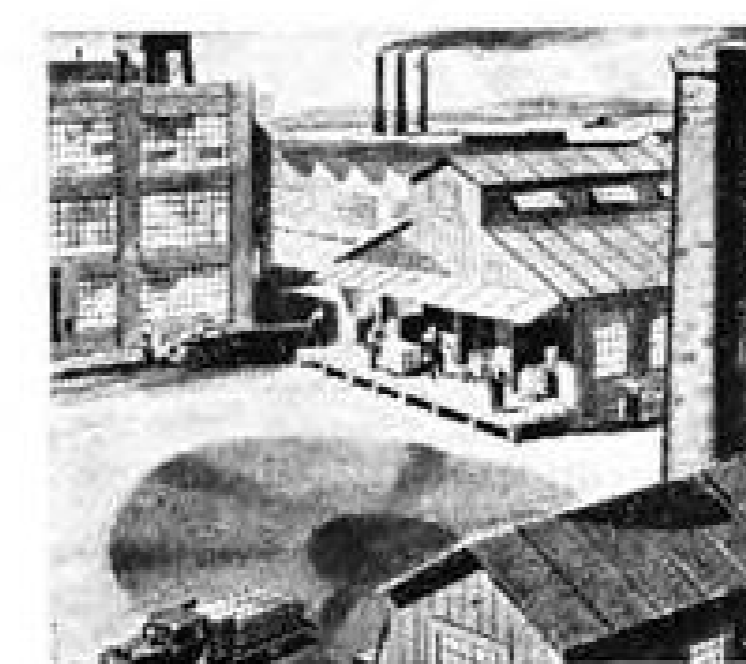
The helicopter, as a matter of normal flying operation, can rise straight into the air from a standing start; land in the same way; hang motionless in the air at low altitude over a given point for as long as the pilot wishes; fly backwards as easily as your automobile reverses; move directly sideways; fly safely inside a large auditorium.

ARE HELICOPTERS EASY TO FLY?

The men who pilot helicopters today are carefully trained, experienced men. Flying a helicopter is not a job for a novice. Many controls must be coordinated and the pilot must possess excellent skill and judgment. However, these "experts" are otherwise average individuals and one or two of them had never had experience in flying before they stepped into helicopters. It is reasonable to expect that "ease of flying" will be improved with further engineering developments.

WHAT WILL HELICOPTERS COST?

Helicopters, if they could be purchased on the market today (which military requirements will not permit), would be more expensive than the most costly automobile. Engines, intricate transmissions, control mechanisms and rotor blades require special design and construction methods. Helicopters are likely to be costly for some time to come. Of course, if the efficiency of mass production and the competitive enterprise system are permitted to have their effect, the cost



is certain to come down.

ARE HELICOPTERS SAFER?

It has not yet been demonstrated that a helicopter is any more safe or less safe than other aircraft. Conventional airplanes have established impressive records for safety.

WHO WILL USE HELICOPTERS?

It is our belief that helicopters will have their first important usefulness in fields where

other forms of transportation cannot serve. In many situations the helicopter will introduce important savings of time, manpower and money. For instance, in the spraying of agricultural crops, inspecting and servicing of cross country oil pipe lines and electric transmission lines; forest and shore patrol; prospecting; in mail and passenger service to areas otherwise inaccessible by air.

WILL HELICOPTERS BE FAST?

As aircraft, helicopters today are not very fast. To a world which accepts 400 m. p. h. flight as commonplace, they may never become "fast" aircraft. BUT the helicopter's as-a-crow-flies travel is much faster than automobile or train transportation, and even faster in some cases than the combination of land and plane travel which present-day air transport entails. The practical helicopter will not require a trip to an airport as a necessary preliminary to a flight.

WHAT ABOUT HELICOPTER CAPACITY?

Helicopters are still in the medium-power, cabin class. It may be some time before a type will develop which will cruise more than a few hundred miles without refueling or which will carry more of a load than a sedan.

HOW RAPIDLY WILL HELICOPTERS BE PERFECTED?

As in the case of the airplane, development of the helicopter is a matter of engineering. The present-day airplane is the result of many millions of engineering-man-hours over a period of years. The present-day helicopter is the result of several hundred thousand engineering-man-hours over a period of years—inconsequential as yet, compared with the engineering applied to the airplane of today. Over the years to come, additional millions of engineering-man-hours must be expended in order that the helicopter shall make its maximum contribution to progress. How soon that goal is reached depends on the rapidity with which the engineering investment can be made.

KELLETT HELICOPTERS

Kellett Aircraft Corporation has been a designer and builder of rotary wing aircraft for fifteen years. We have confidence in our ability to provide after-the-war helicopters which will be practical for many commercial uses. We look forward to widening fields of service—along with other aircraft manufacturers—in a better, happier, more air-minded future. Kellett Aircraft Corporation, Upper Darby (Philadelphia), Pa.

KELLETT

OLDEST ROTARY WING AIRCRAFT MANUFACTURING COMPANY

AVIATION NEWS • October 23, 1944

Ready...

Ready indeed is this soldier of the skies equipped with his **SAFE-T-CHUTE**. And ready also is our Company to keep pace, not only with the needs of those who fly, but with the development of other types of safety equipment. ☆ ☆ ☆ ☆ Today we're making **SAFE-T-CHUTES** for the para-troop and combat flyers...but when Victory has

been won we shall turn our resources to the manufacture of any form of **SAFE-T-PRODUCT** for which our broad experience has equipped us. At this time we invite inquiries from those who have a problem of designing or developing safety equipment in the apparel or kindred lines. ☆ ☆ ☆ ☆ Our engineering staff is available for consultation and we are prepared to plan, advise or manufacture.



NEW educational air-safety film available for colleges—training schools—high schools. ALSO write for the informative Switlik Parachute Chart and new manual. All free for the asking.



THE MORE BONDS YOU BUY
THE MORE HOURS THEY FLY

SWITLIK PARACHUTE COMPANY
Dept. AN 10, TRENTON 7, NEW JERSEY

U.S. Army Air Force Photo



New Model 'Copter Has Tandem Rotors

Hartwig-Little "heliplane" expected to begin flight tests soon.

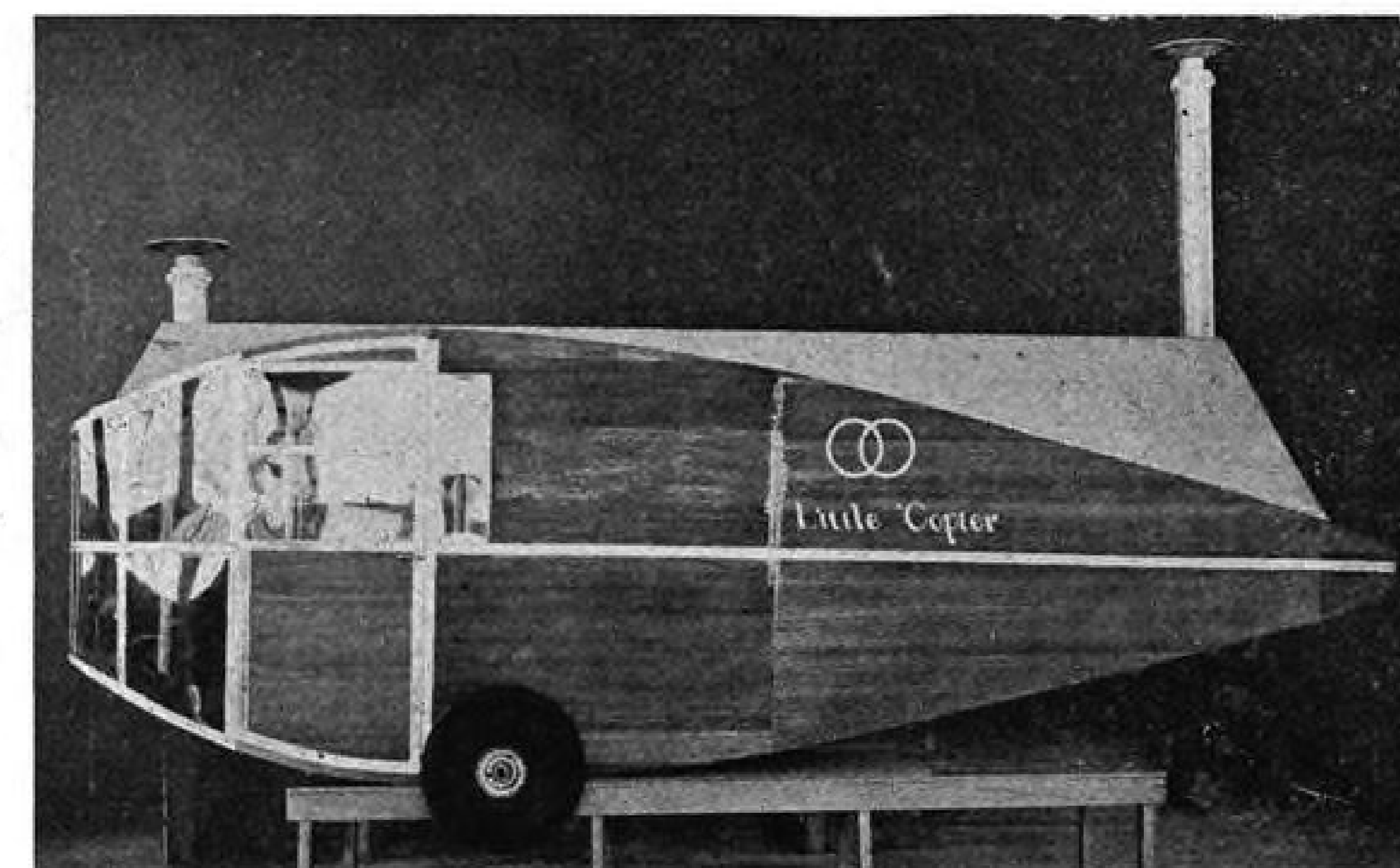
Tests of a novel tandem rotor helicopter built by Hartwig-Little Co., in San Antonio, are expected to start soon. Prototype of a two-place ship based on designs of David J. Little, vice president of the company, is virtually completed for flight testing.

The helicopter—dubbed a "heliplane" by its builders—differs from previously-announced types in that the dual rotors will be stepped, one rotating in a lower plane over the forward section and one in a higher plane at the tail. They are powered by a 90 hp. Franklin engine.

► **Automatic Controls**—Mr. Little claims several novel features, among them an automatic lift control, an automatic stabilizer and a fully automatic clutch. The automatic lift control, the designer says, provides adjustment of blades to develop a pre-determined lift "regardless of forward speed and changes in atmospheric conditions." One advantage in the automatic lift control is that, in the event of engine failure, the ideal auto-rotation adjustment is automatically effected, Mr. Little says.

The automatic stabilizer, Mr. Little says, will bring the helicopter to hovering position whenever the pilot releases the controls. The controls are simplified for one hand and one foot operation.

► **Flight Data**—The helicopter now being completed for testing purposes has a disc area of 830 square feet; disc loading, 1.925 lbs./ft.; power loading, 17.75 lbs./hp.; power-off landing speed, 14 ft./sec.;



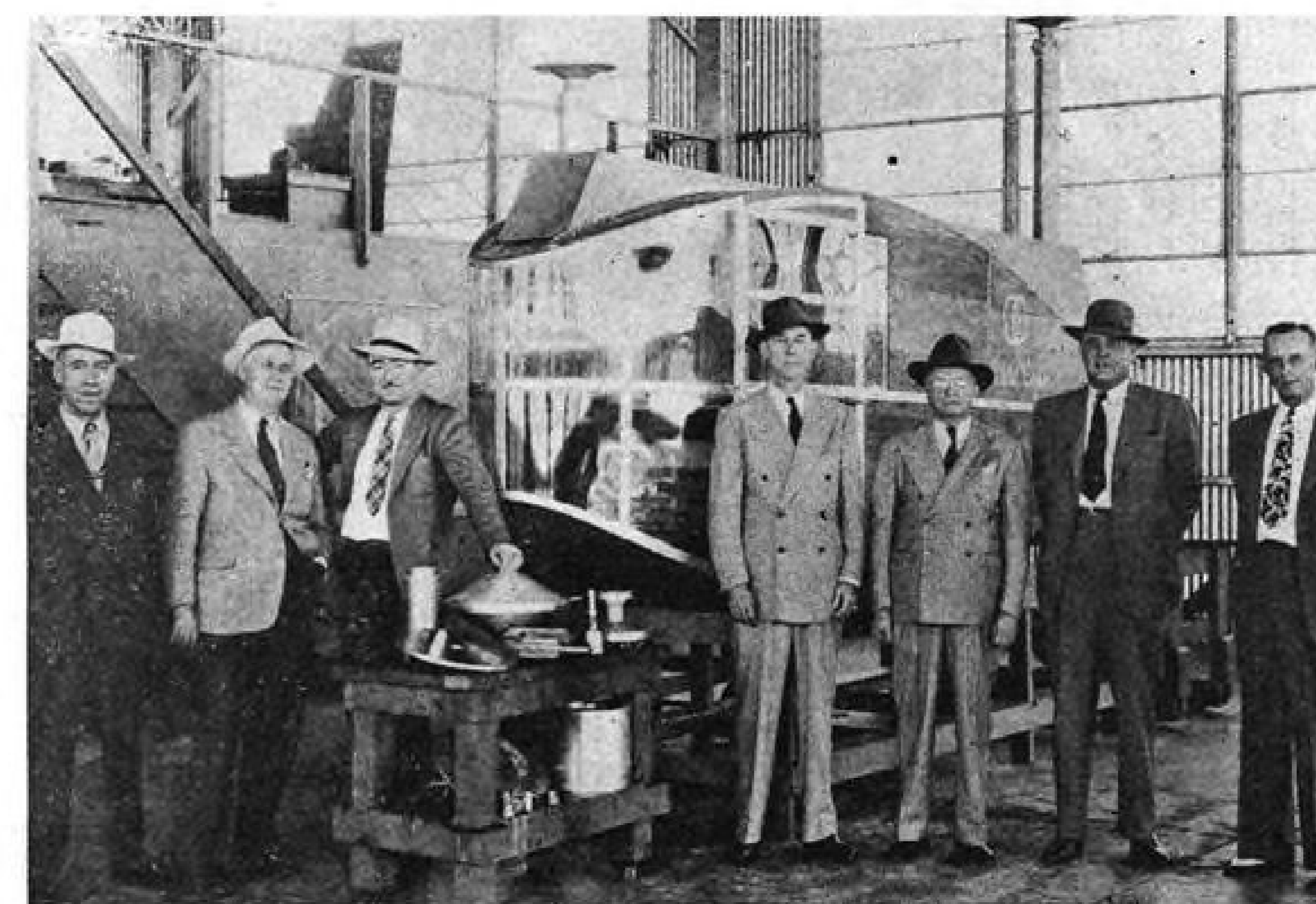
New Type Helicopter Near Test Stage: Photo shows unusual arrangement of rotor embodied in Hartwig-Little Co. "heliplane." A 90 hp. Franklin powers dual rotors arranged in tandem in stepped planes over the fuselage. A high degree of simplified control and automatic operation is claimed for the model, which is expected to be test flown soon.

top speed, 450 ft./sec.; mean effective blade speed, 382 ft./sec.

Harold L. Hartwig, president of the company, is owner of Hartwig Aircraft and until recently was operator of Bexar County Airport at San Antonio, Tex. The Hartwig-Little Co. was organized in July of this year. General offices are at 213 Canavan avenue, San

Antonio 7, Prior to organization of the company to construct the heliplane, Mr. Little had been principal aeronautical engineer for Don Hollister Associates of Detroit.

Company is also planning construction of a five-place heliplane of the same general design, powered with a 165 hp. Franklin engine.



"Heliplane" Builders and Officials at Preview: This front quarter view shows design features of new helicopter being completed for test flights by Hartwig-Little Co., of San Antonio. Left to right: Harold L. Hartwig, president of Hartwig Aircraft, which is building the 'copter; William V. Cullen, engineer, SWPC; Francis A. Murphy, procurement division, SWPC; Russell P. Grieve, vice president, San Antonio Manufacturers Association; C. N. Picnot, industrial commissioner, San Antonio Chamber of Commerce; C. L. Pugh, special representative, San Antonio Manufacturers Association; David J. Little, designer of the Little Copter and engineer in charge of development.

