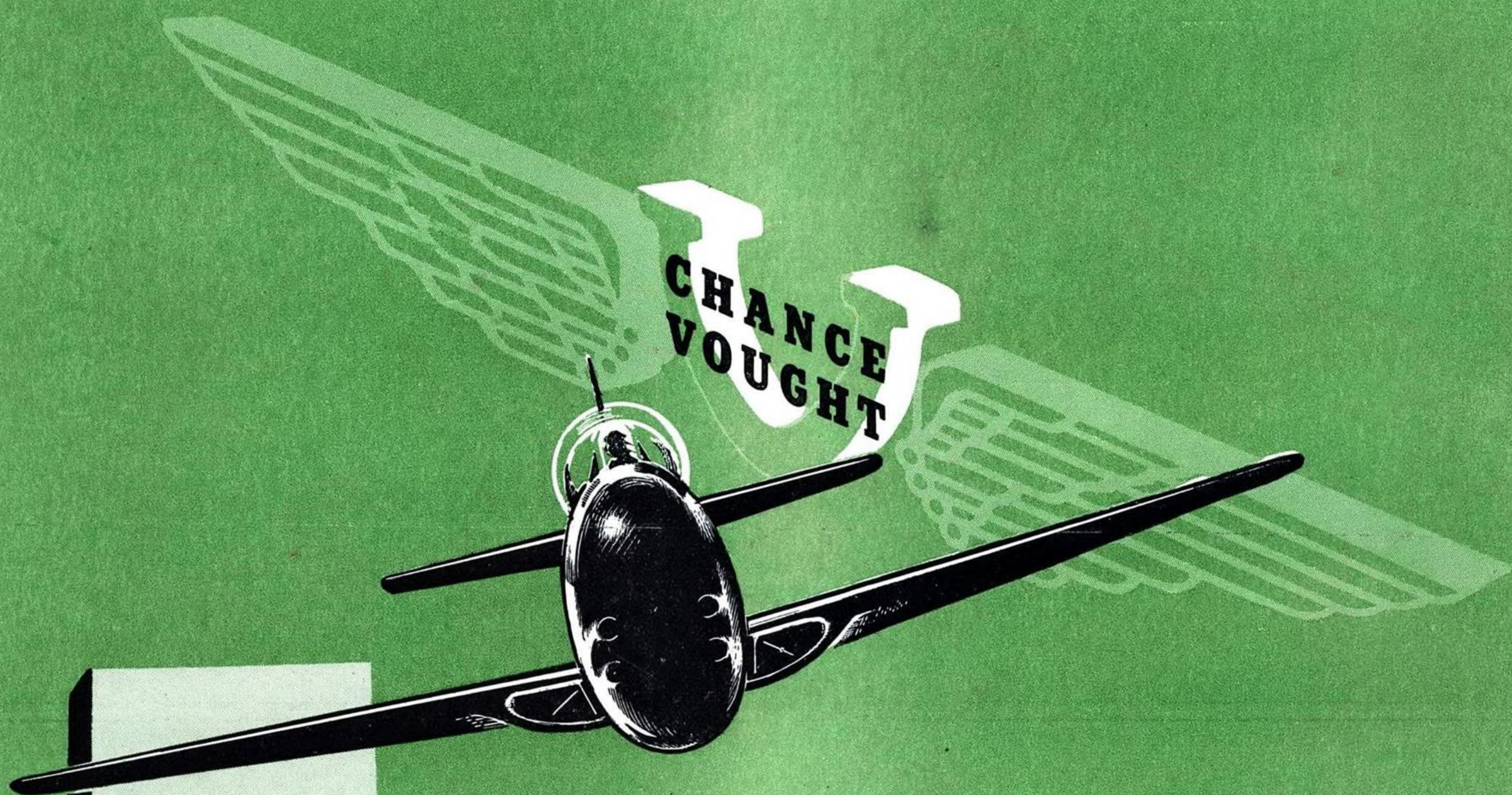


AVIATION WEEK

A MCGRAW-HILL PUBLICATION

JUNE 21, 1948



TO THE LONE STAR STATE

Chance Vought Aircraft, designers and builders of famous Navy aircraft for more than 30 years, will soon have a new address—Dallas, Texas. Necessity for the move is directly related to national defense, plus the pressing need for better flying facilities and better flying weather for the development and testing of high-speed jet aircraft.