Fisherman's Air Park

An airpark for fishermen is proposed by business men at Marion, Kas., 60 miles from Wichita, who have purchased a lake waterfront track. The lake already has been stocked for fishing and resorts are built. An administration building and hangars would be within walking distance of lakeside cabins. The town of Marion, population 2,500, has become air-minded as the result of nearby army installations and test-flying of Wichita-made planes, and a score of residents already are learning to fly.

GOOD YEAR AIRCRAFT PRODUCTION REPORT

CURTISS-WRIGHT P-40 (Warhawk)

3,000 SETS STABILIZERS

CONTRACT RECEIVED: OCTOBER 1940
FIRST PRODUCTION UNIT DELIVERED: MAY 1941
100th PRODUCTION UNIT DELIVERED: AUGUST 1941
CONTRACTS COMPLETED: FEBRUARY 1943

Remarks: Speedy delivery of stabilizers for this fast pursuit plane, which bore brunt of early South Pacific and North African operations, proved Goodyear Aircraft Corporation's ability to team successfully with original designer in mass production of important components. Highlight of this production was development of Goodyear Aircraft's own dimpling process for rivet holes, preventing cracking and distortion—insuring better workmanship, fewer rejects, faster production.

Goodyear is building components for sixteen different Army-Navy types of aircraft, including complete Corsair fighters and airships.

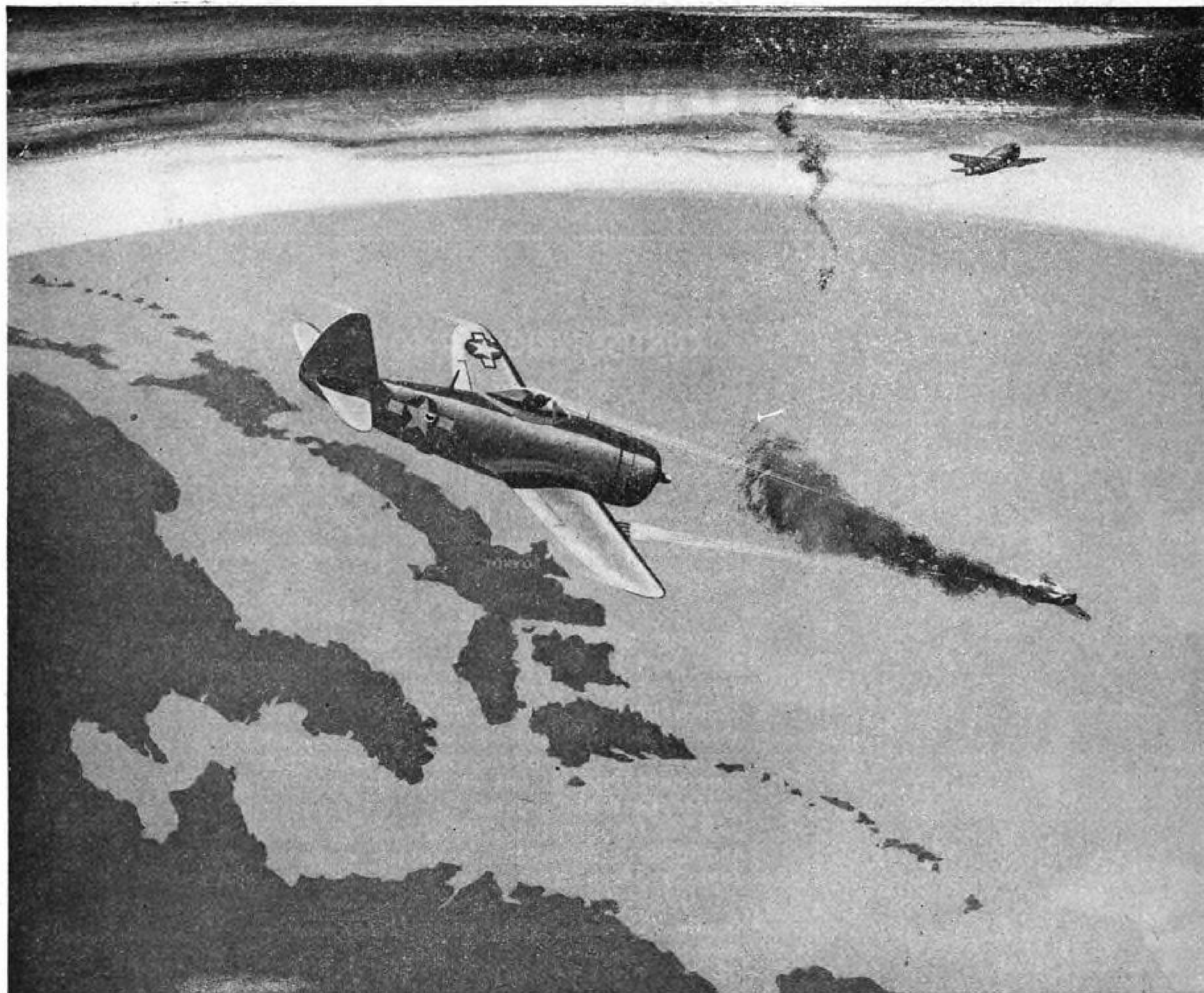
HOW GOODYEAR AIRCRAFT CORPORATION SERVES THE AIRCRAFT INDUSTRY

1. By constructing sub-assemblies to manufacturers' specifications.
2. By designing parts for all types of airplanes.
3. By re-engineering parts for quantity production.
4. By building complete airplanes and airships.
5. By extending the facilities of Goodyear Research to aid the solution of any design or engineering problem.



GOODYEAR AIRCRAFT CORPORATION
Pioneers in Engineering Airmetal

Airmetal—T. M. G. A. C.



ZERO HOUR

While Republic Thunderbolts were busy hammering the Nazis in Italy, escorting bombers to Berlin, tearing up railroads and bridges in Normandy and clearing paths for the liberation of France and our advance into Germany, they were also moving in on Tokyo.

Since August, 1943, Thunderbolts have been steadily filtering into the ever-narrowing, island-by-island ring of strangulation which is closing about the Jap empire. It has been just a year since an AAF colonel helped introduce the Thunderbolt to the Zero by downing six Japs in a mission over Wewak.

Today, Thunderbolt pilots are fighting, dive-bombing and strafing the Jap from New Guinea all the way to Saipan and Guam. They are also taking his measure from bases in India and Burma. And in China

itself they are guarding from attack the advance bases from which the giant B-29's "commute" to the industrial centers of Japan.

Where the Thunderbolt is going to show up next, only time and your daily newspaper will tell. But at the *zero hour*, when the ultimate and conclusive strike topples the towers of Tokyo in smoke and flame, you can depend on it: *Thunderbolt pilots expect to be there!*

Republic Aviation Corporation, Farmingdale, Long Island, New York, and Evansville, Indiana.

Republic *firsts* in war point to *firsts* in peace



REPUBLIC AVIATION

CORPORATION

Specialists in High-speed, High-altitude Aircraft

THE AIR WAR

COMMENTARY

U. S. Airpower Again Clears Way For Next Big Pacific Operation

Major landing action expected to follow large-scale attacks apparently designed to isolate Philippines.

During the second week of October Vice-Admiral Marc Mitscher's reorganized carrier task force, comprising several powerful carrier task groups, defiantly moved straight into Japan's inner citadel, the so-called Empire area. On the first day terrific blows were struck at shipping, key air bases and other shore installations in the Ryuku Retto Chain (sometimes called the Nansei or Luchu Islands) less than 200 miles south of Kyushu, southernmost island of the Jap "Mainland." Other elements of Admiral Halsey's 3rd fleet pounded Luzon on the second and fourth days. On the third and fourth days Mitscher lashed out against powerful Formosa (Taiwan) with the promised carrier force of 1,000 planes, and again with some 450 planes on the fifth and following days. The two-pronged attack was a tremendous challenge to the reluctant Japanese fleet, which was further encouraged to come out by an apparent "fleeing" from the Philippine waters by Admiral Halsey's fleet.

► **Coordinated Attacks by "Superforts"**—As if this was not enough, on the sixth day the largest armada of B-29's yet dispatched from their bases in the Chengtu area, western China, dropped a devastating load of high explosives and incendiaries on Formosa, with a high proportion of bombs landing squarely on the primary target, the great air base of Okayama. Two days later another successful attack by the *Superfortresses* was carried out. This represents the first employment of B-29's in two successive attacks, and also as part of a coordinated plan of the joint chiefs of staff in which other forces were involved. Hitherto the super-bombers have been used in strategic attacks against high priority industrial targets, mostly steel production.

► **Isolating Battlefield**—The main

purpose of these air assaults appears to be the isolation of the Philippines from the powerful string of enemy island bases to the north, notably Formosa itself and the Sakishima, Okinawa and Amami groups in the Ryukus. This is an application on the grandest scale of the fundamental principle of tactical airpower successfully worked out in New Guinea, North Africa, and in western France.

In all of these campaigns, as well as in "operation strangle" which broke the Cassino stalemate and led to the rapid conquest of Rome and beyond, the main idea is to use airpower to cut the supply lines and communications. Another aspect of this fruitful principle is the leapfrogging and by-passing technique used by Generals MacArthur and Kenney in New Guinea and by the Admiral Spruance-General Hale Naval Task Force—AAF team in the rapid advance through the Gilberts, Marshalls and Carolines. This leaves scores of thousands of enemy troops to wither on the vine, hopelessly cut off from relief, rescue or escape.

► **Invasion of Philippines**—An ever mounting series of such attacks may be expected, effectually cutting off reinforcements of fighter planes, troops and supplies until the time is ripe for amphibious landings, with heavy air cooperation, on the Philippines. With the powerful Palau Islands in our hands to protect the right flank, MacArthur's forces will be in a favorable position to carry out the great project which has been his burning desire since March, 1942.

Where will he land? No doubt the Japs would like to know, but in the light of the terrific pounding given Mindanao during the past few weeks and the relatively light opposition found at the last it is not impossible that another of his now famous leap-frog operations may

not be in the making. Heavy air assaults against some of the large islands north of Mindanao may provide a clue when the time draws near, or may on the other hand turn out to be a screen for surprise landings elsewhere.

► **1,000-Plane Carrier Raid**—Addition of literally dozens of aircraft carriers to our Naval task forces has enabled them to roam with impunity in the western Pacific and the Philippine Sea, well within striking distance of land-based aircraft on Japan's most powerful bastions. Thus smashing blows are being struck at the enemy by carrier-based aircraft, which at the same time are able to protect the various units of the task force from damage. This has been strikingly illustrated again and again in the conquest of the Marianas and the heavy blows against the Bonin Islands, Mindanao, Luzon, the Ryukus and Formosa.

A raid of 1,000 planes consisting of hard-hitting *Helldiver* and *Avenger* dive and torpedo bombers and *Hellcat* fighters, leaving the souped-up *Wildcats* (FM-2) for defense, packs a terrific wallop. The fire-power has been increased by addition of 20-mm. cannon in addition to the standard .50-calibre machine guns, plus the devastating high velocity rockets.

The recent attacks on Formosa, heavily fortified southernmost outpost of the Nipponese empire and staging area par excellence for the Philippines, are only a start.

NAVIGATOR

RCAF Cutback

Recruiting for the Royal Canadian Air Force has ceased and about 4,200 air crew trainees are being released.

RCAF plans to make operations in the Pacific on a voluntary basis and will discharge its men on a first-in-first-out basis. In the Pacific, Canadian flyers will operate in all-Canadian squadrons. In the European theater they have operated as Canadian squadrons and as a quarter of the Royal Air Force total personnel.

► **114,253 Trained**—A total of 114,253 air crew members have graduated from the British Commonwealth Air Training Plan since its start in April, 1940.

The 4,200 air crew men being released are subject to Canadian Army call-up or may enlist in the Army or Navy with full seniority if they have been in the RCAF less than two years.

★ ★

Kinsman

A black and white photograph of a B-24 Liberator bomber in flight, viewed from the side. The aircraft is a four-engine, heavy bomber with a high-wing configuration. It is flying over a dark, textured landscape, possibly water or a field. The tail fin features the number '293837' and a circular insignia with a star. The aircraft is angled slightly upwards and to the right.

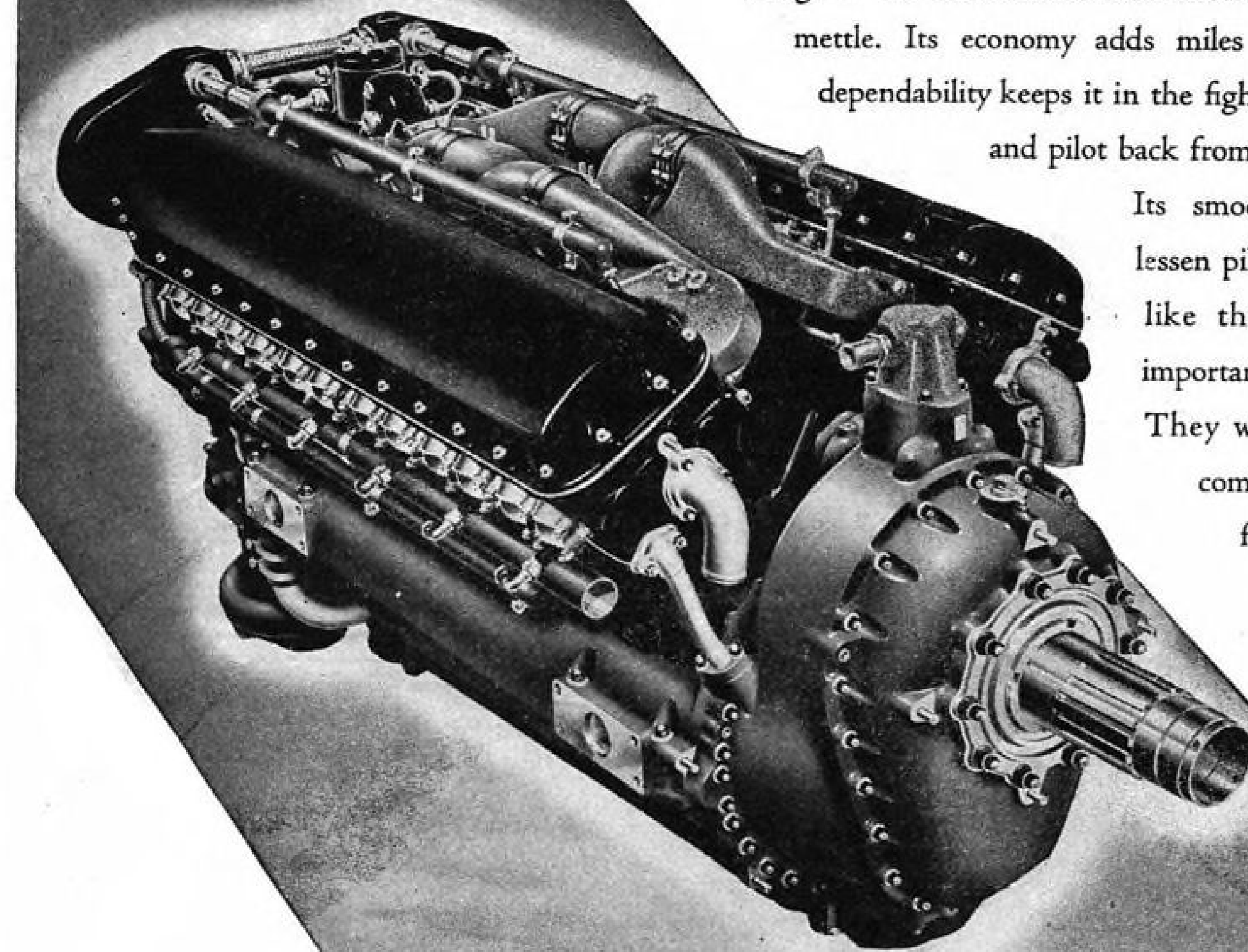
Boeing B-29 Superfortress in Flight

BOEING

TO FIGHT THERE AND BACK

In this war pilots often fight far over enemy territory, hundreds of miles from their base. So fighter planes need range as well as sting. ★ In such sorties the Allison engine has proved its mettle. Its economy adds miles to every tankful. Its dependability keeps it in the fight, helps get both plane and pilot back from hazardous encounters.

Its smoothness and response lessen pilot fatigue. ★ Qualities like these will continue in importance after the war's end. They will contribute to the comfort and safety of your flights in the days of great air transport to come.