The transfer of activities will be gradual, extending well into 1949. Meanwhile every possible effort is pledged to achieve efficient operations in the new plant as quickly as possible.

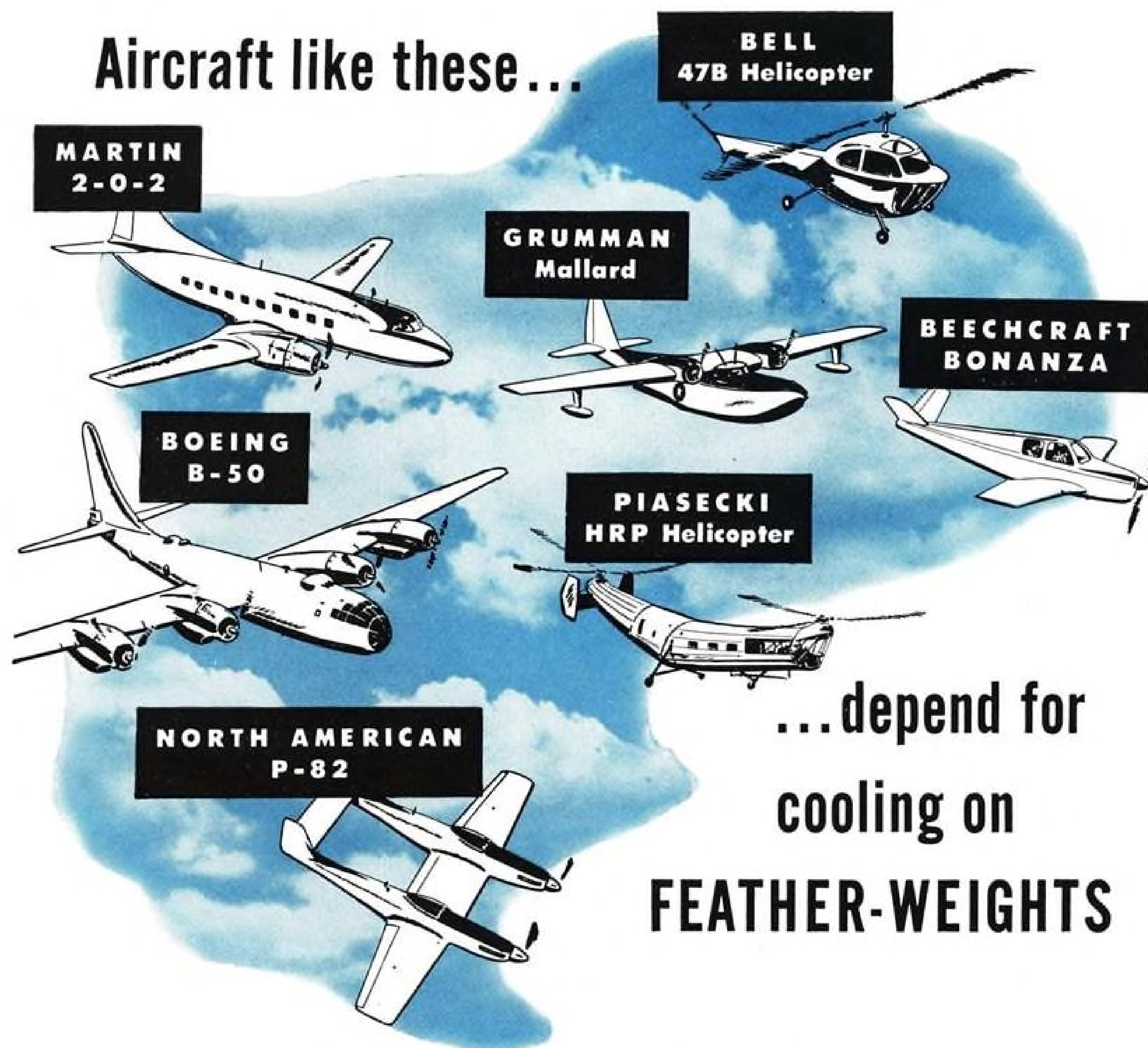


**CHANCE VOUGHT
AIRCRAFT**

STRATFORD, CONNECTICUT

ONE OF THE FOUR DIVISIONS OF
UNITED AIRCRAFT CORPORATION

Aircraft like these...



...depend for
cooling on
FEATHER-WEIGHTS

There are two main reasons why Feather-Weight All-Aluminum Oil Coolers are now specified for so many of America's leading aircraft, including the latest developments in jet propulsion aircraft.