POWERED BY ALLISON

P-38—Lightning
P-39—Airacobra
P-40—Warhawk
A-36 and P-51—Mustang
P-63—Kingcobra

More than 60,000 Allison engines have been built for the above planes of the U. S. Army Air Forces.

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PRODUCTION

Plane Speed Near That of Sound Presents New Design Problems

Revamped equipment and new conception of aerodynamics developing as result of war-stimulated advances, such as jet propulsion and turbine-type power plants.

Tantalizing possibilities of aircraft exceeding the speed of sound, which have been emphasized by the high speed attained by present-day military aircraft, are occupying increasing attention of aeronautical engineers.

Jet propulsion advancements and the progress made in turbine-type power plants point to still greater speeds than those now known and call for new designs, new equipment and new conceptions of aerodynamics. Spurred by military demands, aeronautical scientists already are solving problems that might have taken years without the stimulus of war.

► **Dive Flaps Developed**—An indication of the trend came from Lockheed Aircraft scientists working in conjunction with the AAF who reported recently (AVIATION

NEWS, Oct. 9) that they had developed dive flaps which solved the compressibility problem so far as the P-38 *Lightning* fighter is concerned. The problem of compressibility is the barrier to airplanes reaching the speed of sound.

Many phases and factors of aeronautical science are involved in the over-all problem and among the new developments is one reported by Kollsman Instrument Division of Square D Co., which reports an instrument to indicate the relationship of the airplane's true airspeed to the speed of sound.

► **Mach Number** — This factor, called the Mach Number, is an important one in determining the aerodynamic qualities of new or advanced designs of high-speed aircraft.

This new instrument has sig-

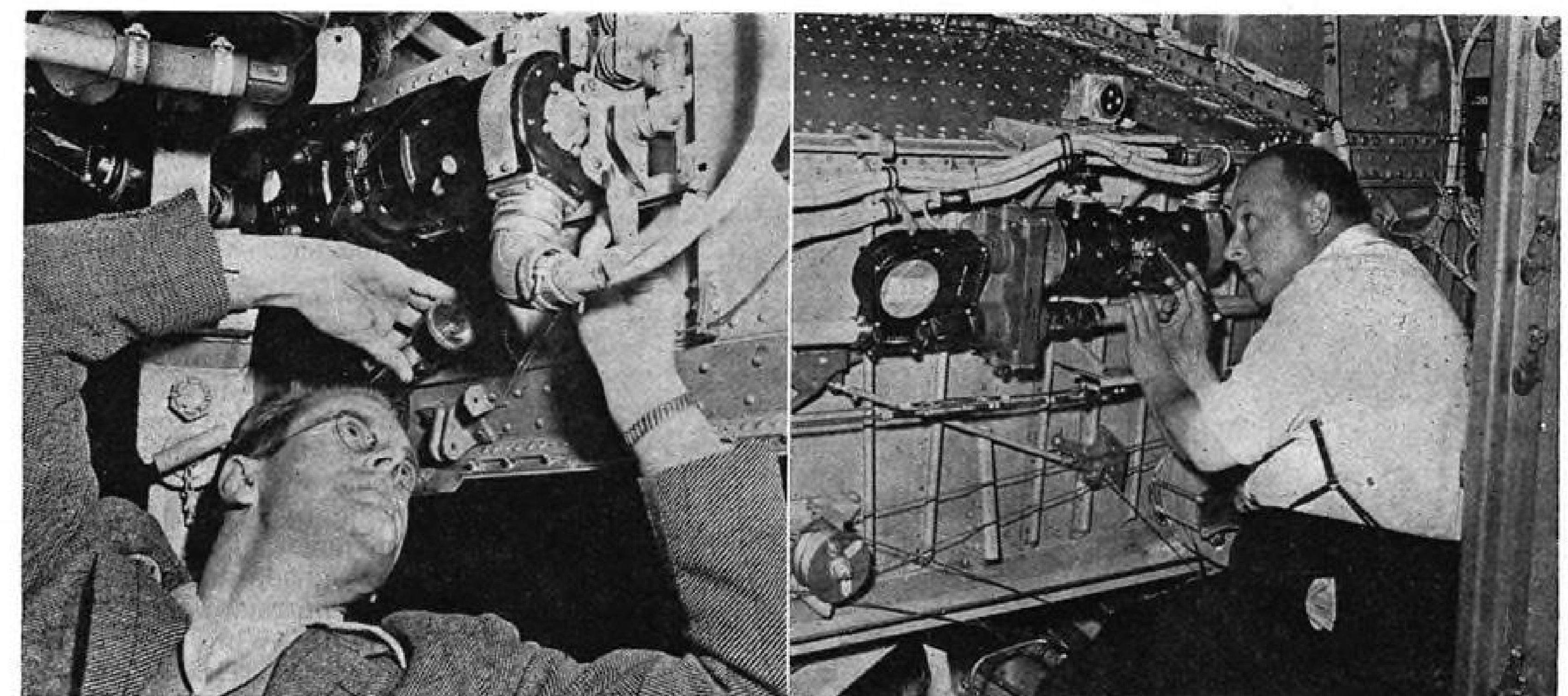
nificant possibilities, since the maximum airspeed each airplane will attain before it reaches the speed of sound varies with the design. It should not be overlooked that certain portions of the plane reach this speed well ahead of others.

Importance to the engineer of determining at what speed this takes place is obvious, both as a basis for design changes and because at this speed new and dangerous aerodynamic characteristics are introduced into operation of the aircraft.

► **Varies With Altitude**—Kollsman engineers point out that, as the speed of sound varies with altitude, it was necessary to make involved calculations to determine the Mach Number. Their new Machmeter gives a continuous indication of this factor.

It was explained that in operation it is a combination airspeed and altimeter with the two mechanisms interacting to give indication of the relationship of the true air speed of the aircraft to the speed of sound. The range of the instrument is .3 to 1, the Mach Number 1 being the speed of sound.

► **Named for Austrian Scientist**—The Mach Number gets its name from an Austrian scientist of the 1800's, Mach, who in his work on projectiles is credited with having first advanced the theory of the relationship of the speed of sound



B-29'S ELECTRIC BOMB BAY AND WING FLAP ACTUATORS:

The 28-pound 11-ounce bomb bay door actuator motor shown on the left opens the bomb bay doors of Boeing's Superfortress. Powered by two 24-volt motors, the actuators are designed with integral gear reduction to operate at not less than 525 rpm., developing maximum torque of 750 inch pounds. Right: a

31-pound, four-ounce electric actuator motor which operates the speed-arresting wing flaps of the B-29 in about 29 seconds. Powered by a 24-volt DC motor, the actuators develop a maximum torque of 1,500 inch pounds at a speed of about 200 rpm. Both are built by Eclipse Pioneer Division of Bendix Aviation.

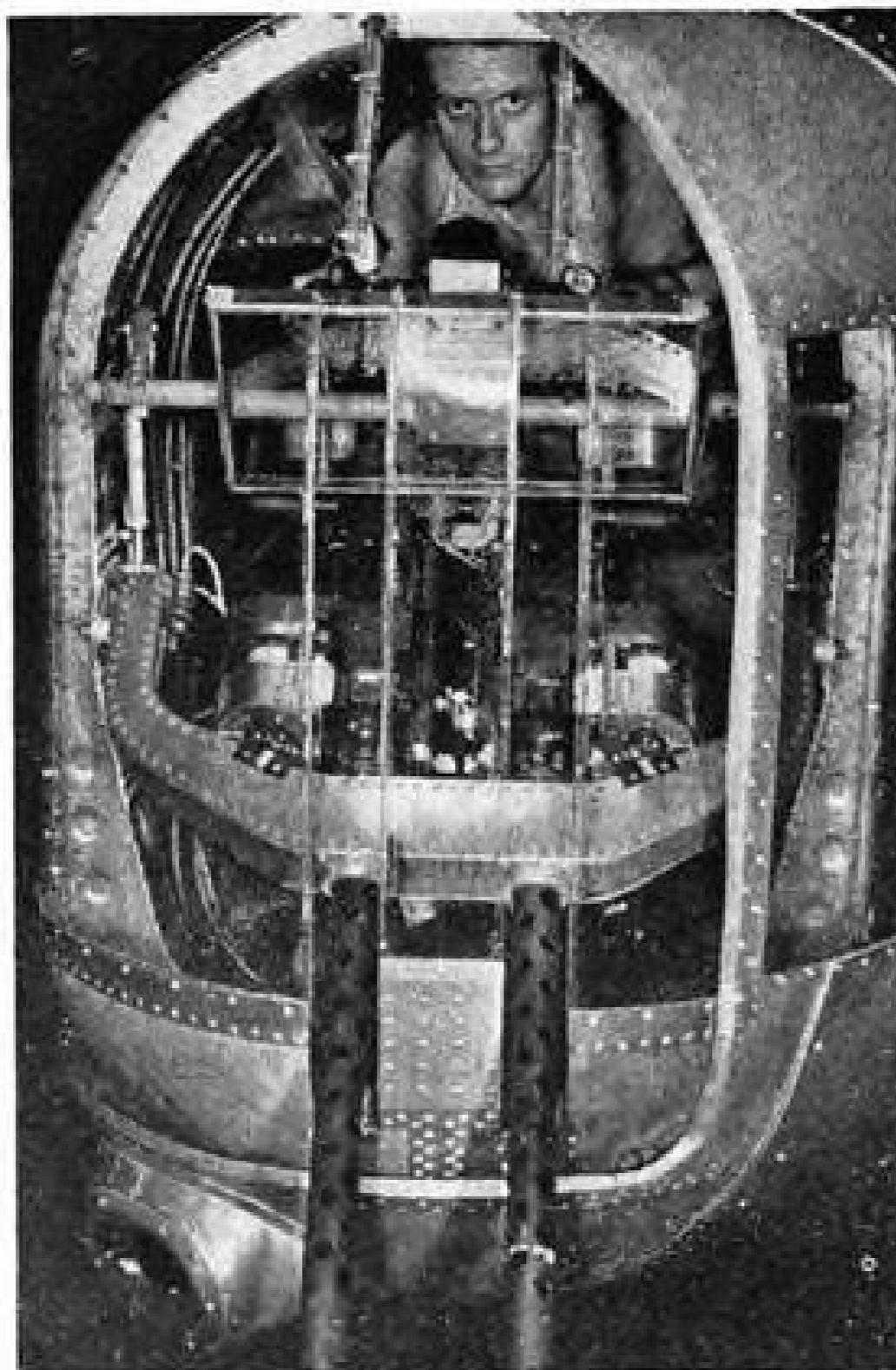
to the aerodynamic qualities of the air.

While not directly related, Kollsman also reports development of a practical true air speed indicator, an instrument which combines an air speed indicator, altimeter and outside air thermometer for a continuous indication of true air speed, a factor necessary to determine relationship to the speed of sound.

The new indicator is expected to have peacetime application although it was developed in conjunction with the Army Air Forces for the purpose of increasing accuracy of bombing and navigation by the elimination of the necessity and hazard of computing true air speed under combat conditions.

► **Automatic Corrections**—All necessary corrections for altitude, outside air temperature and compressibility are automatically applied by the mechanism. Kollsman engineers say the instrument is relatively easy to install, requiring only the normal air speed pilot and static connection and installation of a thermometer bulb for the outside air temperature measurement.

The true air speed indicator will be available as an item of standard equipment for pilots, engineers and navigators on long-range transports when commercial production is resumed on a large scale. In addition, consider-



NEW GUN INSTALLATION:

A saving of more than 200 pounds in the weight of a B-24 Liberator bomber is reported made by the twin hand-held tail gun installation shown above at Consolidated Vultee's Tucson division. The installation increases the cone of fire from the tail position substantially over the former power-driven turret and gives the plane greater bomb carrying capacity.

able industry interest is reported for its use as a cabin indicator for passengers.

Cutback Warnings

Labor and management to get advance information from government on schedule changes

A move which should ease management's position in dealing with workers involved in production cutbacks is being taken by the government under which labor as well as management will be given advance information on schedule revisions.

An order issued by OWM Director Byrnes designates the WPB Production Executive Committee as a clearing house for cutback information. Under the order the procurement agencies—War and Navy Departments and the Maritime Commission—are to supply the committee with full information concerning coming cutbacks which the committee will summarize and give to all government agencies concerned.

► **Data Given Employees**—The procurement agencies have been directed to make certain that all information given to a company about coming cutbacks is transmitted promptly to employees; WPB is to provide national management and labor organizations with summarized information as to the extent and regional location of coming cutbacks and the War Manpower Commission is to advise its field representatives of major cutbacks which will require special consideration in placement of released manpower.

Mosquito Production

Canadian plant to continue operations after V-E Day for use in Pacific theater.

Production of Mosquito aircraft in Canada will continue after the end of the European phase of the war in order to meet requirements for the Pacific conflict.

Output of the bomber-fighter is well under way, according to a report made by G. A. C. Bear, general manager of de Havilland Aircraft of Canada, to representatives of subcontractors.

► **50 Per Month**—While no production figures were released, it was announced in Ottawa recently by Minister C. D. Howe that about 50 Mosquito airplanes are coming off the line per month. Subcontractors make about 80 percent of the components, assemblies, bits and pieces, for the assembly of the plane at de Havilland.

A tour of the assembly line was



De Havilland Final Assembly Line: Final assembly bays at de Havilland Aircraft of Canada, Toronto, where Mosquito bomber-fighters are produced for Allied airmen on a moving assembly line. Wire screen cage over cockpit top protects lucite.



we call it *formula X*

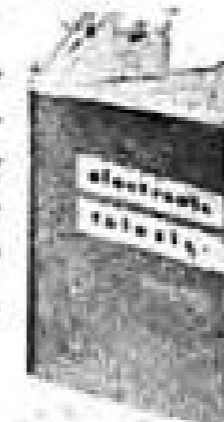
The development of Formula "X" is as important a contribution to the science of electronics as was the Eimac "gas-free" tube of a few years ago. Briefly, Formula "X" makes it possible to provide electron vacuum tubes which are free from grid emission... a phenomenon which limited the tube's performance by causing instability of operation, parasitic oscillations and premature filament burn-outs.

The removal of these limitations opens the way for vastly improving efficiency and dependability in electron vacuum tubes. Many business men contemplating the use of electronics and certainly all electronic engineers are vitally interested in learning of such developments as Formula "X"... interested too in knowing the source of such discoveries.

In producing Formula "X" Eimac Engineers have proved again that progress in vacuum tube development is achieved by doing the so-called "impossibles." It is through solving such problems that Eimac tubes have, in a few short years, become first choice of leading electronic engineers throughout the world... first in new electronic developments.

Eimac Engineering is devoted solely to the development and production of electron vacuum tubes. However, since the electron vacuum tube is the heart of all electronic devices it is advisable for users and prospective users of electronics to look first to the vacuum tubes required. A note outlining your problem will bring assistance without obligation.

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is the focusing of all branches of science upon the development and improvement of electron vacuum tubes



PHYSICS... Especially designed electron microscope enables operator actually to view electron emission



OPTICS... Photomicrographic studies help achieve perfection in processing



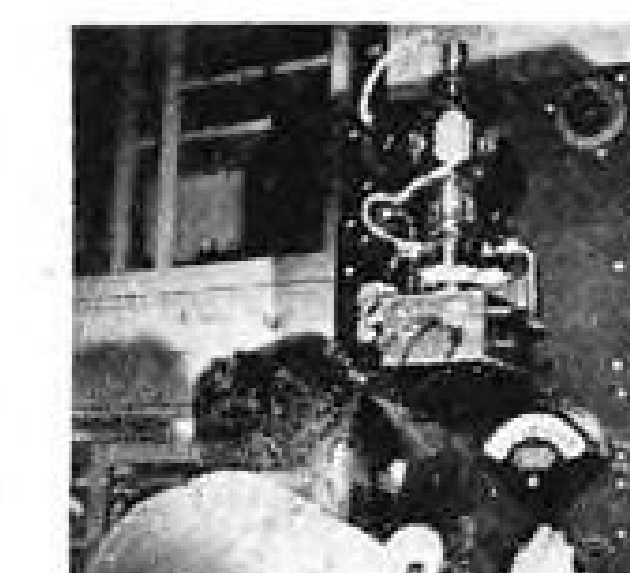
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THERMO-DYNAMICS... Vacuum furnaces heat materials to exceedingly high temperatures



ELECTRONICS... Determining facts about and recording data on vacuum tube capabilities



Photo by Douglas Aircraft Co.