1. UNIQUE CONSTRUCTION. Clifford's patented method of brazing with aluminum alloy makes all-aluminum construction possible with consequent high resistance to temperature, pressure, vibration and shear.

2. ACCURATE TESTING. Feather-Weight performance under any temperature and atmospheric conditions likely to be met in service is precisely predetermined in Clifford's wind tunnel laboratory . . . largest and most complete in the aeronautical heat exchanger industry.

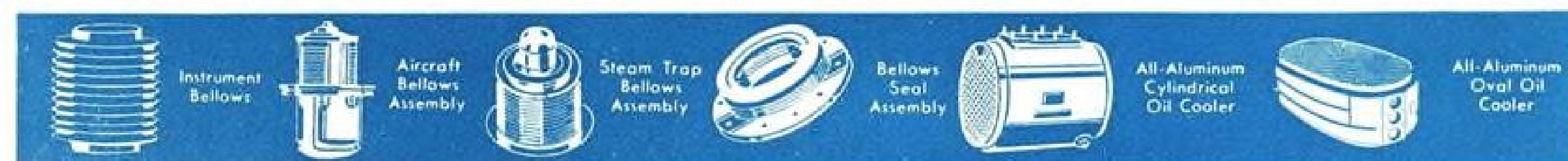
Inquiries concerning Feather-Weight All-Aluminum Oil Coolers are invited. Clifford Manufacturing Company, 561 E. First Street, Boston 27, Mass. Offices in Detroit, Chicago and Los Angeles.

CLIFFORD



ALL-ALUMINUM OIL COOLERS

HYDRAULICALLY-FORMED BELLOWS



Macwhyte "Hi-Fatigue" **PREformed Aircraft Cable** is all that the name implies; it has remarkable ability to resist fatigue caused by bending over pulleys or sheaves. Available in either Galvanized or Stainless Steel, it is supplied in reel lots, specified lengths, or complete cable assemblies.

Macwhyte "Safe-Lock" **Terminals** are precision made of Stainless Steel. There are many types and sizes in the complete Macwhyte line. All are available loose or swaged to cable.

Macwhyte Cable Assemblies of "Safe-Lock" Terminals and "Hi-Fatigue" cable are made by Macwhyte to your specification for type, size, and length.

MACWHYTE COMPANY

2905 Fourteenth Avenue, Kenosha, Wisconsin
Member A. D. M. A. and A. I. A.

MANUFACTURERS OF MACWHYTE "HI-FATIGUE" AIRCRAFT CABLE • "SAFE-LOCK" CABLE TERMINALS • CABLE ASSEMBLIES • TIE-RODS • WIRE ROPE • BRAIDED WIRE ROPE SLINGS

Catalogs and Literature available from Macwhyte Company and Macwhyte Distributors.



NSI, 930-A

**SFI HAS SAVED
—US \$4000
IN SIX MONTHS**



—says:
OMAR MIDYETT
President
MIDWEST FLYERS
East St. Louis, Ill.

Last year Midwest Flyers equipped their fleet of 29 planes with Safe Flight stall warning indicators. Now Omar Midyett, Midwest President reports;

"The Safe Flight Indicator has exceeded our expectations and won enthusiastic approval from our instructors. In six months we figure we have saved over \$4000 by completely avoiding the usual stalled-in landings and stall/spin accidents. We know of no better insurance for flying schools than the SFI."

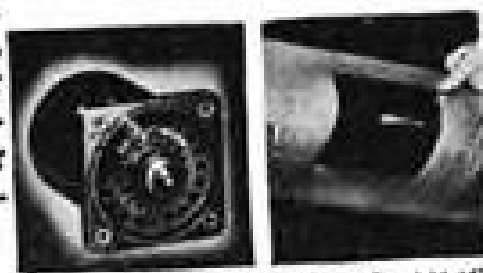
SFI PRAISED BY INSTRUCTORS

"Many of our instructors at first were skeptical about the SFI, but they are now extremely enthusiastic over it. Right from the start the SFI trains students to be stall-conscious and they develop good flying habits much more rapidly."

"Our SFI's are turning out better students and give our airplanes maximum protection. We wouldn't take them off for double their price."