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We love the challenge in it, the new ideas, the sense of achievement and unlimited possibilities as well as the thrill of flying itself. So the frequent prognostications of the "experts" about the "coming collapse in aviation" slap us square in the face.

Sure, less planes will be needed after American aviation has completed its colossal war job. But, there are a lot of people and a lot of dollars in aviation today which would never be

there except for the extreme demands of war. And a lot of us who are deep in war work today are eager to get back to our normal peacetime occupations of helping to supply better air

transport for the world's natural, peaceful needs.

The World, which has seen America's victories in the air, will have big jobs for American aviation to do.

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made by the nearly 400 subcontractors, press and radio representatives. W. A. Newman, Canadian aircraft controller and president of Federal Aircraft, Ltd., was among the speakers.

Superfortress Cost Reduced to \$600,000

Production line figure compared with outlay of \$3,392,396.90 for first B-29.

Current production models of Boeing's B-29 Superfortress are costing the government approximately \$600,000 each, compared with the \$3,392,396.90 cost of the first Superfortress, according to Brig. Gen. Kenneth E. Wolfe, Air Technical Service Command chief of engineering and procurement, who played an important role in development of the B-29. General Wolfe was in charge of production and, at the time of the initial B-29 raid, was commanding general of the 20th Bomber Command of the 20th Air Force.

► **Pre-Contract Outlay**—It is not always realized that into the cost of the first model of any warplane go years of engineering, experiments, tests and changes. Even before the original contract for the first B-29's was let, \$84,150 was spent in obtaining preliminary engineering information, which necessitated wind tunnel models, long and costly tests and mock-ups.

General Wolfe said the original contract was let for \$1,804,840, later reduced to \$1,674,880 when the government assumed certain flight risks. This sum did not include the government-furnished equipment, which cost approximately \$493,300. The inevitable changes necessary before production can start added to the cost. On the B-29, which had a minimum of changes, it cost \$95,241 for tests to alter the tail, \$72,500 for enlarging the bomb bay, and \$15,600 for new propeller tests. Incidental changes to perfect the model ran the total up another \$94,897.

► **Static Tests \$861,828** — Before the first Superfortress could be built on the production line, it was subjected to a final series of static tests in the aircraft laboratory of the ATSC at a cost of \$861,828. A complete airframe was put on the rack and tested for stress and strain until it was destroyed.

While changes as the result of tests are expensive, General Wolfe



NEW TIRE REMOVER:

Sgt. Walter M. Bakula, foreman in a welding shop of the Army Air Forces Service Command in Italy, developed this hydraulic tire remover which is now being produced in the field for AAF units. It whisks off 200-pound tires in a few minutes. Bakula has been recommended for the Legion of Merit for this and other inventions.

emphasized that they pay for themselves many times over, since they assure volume production of highest quality.

No. American Builds 30,000th Warplane

The 30,000th military plane to be built by North American Aviation, Inc., in five years has been turned over to the Army Air Forces. The plane bearing that number was a B-25 Mitchell medium bomber, produced at the Kansas City plant.

North American Aviation has built up its production record on five types of planes, including a heavy volume of trainers, B-25's, P-51 Mustang fighters and Consolidated Vultee B-24 Liberator heavies. It also has produced the equivalent of 6,535 planes in spares and components in the same period, from September 1, 1939.

► **Labor Problem** — Some 13,000 units have been produced at the Dallas, Tex., plant, despite a labor turnover rate that ran from 25 percent in 1941 to 82 percent this year, with recent cutbacks affecting virtually 50 percent of personnel.

Mobile Generators Used to Start Planes

Device developed by three mechanics attached to ATSC unit at Wichita.

A speedy self-propelled electric generator for use on all types of airplanes requiring external current to start engines has been originated by three civilian aircraft mechanics attached to the Midwestern Procurement District, Air Technical Service Command, at Wichita, Kan.

In order to save time and effort, a standard portable aircraft electric generator (24 volts from a 4-cycle engine) power plant has been mounted on the chassis of a 3-wheel gasoline scooter to provide the handy and practical mobile unit.

► **Tests Electrical Equipment**—The equipment also is used for testing radio and other electrical equipment.

The idea was originated and the plant built by Millard R. Terry, foreman of Army mechanics at the AAF Wichita installation; Merle S. Buck, assistant foreman, and Joe Finck, mechanic.

► **Time Saver**—The unit is particularly useful in cold or inclement weather and saves considerable time and effort, especially when a number of planes have to be serviced. The scooter lost none of its mobility and speed through the added weight and can service planes more rapidly than any previous style of mobile generator equipment. One man can operate the unit.

New Tumbler Line

Post-war plans of J. A. Tumbler Laboratories, Baltimore, manufacturers of automotive chemical specialties since 1926, include a line of aviation service and maintenance chemical products to be distributed through aviation accessories and equipment jobbers and automotive distributors branching out in this field.

In connection with this program, W. F. Hogan has been named general sales manager. He formerly was with American Colloid Division, E. F. Drew & Co., where he was sales manager, automotive department and set up distribution of its chemical products devoted to maintenance and repair operations in aviation, automotive and diesel fuel fields.

FINANCIAL

Survey Shows Aircraft Dividends To Equal or Exceed '43 Payments

More liberality in disbursements expected this year as result of sharply increased earnings and dissipation of fears concerning contract terminations.

Aircraft dividends this year will at least equal and in many instances exceed disbursements made during 1943.

In the past, dividend payments to aircraft stockholders have been very niggardly. This condition has prevailed even where earnings have been at high levels. For instance, Douglas earned, per share, \$18.05 in 1940, \$30.29 in 1941, \$18.42 in 1942 and \$21.50 last year. Yet, in each of these years a uniform \$5.00 annual dividend was paid. The growing needs of the industry constantly demanded the retention of the bulk of earnings for expansion purposes. More recently, preparation for post-war adjustments has required the husbanding of resources. All this has militated against liberal dividend disbursements where substantial earnings in one form or another is of benefit to the stockholder as his equity assumes considerable more substance. (AVIATION NEWS, Sept. 18, 1944.)

Earnings Level High—With current earnings at sustained high levels, and in most instances running ahead of last year, there is good reason to expect that more liberality will be shown in disbursing dividends to stockholders during 1944. For one thing, the apprehensions first surrounding contract termination, plant and inventory dispositions, reconversion and related problems, have been largely dissipated. Additions can continue to various reserves and still permit increased dividend disbursements.

Dividend payment time has arrived for most of the aircraft builders. Soon, directors will meet and act on year-end declarations. The uncertainty which has always been part of the industry, has precluded any stable, consistent periodic dividend payments during the year. Instead, the general rule has been to make major payments to stockholders as the year draws to a close

and most of the results are established.

Dividend Survey — AVIATION NEWS has surveyed the 1943 year-end dividend action followed by the major aircraft companies. The dates dividend declarations were made, dates of record for stockholders to be entitled to such payments and actual payments are shown. This schedule can serve as a guide to the date of dividend disbursements this year. For comparative purposes the total 1943 payments along with 1944 disbursements thus far are presented.

It can be seen that dividend action by many of the builders may now be anticipated. Consolidated Vultee already has acted and will pay 50 cents a share Nov. 15 to stock of record Nov. 5. This makes a total of \$2.00 for this company and compares with \$1.50 a share paid in 1943 and \$1.00 per share for the comparable security in 1942.

Douglas Overdue — Douglas is somewhat overdue in acting. However, as this appears, it is likely the directors will have declared the usual \$5.00 dividend. Some speculation has been present as to a larger payment this year but the company's conservative policies

Significant Dividend Actions Major Aircraft Companies

	\$Paid or De- clared in 1944	Total Paid in 1943	1943 Year-end Action Date De- clared	Stock of Record	Date of Pay- ment	Amt. Paid
Aviation Corp.	\$0.10	\$0.20	11/18	11/30	12/20	\$0.10
Bell	1.00	1.00	11/1	11/17	12/2	1.00
Bendix	2.25	3.00	12/7	12/17	12/31	0.75
Boeing	1.00	2.00	10/20	11/1	11/17	1.00
Cons. Vultee (Common)	2.00	1.50	10/19	11/5	11/15	0.50
Curtiss-Wright (Common)	None	0.75	11/24	12/3	12/23	0.75
Douglas	None	5.00	9/25	11/8	11/22	5.00
Fairchild	None	1.50	12/7	12/16	12/23	0.50
Grumman	1.50	1.50	12/1	12/9	12/21	0.50
Lockheed	1.50	2.00	12/8	12/18	12/23	0.50
Martin	1.50	3.00	11/19	12/2	12/13	1.50
North American	None	1.00	12/3	12/13	12/23	1.00
Republic	0.25	0.25	2/18	3/1	3/10	0.25
Sperry	1.00	1.50	11/23	12/3	12/17	0.75
United	1.50	3.00	11/12	12/1	12/15	1.50

*Paid or declared up to October 10, 1944.
*Plus stock dividend of share for each ten held.

will probably retain the indicated rate.

A few companies have maintained regular quarterly or semi-annual dividend payments and hence no unusual year-end action may be anticipated. For example, Lockheed has developed the habit of paying 50 cents a share quarterly for almost four years now. The company will no doubt declare the usual 50 cent disbursement in December with an extra subject to conjecture. Bendix also has been consistent in acting quarterly. Recent payments have been 75 cents quarterly. There is some hope the company may restore the \$3.75 annual rate of 1942 and 1943. Thus far in 1944, a total of \$2.25 per share has been paid.

It is likely Sperry Corp. will top its 1943 rate. A semi-annual payment of \$1.00 per share already has been made this year. Another \$1.00 payment in December would place the company on a \$2.00 annual basis—the same as prevailed in 1939, 1940 and 1941. Sperry has one of the oldest dividend records in the industry starting with 25 cents per share in 1934.

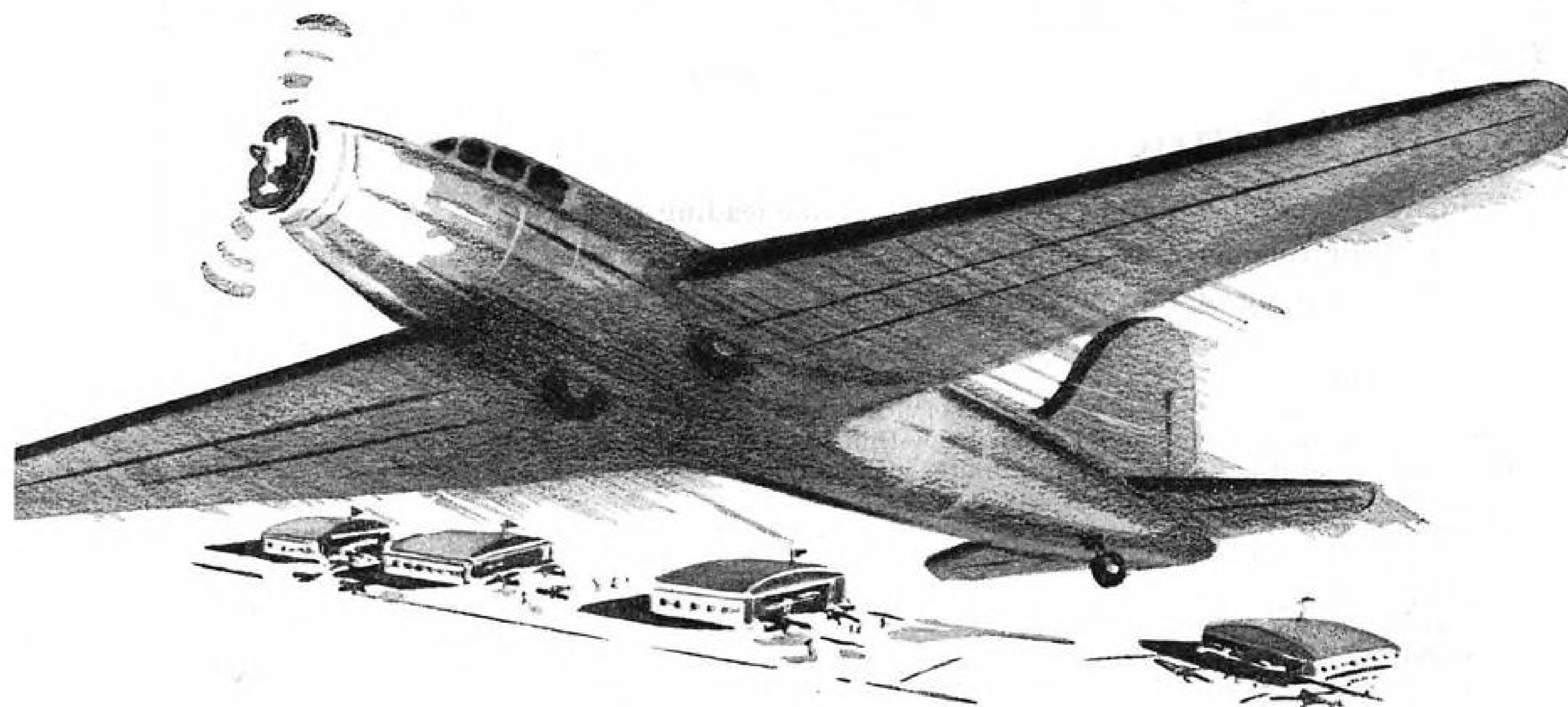
Preferred Stocks—The industry's three major aircraft preferreds are in no jeopardy of passing any dividends this year or over the immediate future. Consolidated Vultee continues to pay 5 percent or \$1.25 per share on its senior equity. Curtiss-Wright, with its Class A stock having many of the attributes of a preferred stock, is maintaining the \$2.00 annual rate on this issue. United Aircraft is in no danger of omitting the annual payment of \$4.50 per share on its preferred series.

With many of the aircraft builders yet to act, it nevertheless is a safe surmise that when aggregate dividend disbursements are totaled for 1944, it will be found that a new high mark in cash distributions to stockholders will have been made.

Financial Reports

Northwest Airlines, Inc., reports for year ended June 30, 1944, net profit of \$517,889 after taxes and reserves, including \$100,000 reserve for war and post-war contingencies. The statement showed profits 72 percent over previous year, or \$1.45 each on 356,380 common. Company's surplus was \$1,513,910. Operating revenues increased 44 percent over previous fiscal year as a result of "great increases in passenger business and fees from Army contracts."

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TRANSPORT

CAB Speeds Hearings on Important North Atlantic Route Case

Board moves quickly to be prepared to assume leading role in world air commerce as changing military situation promises early reopening of European trade channels.

By DANIEL S. WENTZ II

Moving rapidly to insure U. S. readiness to assume a position of leadership in world air commerce, the Civil Aeronautics Board last week opened what is probably its most important route hearing to date—the North Atlantic case. Changes in the military situation in Europe probably have heightened the sense of urgency which originally prompted the government to speedy action, and the case will be acted upon with all despatch.

Eleven airline applicants are contenders for the juicy North Atlantic plum. The routes they are asking vary widely, both as to terminals and as to intermediate stops. Most qualified observers, feel, however, that those applicants whose proposed routes most nearly conform to the Board's tentative pattern on international routes stand the best chances of certification in the case.

The proceeding thus far has little of the atmosphere of the conventional route hearing in which airline rivalries usually predominate.

Domestic carriers seeking to expand internationally are appearing before the Board in a new aspect. Experience as contract operators for the Air Transport Command has made many of them international air carriers in all respects except a CAB certificate. American Airlines, for example, is now flying a million miles monthly in international service. Its President, A. N. Kemp, has stated that his line could start trans-Atlantic commercial service on 24 hour notice if planes were provided. The company now is flying seven daily round trips over the route with Army-owned planes.

American Airlines was the first carrier to present its case. The C-54's it now flies for the ATC will be replaced with the DC-6

in a service which will bring New York within 11 hours and 56 minutes of London at a proposed fare of \$235.

Other plans, as revealed by company witnesses, envisaged 25,441 annual passengers within 10 years, using DC-4 equipment. With DC-6's, American estimates that it will carry 27,000 passengers of a total of 600,000 one-way North Atlantic air travelers within the ten year period. Both figures are based on an operating load factor of 62.5 percent. The line hopes to have DC-4's in operation early next year, with DC-6's following by nine months or a year later.

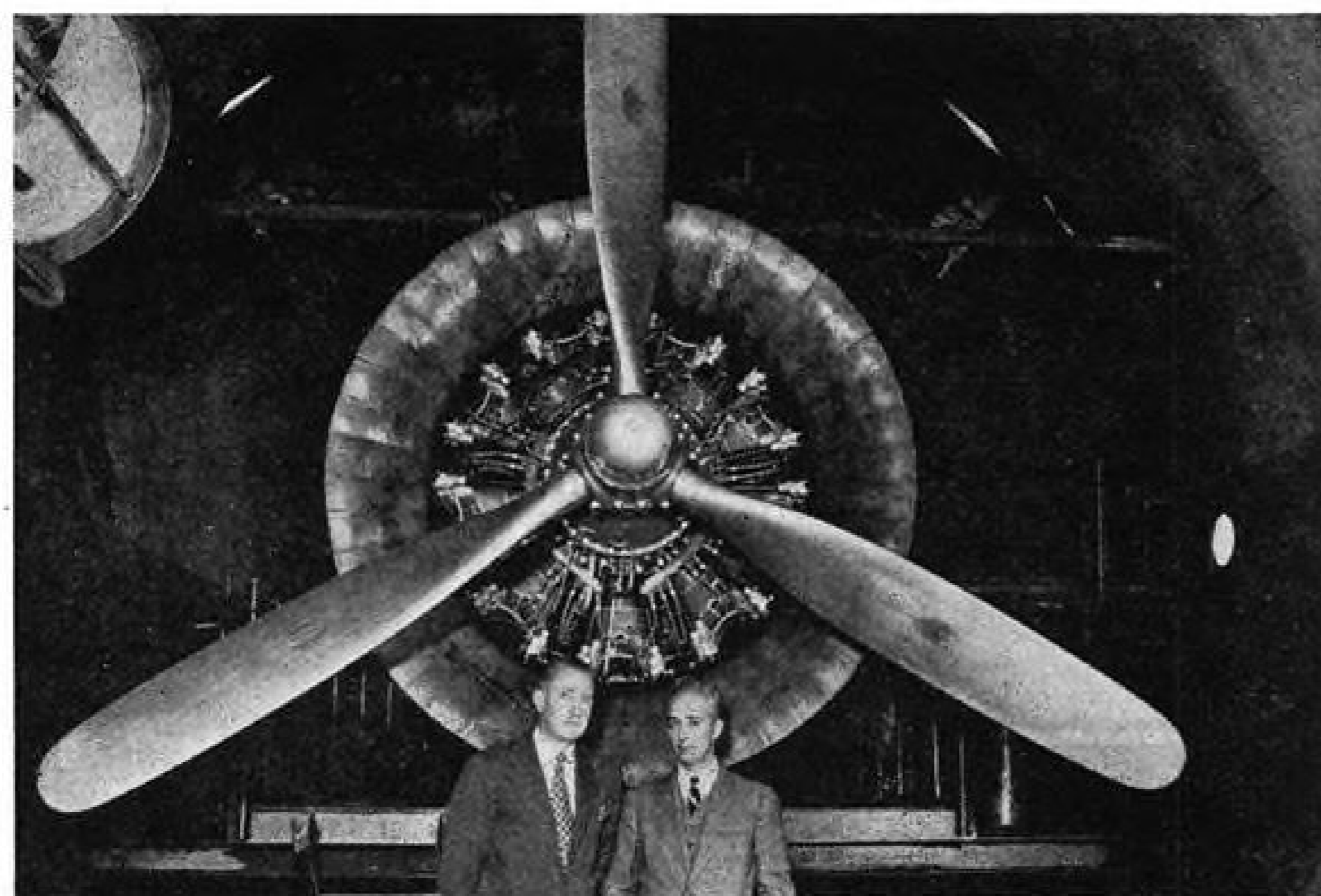
American's position as a bidder for international expansion is considered quite strong. If the routes it is asking (from New York, Bos-

ton, Chicago and Detroit to Paris and London) are granted, it will be in a position to use its vast domestic route network as a feeder system for international passengers. Should the acquisition of a controlling share in American Export Airlines be approved by the CAB, American will possess the foundation for an international route system which can readily be integrated into its U. S. operations.

As brought out in the course of question, American's plans to operate internationally through Export, and its route expansion will be done in the latter's name should the acquisition be approved.

Another strong contender in the North Atlantic is Pan American Airways, already possessing certificates over several of the routes in question, and seeking further expansion into an around-the-world carrier. Pan American's position in this case presents a dual aspect. It is anxious to protect its present choice position, and it also hopes to extend into more traffic producing areas.

The hearing opened before Examiners Thomas L. Wrenn and Ferdinand Moran with appearances in behalf of the New York and Boston Port Authorities, the City of Philadelphia, and the Baltimore Aviation Commission. Many observers felt that these seaboard



DC-6 POWER PLANT:

Picture shows R-2800-C Double Wasp engine and Hydromatic propeller, four of which will power each of the Douglas DC-6's already on order for post-war use by some of the airlines. Standing in front of the production engine shown in an East Hartford, Conn., test cell where air flow simulates flying conditions, are engineering managers Wright A. Parkins and Erle Martin of Pratt & Whitney Aircraft and Hamilton Standard Propellers, manufacturing divisions of United Aircraft Corp.

cities were making an attempt to preserve their commercial positions which was doomed to eventual failure because of the airplane's ability to ignore coastlines.

Stress Accessibility In Port Location

Civic bodies warned of important time factor and need for super-highways* to link cities with outlying airfields.

Recurrent warnings to civic bodies planning new airport facilities after the war are placing additional emphasis on accessibility as well as location.

While recognizing desirability of having airports near business centers, Civil Aeronautics Administration and others point out that the large landing areas required for present and projected aircraft make almost mandatory far-out locations. Fields so spotted, however, should include super-highway approaches as part of the construction job.

► **Port Survey Made**—In citing location as probably the most important consideration in airport planning, Ford, Bacon & Davis, aeronautical engineers, in a recent airport survey also stress hourly variation in traffic volume as a factor to be noted. At a typical airport, the survey shows, daily traffic peak is at 6 P.M. This is particularly true at eastern terminals which, it is stated, "gives a later hourly peak at Chicago, because of western flights, and so on through western intermediate stops."

Recommending that prime study be given to location, the survey recalls that time lost in getting to and from an airport wastes air travel's chief advantage, speed. "The scheduled flight from Minneapolis to Chicago is 2 hours and 10 minutes. But it takes 20 minutes to get to the airport in Minneapolis and 60 minutes from the Chicago Airport to the Loop. The local travel time, in this case, adds up to 61 per cent of the air flight time."

► **Runway Length**—Length of main runways suggested in the survey are 1,800 to 2,700 feet for communities up to 5,000 population; 2,500 to 3,500 feet for cities of 5,000 to 25,000; and 4,200 to 4,800 feet for larger cities which will be served by DC-3's.

"The primary runway," the survey reports, "is constructed to take care of all wind conditions from



CAL'S FINAL ATC FLIGHT:

Last flight under Air Transport Command's domestic contracts with the airlines was made last week by Continental Air Lines. Other domestic contracts have been canceled, but overocean contracts continue. Picture shows O. R. Haueter (right), vice-president in charge of operations, handing final ATC cargo flight manifest to Pilot William H. Clyde. Lookers-on were Lieut. W. L. Cahill of the ATC (left) and Jack Weiler, chief pilot for Continental.

still air up to the maximum allowable cross winds." Therefore secondary runways can be scaled down and it is seldom necessary, "despite the attractive symmetry," to construct more than two runways oriented to the angles of the wind.

American Gives Data On ATC Operations

In a report coinciding with the early stages of the CAB North Atlantic route hearing, American Airlines last week revealed details of its wartime operations for Air Transport Command. Flights to 33 countries on six continents built up a trans-ocean mileage of 11,634,309 from August, 1943, to July of this year, it disclosed.

The line rendered its first military service in December, 1941, when called on by the Army to furnish planes and personnel to transport material to South America. In April, 1942, it made its first Atlantic survey flight and later opened service to northern points. It began trans-Atlantic service in October, 1942.

► **Wins Air Medal**—An American crew won the Air Medal for the pioneering flight from New York direct to North Africa in April, 1943. American crews crossed the "Hump" from India to China 998 times in three and one-half

months, carrying 4,584,880 pounds of supplies.

Other wartime accomplishments claimed by American are: training for the Army of 578 pilots, 995 mechanics and 110 navigators; flight training in two-engine aircraft for 1,300 Navy pilots; modification of 99 B-24 Liberator bombers; engineering the installation of pontoons on the Douglas C-47; conducting tests over the North Atlantic of experimental propeller de-icing equipment.

New Flight Control Methods Developed

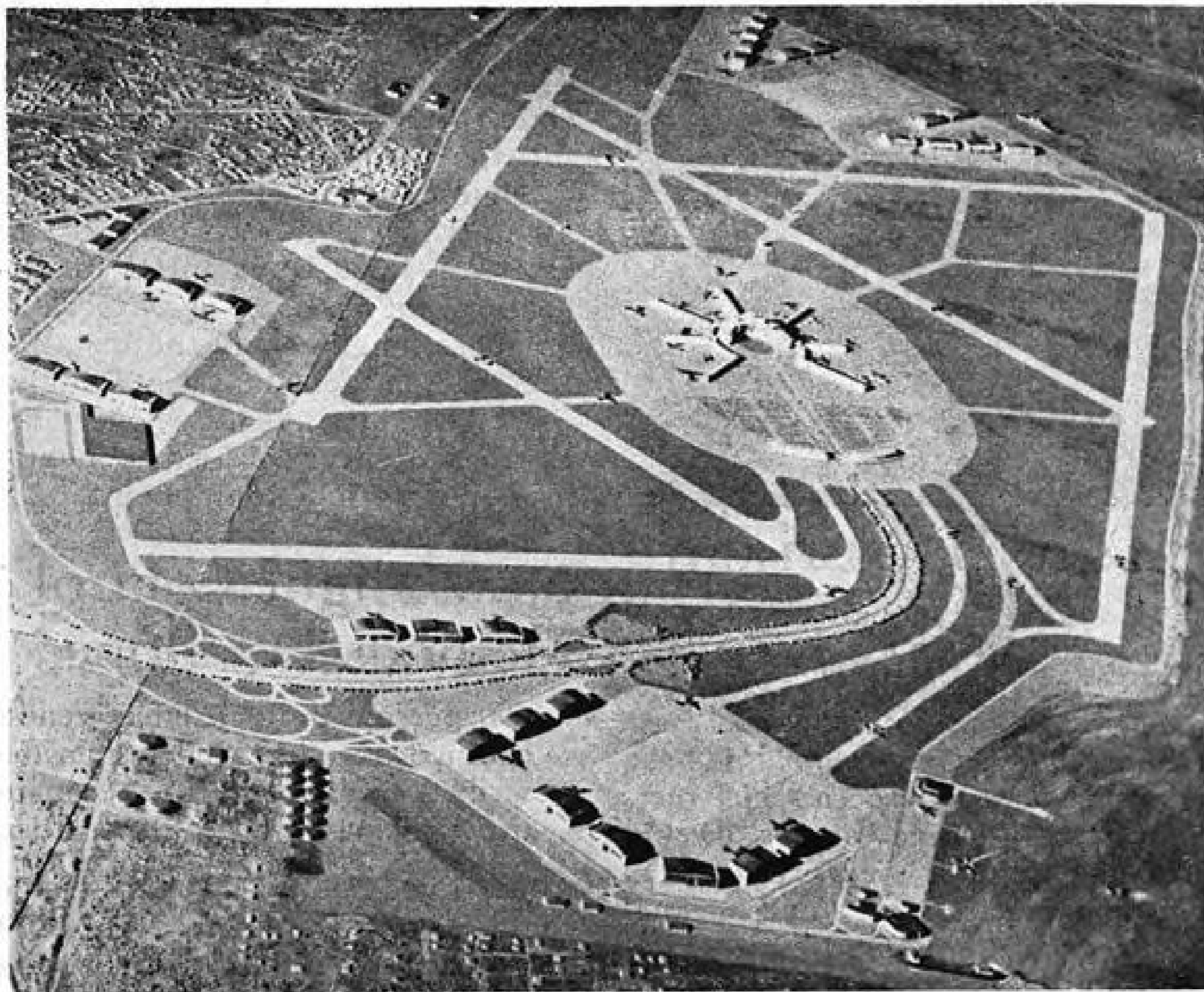
400 percent gain in effectiveness claimed for improved system described to Institute of Aeronautical Sciences by CAA specialist.

Improved methods of air traffic control to accomplish a four-fold increase in effectiveness almost immediately were outlined to the Institute of Aeronautical Sciences last week by Glen A. Gilbert, chief of CAA's air traffic control division. However, the new measures are only a stop-gap, he explained, until revolutionary equipment now being developed comes into use.

Two devices now being perfected and termed "musts" are a "collision warning indicator" in the aircraft, and a "scanning screen" in the airport traffic control tower. The first "should advise a pilot at all times of the relative separation between his aircraft and other aircraft within a predetermined radius." The tower screen would show the positions of all aircraft within a radius of 25 miles and make identification possible.

► **Other Instruments**—Two other instruments for installation within an aircraft are desirable, Mr. Gilbert stated. One would automatically report position to a ground recorder, making position broadcasts by pilots unnecessary. The other, a traffic control indicator, would give visual reproduction in the cockpit of orders from the control tower.

Four new techniques of traffic control revealed by Mr. Gilbert are: "approach control" whereby airways traffic control centers delegate authority to airport towers, raising the maximum number of instrument weather landings from five to 20 per hour; an automatic flight data posting system; very high frequency (VHF) radio communication facilities; and VHF navigation facilities.



IDLEWILD MOCKUP:

This new model of New York's new \$60,000,000 Idlewild airport shows the \$7,500,000 administration building, with three hangar groups nearby to house and repair airline planes. Lower left is a tank farm for gas and oil, and lower right, a seaplane base. White lines indicate "tangential" runways and taxi strips.

Washington Airport Revenues up Sharply

Return of equipment and increased schedules listed as important factors in increase.

Revenue at Washington National Airport was considerably higher during the fiscal year 1944 than 1943, and airport officials expect it to reach an even higher total during the current fiscal year.

A factor in the increase has been the return of equipment and consequent increase in airline schedules. This has been particularly noticeable in the revenue from "meals aloft," an air terminal service, which amounted to \$14,015 compared with \$6,676 the year before and now is running more than \$2,000 a month toward what may be a doubling of last year's figure.

► **Revenue Up 16 Percent**—Total revenue for fiscal 1944 was \$516,470. This compared with \$443,901 in fiscal 1943, \$403,253 in 1942, and \$16,028 in previous years—total revenue of \$1,379,654 since the airport was opened. Gain of 1944 over 1943 was \$72,569, or over 16 percent.

Air terminal services in the past fiscal year brought it to \$85,950,

compared with \$61,559 in 1943. These included restaurant, news stand, barber shop, etc.

The airport's turnstiles in 1944 brought in \$14,359 against \$11,908 in 1943, and that figure is expected to take a big jump upward when gasoline rationing is lifted.

► **Rentals Up Sharply**—Other increases in 1944 over 1943, shown by the revenue statement: rentals for terminal building, hangars and temporary buildings, \$120,116 against \$99,850; landing fees, \$30,675 against \$24,000; ramp service, \$17,042 against \$15,063; sale of utilities, \$75,458 against \$61,502.

Revenue from a taxicab concession was \$15,100 compared with \$11,605, while that from a bus concession dropped from \$819 to \$750. Revenue from Gulf Oil's gasoline concession remained at \$150,000 for the 12 months.

Roth to Testify

Almon E. Roth, chairman of the American Federation of Shipping, is to testify before the Worley subcommittee on overseas trade of the House Post-War Economic Policy Committee when it resumes hearings Oct. 24.

Roth, who is expected to stress need for steamship company operation of air-sea service after the

war, is one of a group of witnesses Chairman Eugene Worley has announced will appear in the subcommittee's studies of overseas trade.

Hughes Tool Control Of TWA Approved

Civil Aeronautics Board last week approved control of TWA by Hughes Tool Co., owner of 45.6 percent of TWA's outstanding stock. The stock interest represents an investment of \$5,505,000 by Hughes Tool in TWA.