Try, fly **SFI**
You'll like it, too

Whether you're an operator or a private owner you'll get a great kick flying with the SFI, the only stall instrument on the market which fully satisfies CAA development tests. Regardless of your experience, the SFI will show you stall conditions you didn't know existed. You'll find the SFI an invaluable flight instrument. SFI is in use on all types of aircraft, even jet fighters, and is standard equipment on all Stinsons and Convairliners. Easily installed. \$47. Your dealer can supply you. Write for your copy of "Something New for Your Airplane".



★ PANEL UNIT WING UNIT

SAFE FLIGHT
INSTRUMENT CORP.

White Plains, New York

AVIATION WEEK

Vol. 48 No. 25

June 21, 1948

The Aviation Week.....	7	New Products	29
News Digest.....	8	Financial	33
Headline News	11	Sales & Service.....	34
Aviation Calendar	16	Briefing for Dealers.....	39
Industry Observer	16	World News	42
Engineering-Production	17	Transport	47
Editorial	58		

Robert H. Wood
EDITOR

Merlin H. Mickel
MANAGING EDITOR

Robert B. Hotz.....	News Editor	Katherine Johnsen.....	Congress
Irving Stone.....	Technical Editor	Stanley L. Colbert.....	Production Editor
William Kroger.....	Manufacturing	Marie Adams.....	Editorial Assistant
Alexander McSurley.....	Sales & Service	Anita Scaffo.....	Editorial Assistant
Charles L. Adams.....	Transport Editor	Margaret Timmerman ..	Editorial Assistant
Robert McLarren.....	Engineering	Victoria Giaculli.....	Editorial Makeup
Scholer Bangs.....	Pacific Coast Editor		

Executive and Editorial Offices: 330 W. 42nd St., New York 18, N. Y., Phone Longacre 4-3035; National Press Bldg., Washington 4, D. C., Phone National 3414.

Domestic News Bureau: Atlanta 3, Rhodes-Haverty Bldg.; Chicago 11, 520 N. Michigan Ave.; Cleveland 15, Hanna Bldg.; Detroit 26, Penobscot Bldg.; Los Angeles 14, 621 S. Hope St.; San Francisco 4, 68 Post St.; Houston, 514 South St. Correspondents: Boston, Buffalo, Dallas, Dayton, Denver, Indianapolis, Jacksonville, Kansas City, Knoxville, Lansing, Louisville, Memphis, Miami, Milwaukee, New Orleans, Oklahoma City, Ogden, Philadelphia, Phoenix, Pittsburgh, Portland (Ore.), St. Louis, Salt Lake City, Seattle, Wichita, and 43 other cities.

Foreign News Bureau: London, Paris, Berlin, Moscow, Tokyo, Bombay, Melbourne, Rio de Janeiro, Buenos Aires. Correspondents in Athens, Caracas, Santiago, Shanghai, Zurich, Rome, Johannesburg and over 40 other cities.

ECONOMIC STAFF

Dexter M. Keezer, Sanford S. Parker, William F. Butler, Robert P. Ulin

Robert F. Boger
PUBLISHER

J. G. Johnson, Business Manager; R. W. Martin, Jr., Sales Manager; Sales Representatives: J. C. Anthony, New York; M. J. Storz, Philadelphia; V. K. Disette, Cleveland; L. J. Biel, Chicago; W. G. Ashmore, Atlanta; J. W. Otterson, San Francisco; C. F. McReynolds, Los Angeles. Other sales offices in Pittsburgh, Detroit, St. Louis, Boston and London.