► **Conditional**—The Board gave its approval subject to the following conditions imposed upon TWA:

That transactions between TWA and Hughes Tool or its affiliates are limited to items not exceeding \$200 each, and not aggregating over \$10,000 annually.

That TWA shall furnish an annual report on all such transactions.

The Board specifically stated that its decision will not restrict or affect existing agreements between TWA and Hughes Tool relating to the acquisition of Lockheed Constellations by the latter.



WORK ON FINAL PLANS:

Working on final plans for Idlewild airport are Clint Schofield, projects engineer in planning, who originated application of tangential runways to Idlewild, and Glenn Markt, director of airport and airways design, both of American Airlines.

UAL Contracts with Douglas For Delivery of 15 More DC-6's

Order brings number of four-engine aircraft purchased by airlines for post-war use to more than 150.

United Air Lines, with the signing of a contract for 15 additional Douglas DC-6's for post-war delivery, last week brought to more than 150 the number of four-engine units the airlines have ordered from Douglas Aircraft Co.

Amount of announced post-war orders, under contract with Douglas and Curtiss-Wright, now stands close to \$130,000,000. This includes 55 DC-4's, 68 DC-6's, 26 DC-7's, an unspecified number of DC-4's and Curtiss-Wright CW-20 Commandos for which Eastern Air Lines has assigned \$25,000,000 and National Airlines' \$5,000,000 order for 16 CW-20's. Eastern had not signed the Douglas contract late last week but was negotiating for eight DC-4's for certain delivery and eight more on a first refusal basis, depending on the route outlook.

► **Previous Orders**—United announced last month it would contract for 15 DC-6's in addition to the 15 DC-4's and 20 DC-6's it then ordered. Other contracts at that time came from American Airlines, for 25 DC-4's and 30 DC-6's; and Panagra, for three DC-6's. Subsequently PCA ordered 15 DC-4's and Pan American Airways announced it had made a deposit toward purchase of 26 DC-7's.

Price of the 240-mph 44-passenger DC-4 has been announced at approximately \$400,000, and that of the 300-mph 56-passenger DC-6 at between \$500,000 and \$600,000. United says, however,

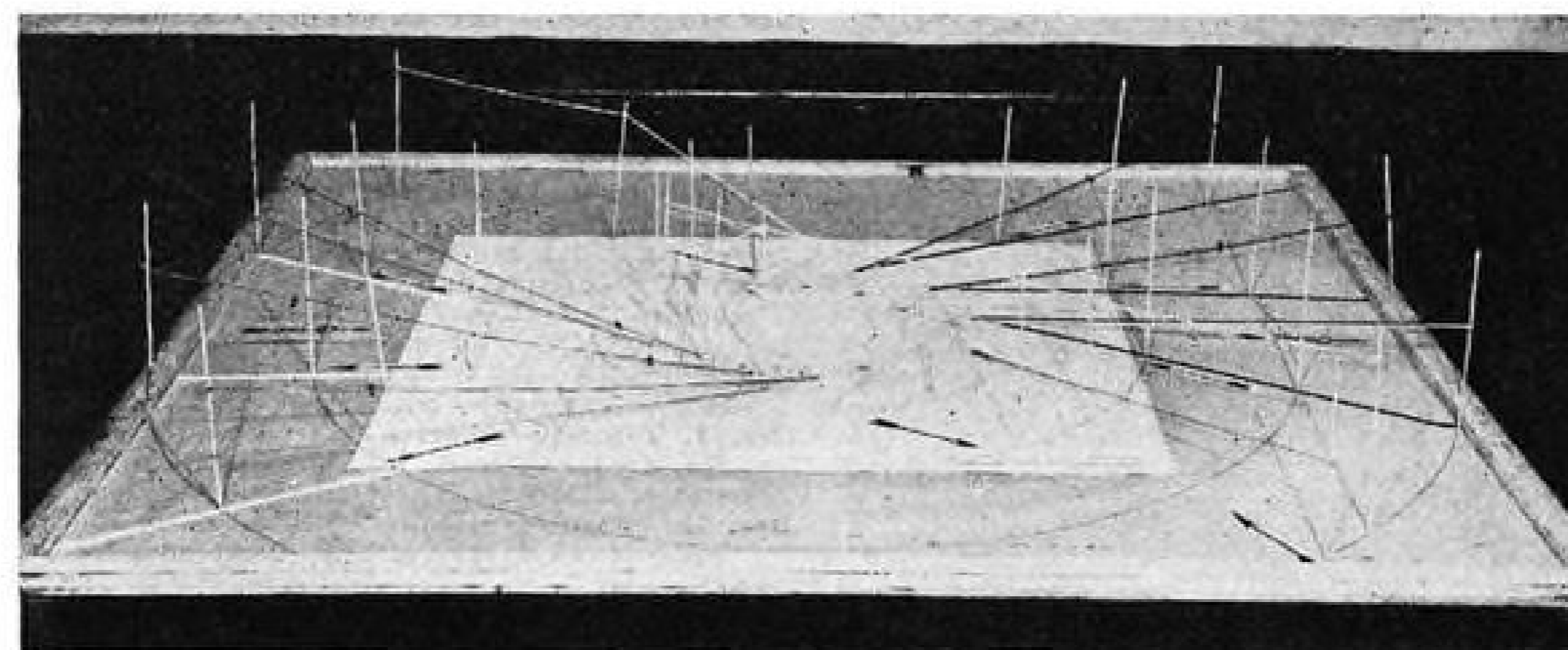
that its contract for the 50 four-engine planes will amount to approximately \$25,000,000. If this is true on the other contracts, the total may run well above \$130,000,000. Most of the contracts are understood to include purchase of many spare parts.

► **Pan American**—PAA has estimated the cost of the DC-7 at \$1,412,488. Soon after announcing it had made initial payment on 26 of these, Pan American told Civil Aeronautics Board it expected to spend \$25,973,392 on 50 new planes for use in Latin American service, including DC-7's, a modified Lockheed Constellation, and a "Type 12," variation of the Douglas twin-engine 24-seat Skybus.

More detailed announcements are yet to come from the manufacturers. Douglas, for instance, in announcing the first batch of \$50,000,000 worth of contracts, said there was thereby a \$100,000,000 backlog on its books. Much of this reportedly is from foreign purchasers.

Douglas also discloses that Australian National Airways has selected the C-47, a version of the DC-3, for its civil air freight route between Melbourne and Brisbane via Sydney. Additional reports are that Australian National is about to contract for four DC-4's and four DC-6's.

► **Delivery Time**—When the four-engine planes will be available is problematical, but United hopes it may have some of its DC-4's next



MODEL AIDS RUNWAY PLANNERS:

This three-dimensional model was used by airplane company engineers in working out tangential runway arrangement of Idlewild airport at New York.

summer. With them it expects to reduce coast-to-coast elapsed time to less than 11 hours with a stop en route. With the DC-6, to be delivered after the DC-4, the time is to be cut to 8½ hours, says W. A. Patterson, United's president. DC-3's will supplement their use.

The line also plans to use the four-engine planes between California and Honolulu if CAB approves its application for that route, and anticipates the DC-6 would cut flight time from 17½ to 10¾ hours.

Alaska Airlines Asks Routes to U. S.

Files for entrance at Seattle and trans-Canadian link to Chicago.

Alaska Airlines, Inc., asks Civil Aeronautics Board for new route authorizations to extend its system beyond the territory and into the United States at two points, giving a direct link between Alaska and Seattle and a trans-Canadian connection with Chicago. Alaska Airlines is the second of the CAB certificated native Alaskan carriers to ask such expansion.

The Seattle route would provide scheduled mail, passenger and express service from Anchorage via Juneau and Gustavus. Cordova and Yakutat are listed as alternate intermediate points.

Fairbanks and Anchorage are co-terminals of another route which would reach Chicago via Whitehorse, Watson Lake, Fort Nelson, Fort St. John, Edmonton and Regina, Canada; Fargo, N. D.; and Minneapolis.

► **Boston-Bermuda**—Northeast Airlines applied for a certificate for scheduled mail, passenger and express service between Boston, Mass., and Hamilton, Bermuda. Northeast has announced plans to operate the route with 4-engine equipment, at a tentative fare of \$39 for the 3 hour and 15 minute flight.

Conroy Leaves Industry

Vincent P. Conroy, former traffic vice-president of Transcontinental & Western Air, has joined Delta Manufacturing Co. of Milwaukee as assistant to the president.

Conroy was in the air transport industry 17 years, and with TWA from 1938 until he resigned last summer. His duties there have been taken over by E. O. Cocke, TWA general manager.

Delta is a manufacturer of light power tools for industrial work.

Industry Cold to Plan to Offer Revised CAR at World Air Parley

Time is too short, manufacturers and airlines feel, for proper study and discussion of proposed new regulations before Chicago conference opening Nov. 1.

By MERLIN MICKEL

A rush attempt to prepare a new set of civil air regulations to cover airworthiness, airways and airmen in time for submission to the international aviation conference at Chicago next month has met a chill response from the industry.

Manufacturers and airlines were being polled last week for reaction to the proposal, inspired in government aviation circles, but at press time results were negative.

The general feeling appeared to be that too little time remained before the world conference, which starts Nov. 1, to permit discussions within the industry of the proposed new regulations, drawn in detail by the Civil Aeronautics Administration at request of the interdepartmental committee on international aviation policy.

The draft of airworthiness requirements, particularly, was expected to require considerable study, since it embodies several changes from existing regulations.

Industry leaders felt, therefore, that a revision should not be placed before an international conference before it had been passed on by the industry itself.

The reaction was that despite whatever faults there may be in the present civil air regulations, they represent the best basis for discussion on an international scale as a result of the coordinated thinking of the government, the manufacturing industry, the airlines, and the pilots. Hence these, rather than a proposed revision, were generally believed to be the ones with which this country's representatives should participate at technical discussions in a world conference.

The suggestion has been made to CAA, and probably will be made to the State Department, that any discussion of international airworthiness requirements should deal mainly with attainment of uniformity in the major aspects of civil air requirements of the various nations, rather than any effort

to obtain international understanding on a complete new set of regulations.

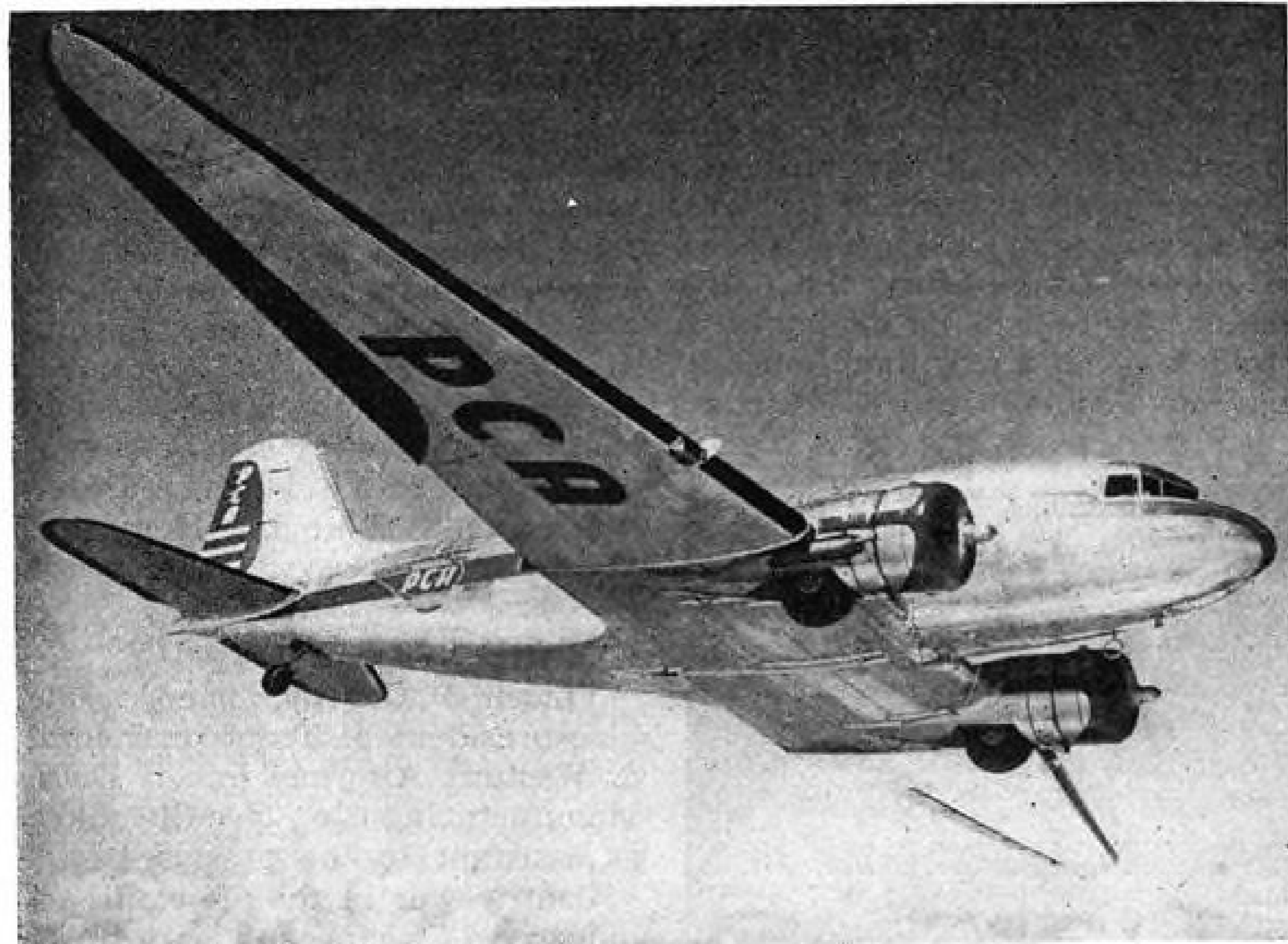
The Airplane Technical Committee of the Aeronautical Chamber of Commerce, at a recent West Coast meeting, declared that international uniformity in airworthiness requirements is desirable, but can be evolved only over a long period of time. The Committee recommended formation of a permanent International Technical Group to foster such uniformity.

The group would have as its primary function the making and publication of comparative analyses of airworthiness requirements of participating nations, the Committee believing that international agreement can be realized only when all nations design their own airplanes under the same airworthiness standards.

This nation now has reciprocal agreements with other countries, among them Great Britain, Eire, New Zealand, South Africa and South American countries. Under these agreements, however, there are deviations to airworthiness standards. The industry, particularly the aircraft manufacturing industry, seems to feel that existence of these deviations will automatically focus attention on those items which should be first considered as subjects for international agreement.

CAB SCHEDULE

- Oct. 25. Briefs due in the Washington-Canada case (Docket 609 et al.).
- Oct. 26. Date for exchange of exhibits in the New England feeder case (Docket 399 et al.). Postponed from Oct. 16.
- Nov. 1. Hearing in the West Coast Case (Docket 250 et al.) before Assistant Chief Examiner Francis W. Brown and Examiner F. Merritt Ruhlen in the Civic Auditorium, San Francisco, Calif. Postponed from Oct. 16.
- Nov. 13. Deadline for rebuttal exhibits in the New England feeder proceeding (Docket 399 et al.).
- Nov. 15. Rebuttal exhibits due in Florida cases. (Docket 489 et al.). Postponed from Nov. 1.
- Nov. 15. Exhibits due in applications of Ellis Air Transport and Ketchikan Air Service for additional service in southeastern Alaska. (Docket 876 et al.).
- Nov. 20. Hearing at Ketchikan, Alaska, on application of Ellis Air Transport and Ketchikan Air Service for additional service in southeastern Alaska. (Docket 876 et al.). Postponed from Sept. 25.
- Nov. 27. Hearing date for the Florida case before Examiner William F. Cusi. (Docket 489 et al.).
- Dec. 4. Preliminary briefs due in Latin American proceeding. (Docket 525 et al.).
- Dec. 4. Tentative hearing date for applicants for feeder routes in the New England states. (Docket 399 et al.).
- Dec. 10. Exhibits due in South Atlantic route case. (Docket 1171 et al.). Postponed from Oct. 16.
- Dec. 13. Tentative hearing date, North Pacific routes.
- Dec. 23 Exhibits due in the Pacific proceeding.
- Jan. 10, 1945. Hearing date for South Atlantic case. Postponed from Nov. 1. (Docket 1171 et al.).
- Jan. 10, 1945. Tentative hearing date, Central Pacific routes.
- Feb. 1, 1945. Tentative hearing date, Australian routes.



PCA AIRLINER IN NEW DRESS:

One of Pennsylvania-Central Airlines' planes with the new insigné, "PCA—The Capital Airline" on the fuselage. Wing and rudder letters also have been redesigned. PCA dropped the longer name in favor of initials Oct. 1.

Airlines Study FCC Radio Hearings For Effect On Flight Controls

Company specialists see move to solve radio frequency spectrum problems as of vital importance in future development of aviation—domestic, international and private.

Airline communication specialists are watching with interest Federal Communications Commission hearings on radio frequency spectrum problems which will affect development of aviation—domestic, international, and private—for years to come.

Problem is one of control. Radio gives the only positive means of ground control that can be exercised over an aircraft in flight. Only ground communications centers have the unlimited resources necessary for gathering all types of information vital to a pilot aloft, but this information must be relayed to the plane to be useful.

► **Channels Crowded** — Hitherto, aeronautical radio channels have been mainly in the medium high frequencies. The expansion of commercial aviation has seriously crowded the channels available for such services to the danger point. The move to very high frequencies which will be made as soon as war demands subside and permit equipment release is only a part of the answer to the problem.

The Interdepartment Radio Advisory Committee representing 12 government departments has placed before the FCC a scheme of allocating frequencies for radio use. Recognizing the vital importance of radio in aircraft operations, the IRAB has given second priority to radio channels for aeronautical purposes (first priority goes to navigational aids necessary for the preservation of life and property).

Space on the frequency spectrum is limited at present. The higher ranges—ultra high and super high frequency—are still in the experimental stage, and will probably be of little practical utility until considerable experimentation and equipment development is accomplished.

Meanwhile, the following developments seem to be reasonably assured as far as the future of aviation radio is concerned:

► All domestic airline communication will be on very high frequencies soon after the war.

► Teletype circuits for airline point-to-point communications will be-

come increasingly important.

► As airline radio moves from HF to VHF, the former will be devoted almost entirely to intercontinental and overocean airline operations. For these purposes, a relatively low frequency is required to cover the distances involved.

► Airline communications probably will not be conducted on a competitive basis. Reason for this is that competition would require an additional number of channels.

► World-wide requirements for aeronautical communications will require a great part of the available frequency spectrum.

► International aircraft will be able to use frequency bands allocated to maritime stations—both ship and shore—for overocean operations.

► The increase in private flying expected after the war ultimately will require two-way radio in private planes, probably of a simple type. Frequency allocations for private flyers are being considered with other aeronautical requirements. This use of radio by private flyers will be required to overcome hazards of increased traffic in the air.

► All types of radio instruments developed during the war, such as approach control systems, radio altimeters, anti-collision indicators and automatic position reporting systems will require still further radio channels, and frequency space will be provided to assure their fullest use.

► An international air route frequency structure to meet the radio requirements of all types of international commercial aviation probably will be established. It will be sufficiently flexible to allow for all possible developments. Trunk lines and feeder systems will share the same groups of frequencies. Four areas of intercontinental airway communication have been suggested, each to be assigned a "family" of radio frequencies. These are Polar-Pacific, North Atlantic, South Atlantic, and Trans-Pacific. In this hemisphere, the areas under consideration are U. S.-Canada, Alaska, Caribbean-Central America, and South America.

Findings of FCC, based on testimony taken from representatives of all phases of the radio industry, will be placed before the Inter-American Radio Conference, to be held in Rio de Janeiro early next year. The U. S. delegation is sure to lay great emphasis on requirements of aeronautical radio at this conference. Outcome will shape the future course of aviation in this hemisphere.

New AA Service

First shipment on American Airlines' new air-freight service consisted of clothes, cosmetics, shoes and sportswear flown from New York to Burbank, Calif. The service started in mid-month following Civil Aeronautics Board approval of scheduled tariffs.

► **Three Planes Converted**—American has three planes of 12,000 pounds capacity converted for air-freight work. Further conversions to all-freight before more aircraft become available are doubtful.

The service is available over American's domestic system, but does not extend over its Mexico City route, although such extension is planned. First reaction to the rates, lower than Railway Express Agency's, was said to be good, with more business offered than could be handled.



DISCUSS AIRFREIGHT:

Three officials from American Airlines' general offices in New York visited Fort Worth, Tex., to talk with the line's station managers from Southern and Western regions and Mexico about American's airfreight service and tariff. Left to right they are James A. Wooten, cargo traffic manager; T. W. Brooks, director of station operations, and W. F. Calliott, general auditor. International airfreight service between the U. S. and Mexico is to start in mid-November.

Parks Incorporates Air Transport Unit

Firm with \$3,000,000 authorized capital will ask CAB permission to substitute for Air College as applicant for 35 routes.

Effort of Oliver L. Parks, East St. Louis, Ill., and his associates to establish their interest in the local service air transport field took concrete form last week with incorporation of Parks Air Transport.

This organization will seek Civil Aeronautics Board permission to be substituted for Parks Air College as applicant for 35 routes totaling 14,769 miles in 15 central states. Incorporated under Nevada laws, it has \$3,500,000 authorized capital stock, of which \$2,000,000 will be paid in capital made up of \$50,000 from each of the five corporations Parks heads, \$400,000 in common stock paid in by board members and personnel of affiliated companies, and \$1,350,000 from sale stock.

Preliminary Work—The \$2,000,000 will be banked as working capital in anticipation of CAB authority to fly the routes or any part of them. Officials of the corporation



Manages Parks Line: Philip C. Wagner, vice-president and general manager of the newly incorporated Parks Air Transport, Inc., directed research on which Parks has based its local service application.

hope preliminary work on operational procedures may start early next year.

For the last two years they have been working up material to support the application. Final touches are being put on a book substantiating findings of a research group directed by Philip C. Wagner, of St. Louis, Mo., vice president and general manager of Parks Air Transport. A 400-page book along similar lines already has been published.

Research — Wagner points out that much time has been invested in experimental flights, research and engineering study. The new book will be more than 500 pages. The corporation plans to distribute employment evenly between returning servicemen and present employees, and has immediately available operating personnel consisting of pilots, mechanics, meteorologists, sales staff and others.

Officers are Oliver L. Parks, president; Wagner, vice president and general manager; John W. Bryan of Sikeston, Mo., secretary-treasurer. Directors: Edward C. Mickerman, St. Louis; Fred C. Parks, Belleville, Ill.; Joseph L. Mathews, Sikeston; D. Edgar Fletcher, Arcadia, Mo.; Oliver Parks and Wagner. Leonard Savage, Oklahoma City lawyer and member of the board, handled legal details of the incorporation.

Parks Air College at East St. Louis, of which Oliver Parks is president, is in its 18th year of aeronautical engineering training. Other contributing organizations,

originally formed to conduct flight-training programs for the AAF, are Alabama Institute of Aeronautics at Tuscaloosa; Mississippi Institute of Aeronautics at Jackson; Missouri Institute of Aeronautics at Sikeston, Mo., and Cape Institute of Aeronautics, Cape Girardeau, Mo.

Grace Takes Panagra Case to President

Asks CAB to request Chief Executive to direct company to apply for N. Y.-Balboa route in move to break deadlock by directors.

As a closing maneuver in Civil Aeronautics Board's Latin American proceeding, W. R. Grace & Co., co-owner with Pan American Airways of Pan American-Grace Airways (Panagra), petitioned the Board to find that a New York-Balboa route (for which Panagra has not applied) is required in the public interest and that Panagra should operate the route, and requested the Board to ask the President to require the divided Panagra management to apply for such a route.

Another step in W. R. Grace & Co.'s effort to break the deadlock in the Panagra board of directors, the move follows closely a suit brought against CAB in the U. S. Circuit Court of Appeals by W. R. Grace & Co., seeking judicial review of the Board's Panagra Terminal Decision. Inasmuch as the outcome of the suit may remain undetermined for many months, W. R. Grace and Co. lawyers have chosen this new line of attack.

President Arbiter—Behind the petition is a theory that the CAB is the planning body for the U. S. international air route structure. Under the Civil Aeronautics Act, the President is the ultimate arbiter of international route awards to U. S. carriers, with the Board acting as an adviser. It is W. R. Grace & Co.'s contention that an optimum route pattern for Latin America cannot be arrived at merely through consideration of the applications filed by various carriers, but that the Board must take direct action to this end.

They point out that no New York-Balboa application has been filed by any carrier, but that the line forms the shortest link between New York and the important West Coast of South America, an area which would be discrimi-

nated against if such service is not authorized.

Stalemate—Grace holds that, because of the corporate structure of Panagra, four Pan American directors have been able to hold Panagra in the position of a stepchild of Pan American, thus preventing Panagra from filing for the N. Y.-Balboa route because a quorum of directors cannot be obtained. Pan American, Grace claims, has specifically prevented such an extension because granting Panagra access to the U. S. would damage Pan American's role as connecting carrier between the U. S. and the West Coast of South America.

The problem presented by this petition falls immediately upon the Board's examiners in the Latin American case on which hearing ended last week. Ultimately, however, it must come before the Board. The latter has found that without application by a carrier it cannot issue a certificate which would radically change the character of that carrier's route system. In this case, however, the Board is specifically requested to pass the question along to the President, who is asked to "request or require" Panagra to file for the route the W. R. Grace half of its management thinks it should have.

Friction Criticized—The Board repeatedly has criticized the "unhealthy" friction in the Panagra management. From this it seems safe to assume that the Board would welcome some equitable means of breaking the deadlock.

The petition is expected ultimately to reach the President, who must approve the Board's decision on the Latin American case before it is made public.

W. R. Grace & Co. therefore may have accomplished something of a tactical victory by a move to bring the Panagra situation to the attention of the Chief Executive.

CAB ACTION

- Civil Aeronautics Board denied petition of National Airlines seeking reconsideration of CAB's rate decision of last February. Board previously reopened case for reconsideration of the line's mail rate after Feb. 1, 1944, but National sought additional reconsideration for the period after July 1, 1943.
- Board's consolidation order in the Pacific proceeding (Docket 547 et al.) indicates proposed services to Australia, the North and Central Pacific areas and between U. S. and Alaska will be considered simultaneously. Applications now consolidated in the proceeding include American President Lines, Ltd.; Chicago & Southern; Hawaiian Airlines, Ltd.; Inland Airlines; Northwest Airlines; Pan American Airways; Prairie Airways, Inc.; PCA; TWA; U. N. Airships, Inc.; United Air Lines; Western Air Lines; and Woodley Airways. Department of Justice received CAB permission to intervene.
- Royal Dutch Air Lines (KLM) applied to CAB for a three-month extension of its temporary permit to enter the U. S. at Miami.

SHORTLINES

Load factor on National Airlines' new run between New York City and Jacksonville, since its start Oct. 1, has been 98.92 percent southbound and 97.31 percent northbound. Flying time between Florida and New York has been as low as three hours and 50 minutes, and company officials believe it will be close to three hours in six months.

Improvements slated for Chicago's municipal airport are expected to give capacity of 60 landings and 60 takeoffs an hour in fair weather, by early 1946. Contingent on WPB's making materials available, improvements are to cost \$1,750,000.

The extension, if approved, will be valid through Jan. 31, 1945.

• A portion of the application of Andrew J. Burke requesting a route between Laredo, Texas, and Corpus Christi, Texas, has been dismissed by the Board for failure to prosecute.

• City of Philadelphia and Boston Port Authority were authorized to intervene in the North Atlantic proceeding, and completed their presentations early in the hearings.

• Requests of American Airlines, Mid-Continent Airlines and Eastern Air Lines for reconsideration of the Board's decision in the Indianapolis-St. Louis-Detroit case (Docket 303 et al.) have been denied by CAB.

• TWA's application for removal of local service restrictions on AM 37 has been consolidated into the West Coast case (Docket 250 et al.).

• At request of Bremerton-Tacoma Stages, Inc., Board dismissed company's applications for routes in northwestern states. Application had been consolidated with West Coast case.

• Eastern Air Lines' petition to have its application for the amendment of AM 6 included in the proceeding to amend National's certificate for AM 31 has been denied. Eastern is asking the addition of New Bern and Wilmington, N. C., to AM 6. National also is asking addition of New Bern on AM 31.

• Board approved interlocking relationships involving L. H. Dwerlkotte, Charlie N. James, Thomas Wolfe, Paul E. Sullivan, J. J. Taylor and William A. Coulter, each of whom holds identical positions as officer of Western Air Lines and Inland Air Lines.

• City of Houston, Tex., has asked CAB permission to intervene in the Texas-Oklahoma cases.

• Commonwealth of Massachusetts has applied for permission to intervene in the New England case.

• City of Springfield, Mo., was granted permission to intervene in the Kansas City-Tulsa-New Orleans case (Docket 651 et al.).

• Board amended Northeast Airlines' certificate for AM 27 to include Lawrence, Mass., as an intermediate point between Boston, Mass., and Portland, Me. The application was a holdover from the New York-Boston proceeding, from which it was severed because it involved an international route. Board's decision was approved by President Roosevelt Oct. 18.

• CAB issued a temporary exemption order to permit American Export Airlines to conduct winter operations between Foynes, Eire, and New York via Port Lyautey, French Morocco; Bathurst, Gambia; and Port of Spain, Trinidad and/or San Juan, P. R. westbound. The same order permits eastbound operations via Bermuda and Port Lyautey.

• Pan American Airways received a similar winter exemption order permitting the following operations:

Between Foynes, Eire, and Natal, Brazil, via Lisbon and Dakar.

Between Natal and Lisbon via Fisherman's Lake, Liberia; Bolama, Portuguese Guinea; and Dakar.

Between Lisbon and New York via Dakar, Bolama, Fisherman's Lake, Natal, Belem, Port of Spain, San Juan and Bermuda.

Between Foynes and New York via Lisbon, Dakar, Natal, Belem, Port of Spain, San Juan and Bermuda.

The restriction order suspends service between New York and Foynes via Shediac, Botwood; westbound between Foynes and New York via Lisbon, Horta (Azores) and Bermuda; and eastbound on the New York-Natal segment (via Bermuda, San Juan, Port of Spain and Belem) of the New York-Lisbon route.

with eight airlines lending \$1,250,000 without interest for construction of a new passenger terminal, and the city providing \$500,000 for necessary improvements. Chicago will own the terminal, the airlines collecting their loans in withheld hangar and landing fees.

A fleet of five DC-3's, now being reconverted, is to be placed in service by Pan American Airways between Seattle, Wash., and the cities it serves in Alaska, with the expectation that three times as many air travelers can be carried as at present.

Opening of service to Huntsville, Ala., is planned by Pennsylvania-Central Airlines for early next month, now that airport facilities are available. Stop at Huntsville was certificated in 1942.

Northwest Airlines, in its second major expansion in the Twin Cities in the last four months, has purchased for \$87,000 a building to house shops and maintenance personnel.

Service on Northeast Airlines' Boston-Montreal route, suspended July 1, 1942, because of the war, is to be resumed Oct. 23 with two round trips daily.

One thousand hours' flying time between Pearl Harbor and San Francisco has been completed by the Mars, representing more than 200,000 miles with more than a million pounds of cargo.

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AT The Cradle of Aviation
HAMMONDSPORT • NEW YORK

Unshackle Personal Flying

SOME DAY physical examinations for private flyers should be abolished. Meanwhile, opposition continues in some non-flying quarters—mainly those specially-designated medical examiners who have the exclusive right to pass on potential and present pilots—against the first progressive step toward simplifying present medical regulations. This would eliminate the annual examination.

The Safety Bureau of the Civil Aeronautics Board several months ago began circulating a proposal relating to private and student pilots that either (1) physical examinations be given only every two years by any qualified physician of the pilot's choice or, that (2) only one physical examination by a medical examiner duly authorized by the Administrator be given at the time the certificate is issued and thereafter it would be the pilot's own responsibility not to fly if his physical condition became such that he could not pass the original examination. "In either case, it may be that the examination can be more general in nature and consist of a determination that the applicant has adequate eyesight and no ailments which might cause him to become incapacitated suddenly or unexpectedly," the proposal reads.