Member of Associated Business Papers, Inc., and the Audit Bureau of Circulations

McGraw-Hill Publishing Co., Inc., James H. McGraw (1860-1948), Founder. Publishing Office, 99-129 N. Broadway, Albany, N. Y. Return postage guaranteed. Editorial and executive offices: 330 W. 42nd St., New York 18; 520 N. Michigan Ave., Chicago 11; 68 Post St., San Francisco 4; Aldwych House, London, W.C. 2; National Press Bldg., Washington 4, D. C.; Architects Bldg., 17th & Sansome St., Philadelphia 3; Hanna Bldg., Cleveland 15; 2980 Penobscot Bldg., Detroit 26; Continental Bldg., St. Louis 8; 1427 Statler Bldg., Boston 16; Rhodes-Haverty Bldg., Atlanta 3; 621 South Hope St., Los Angeles 14; 738-9 Oliver Bldg., Pittsburgh 22. JAMES H. MCGRAW, Jr., President; CURTIS W. MCGRAW, Vice-President and Treasurer; EUGENE DUFFIELD, Executive Assistant for Publications; NELSON BOND, Director of Advertising; JOSEPH A. GERARDI, Secretary; J. F. BLACKBURN, Jr., Director of Circulation. Aviation Week, 330 W. 42nd St., New York 18. Published weekly, price 50¢ a copy, 50¢ in Canada. Allow at least ten days for change of address. Address all communications about subscriptions to Director of Circulation, 330 W. 42nd St., New York 18, N. Y. Subscription rates—United States and possessions, \$5 a year, \$8 for 2 yr., \$10 for 3 yr. Canada, \$6 for 1 yr., \$10 for 2 yr., \$12 for 3 yr., payable in Canadian currency at par. Pan American countries, \$10 for one yr., \$16 for 2 yr., \$20 for 3 yr. All other countries, \$20 for 1 yr., \$30 for 2 yr., \$40 for 3 yr. Please indicate position and company connection on all subscription orders. Entered as second class matter July 16, 1947, at Post Office, Albany, N. Y., under Act of March 3, 1879. Volume 48, Number 25. Printed in U.S.A. Cable address "McGraw-Hill, New York." Member A.B.C. Copyright 1948, McGraw-Hill Publishing Co. Aviation Week is indexed in "Indexer's Guide to Periodical Literature" and in "Industrial Arts Index." Following publications are combined with AVIATION WEEK: AVIATION, AVIATION NEWS, AIR TRANSPORT, AERONAUTICAL ENGINEERING and AIRCRAFT JOURNAL. All rights to these names are reserved by McGraw-Hill Publishing Co.

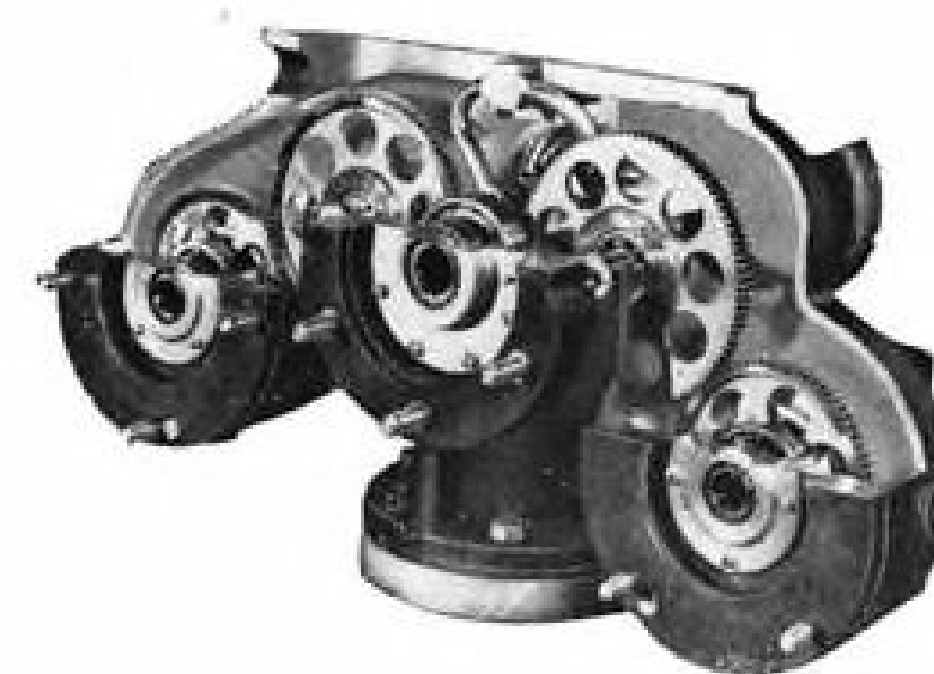
Aircraft ball bearing development in step with aviation progress

SPECIFICATION

Ball bearings for accessory drive on turbo jet engine

MUST be compact and lightweight.
MUST maintain shaft rigidity to close tolerance. Power output per pound far exceeds that of ordinary gearboxes. Demands extreme refinement of gear trains.

MUST handle variety of speeds from moderate to high.