This proposal was brought about by a virtual rebellion of private flyers. They were justifiably exasperated at an alarming trend by examiners to reject, rather than pass, applicants or certificate holders on the basis of physical condition. What was originally meant as only the first step in a screening process that continued through the flight instructor and the CAA inspector became the major bottleneck in the growth of personal aviation. The potential private pilot was looked upon as someone needing the stamina and constitution of Superman because the public must be protected from thousands of falling planes. But it was the public who revolted, because more and more it sought to learn how to fly and was rebuffed to the point of doing something about it. It was thoroughly fed up with unnecessarily strict examinations and notices from Washington which did not even tell the disappointed candidates why they did not pass their physical.

What is the basis for continuing the present regulations? Does the record show that the pilot's physical condition has been a factor in past accidents? Actually, no satisfactory answer to the proposal has been heard. The truth is that we have been accepting too many statements which are not facts. Objections to liberalizing physicals have been, and still are, based on accidents which might happen. Assumptions have been made for

which there is no proof. Experience and records have been ignored. For example:

The director of CAB's Safety Bureau, Jesse Lankford, finds that in analyzing over 60,000 civil aviation accidents in the last 18 years, no more than two or three could be associated with any physical condition of the pilot which could have been ascertained through the periodic physical examination given him prior to the accident.

In order to prevent the cry that this record of 18 years is not sufficient proof because it is based on the Safety Bureau's own records, let it be supplemented by an independent study by an impartial, respected research group. If the results substantiate the position of the Safety Bureau it should put into effect immediately a liberalized regulation similar to its proposal.

Private flying has been hamstrung beyond endurance and the revision of physical standards is the first step in the long, hard process of unshackling private flying.

Good Public Relations

IT HAS TAKEN a disgruntled RAF sergeant in India to remind some Americans that despite our tendency to overdo self-praise occasionally, the standard of publicity material distributed about U. S. aircraft is the highest in the world.

The sergeant complained to the editors that his *Aeroplane* was filled with news and photographs of *Fortresses, Liberators, Mustangs, Thunderbolts, Marauders, Havocs* and *Bostons* and only casual references to *Spits* or *Bomber Command*. "So far as I can see," wrote the sergeant, "the only thing that remains to be done now is to change the price of *The Aeroplane* from one shilling to 40 cents."

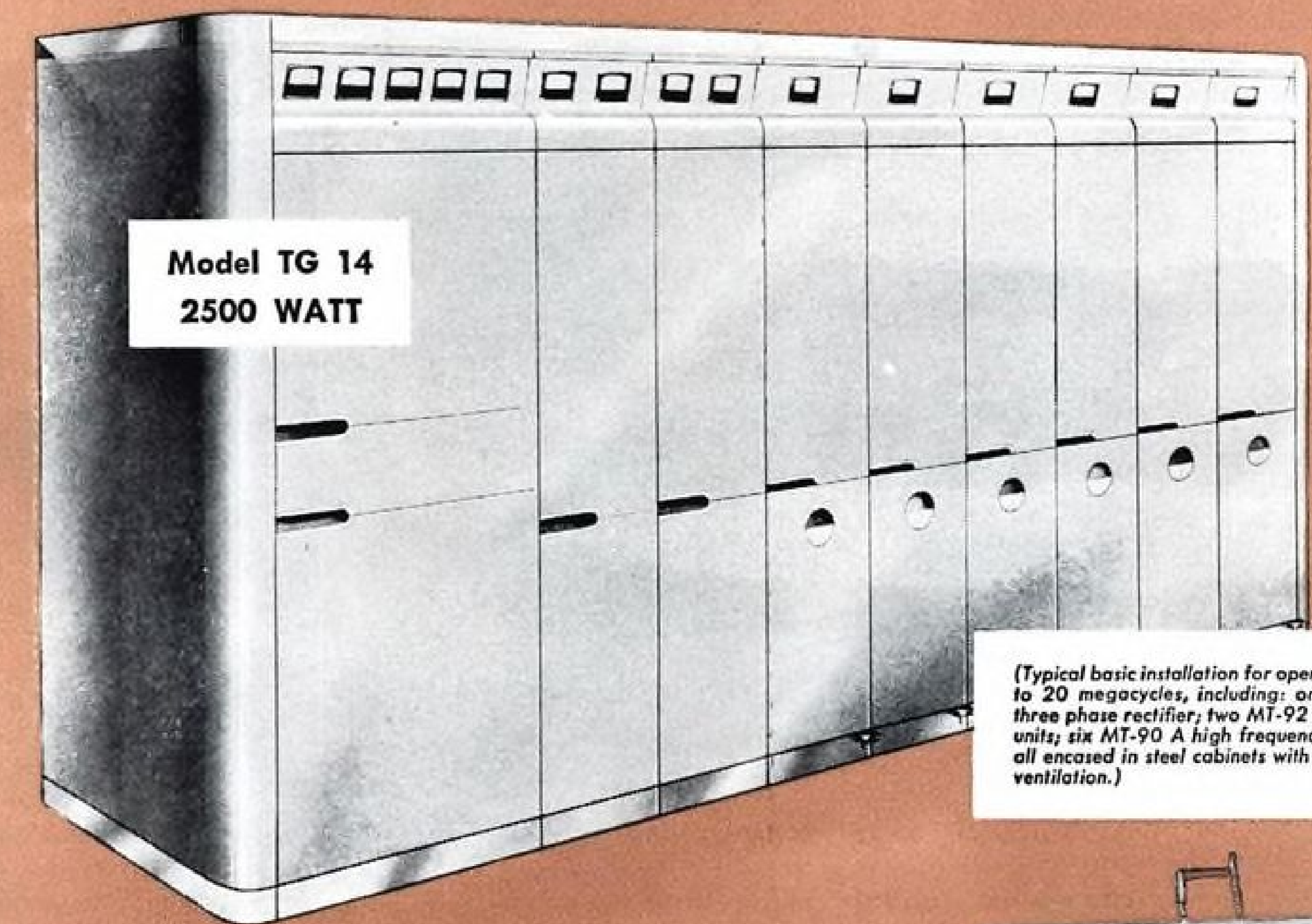
To which the editors replied: "We entirely agree with our critic, but the fault is not ours. As we have pointed out before, *The Aeroplane* is shoaled under with beautiful photographs and all the information it requires about U. S. aircraft, but we cannot get either the photographs or information we require about British aircraft. . . . The British aircraft industry will not get the square deal it deserves and has earned, and which will enable it to compete in fair competition with foreign markets, until it is released from the shackles of bureaucratic government control. The same argument applies to the Royal Air Force. . ."

The quality of information released by U. S. aircraft companies and the airlines to publications all over the world will contribute to what we believe will be unprecedented demand for our post-war planes. The public relations staffs of the industry have done an excellent job.

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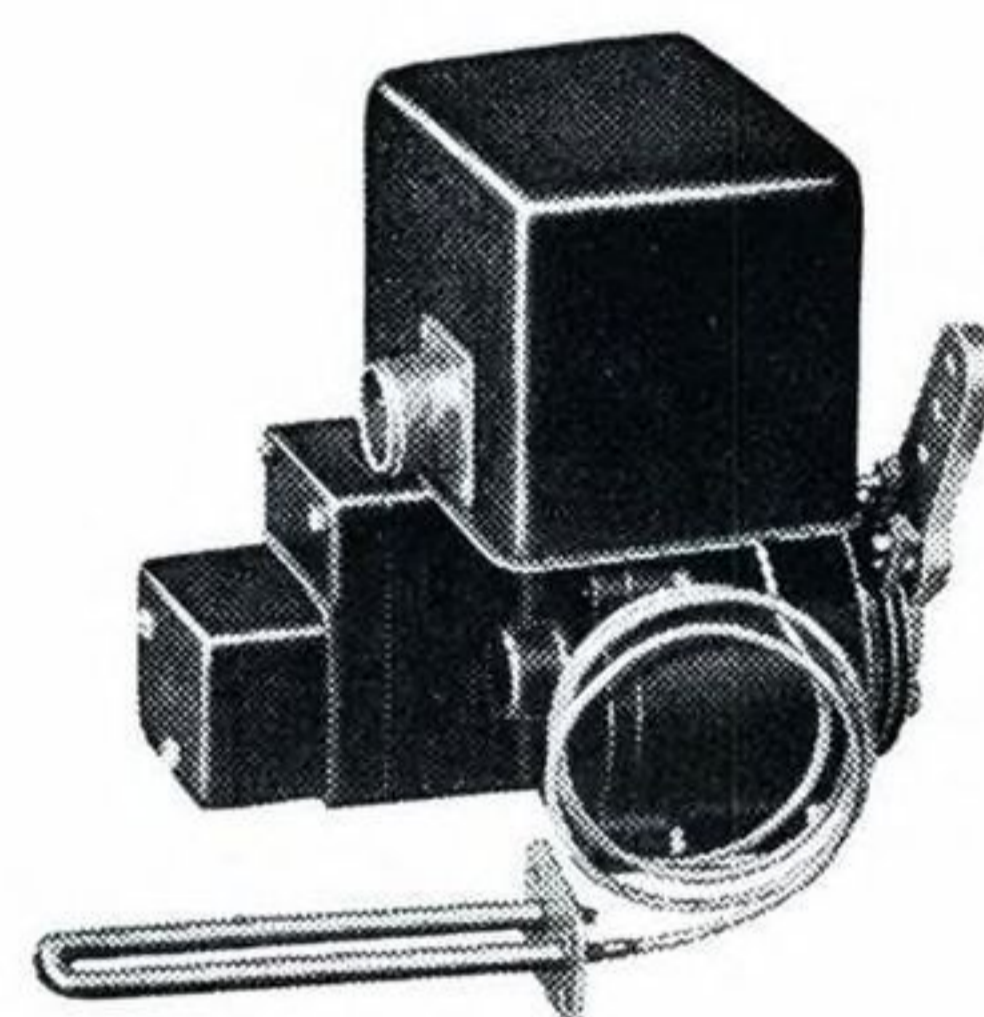
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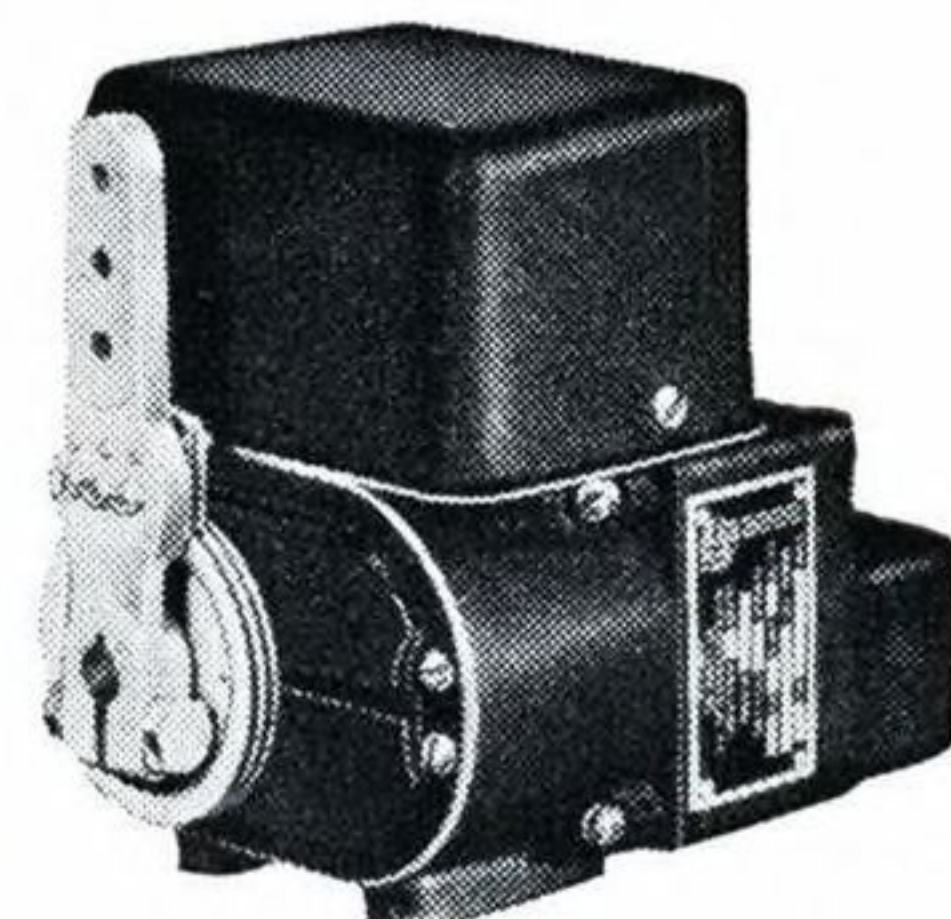
Authorized manufacturers concerned with the above or similar applications may secure engineering data on request.



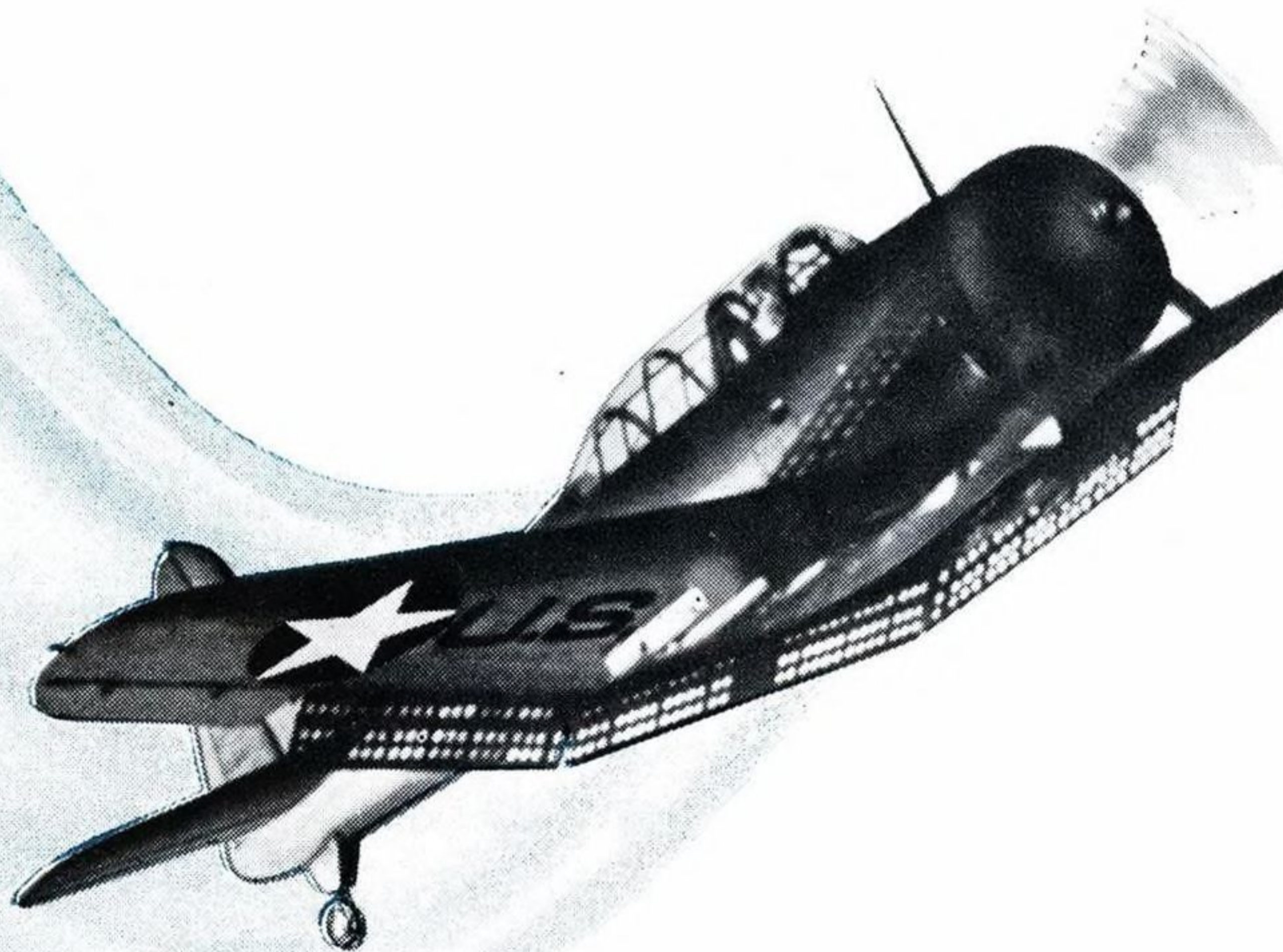
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