SPECIALIZATION

Fafnir Series MM 9100 Series Super-Precision Ball Bearings . . . compact, space-saving construction

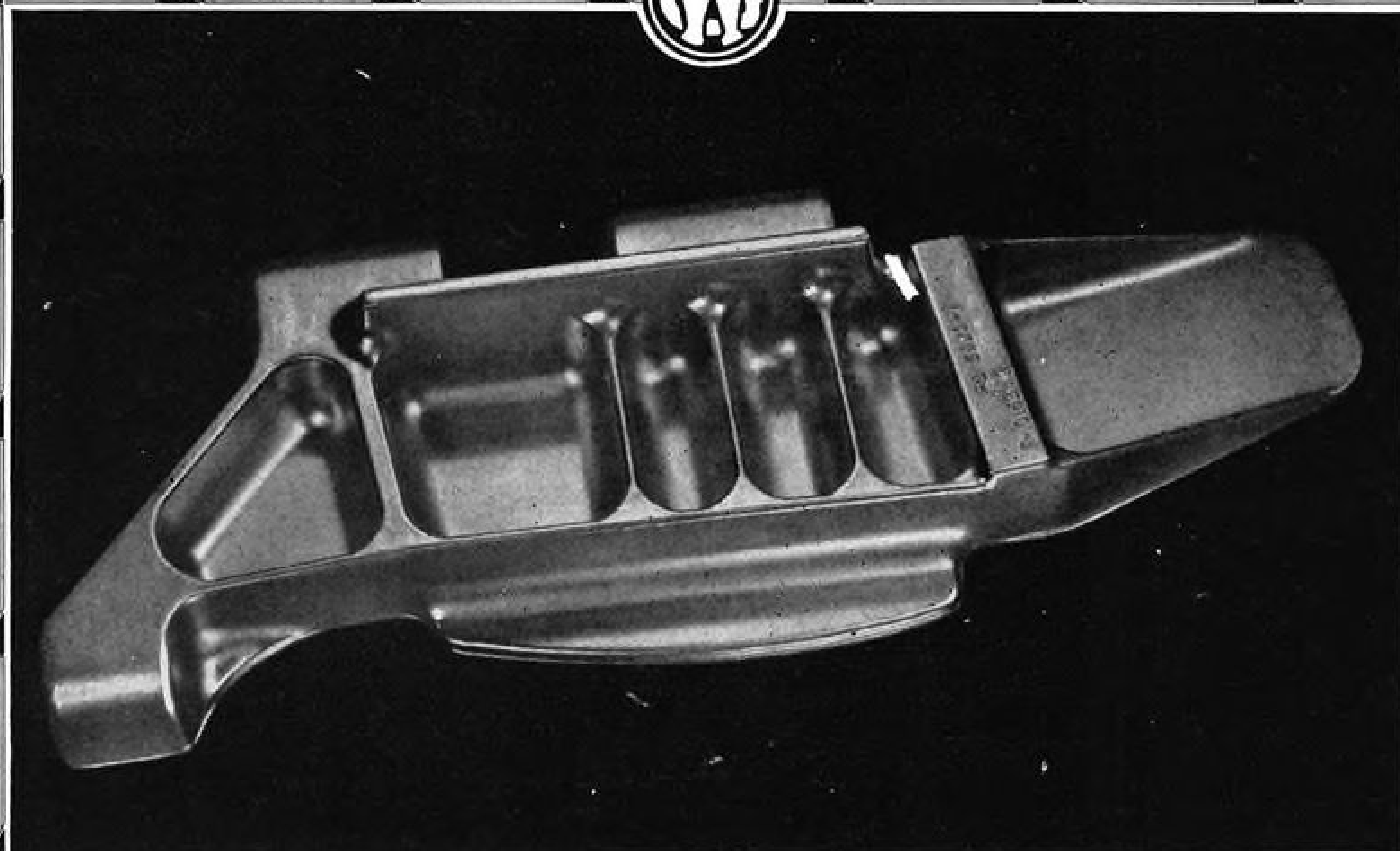
- ★ Light in cross-section with smaller outside diameter than standard ball bearings for the same bore diameter.
- ★ Counterbore construction which provides maximum ball complement and increases radial capacity. Added thrust ability in one direction.
- ★ Made to super-precision standards as demanded for fine machine tool spindles. One-piece composition retainers.
- ★ Shaft rigidity maintained at all speeds.



For twenty years the Fafnir Aircraft Division has grown with the aircraft industry by working constantly with research men, designers and engineers. That's how these Fafnir specialists got the industry habit of regarding a job done as just the beginning of a job to do . . . using each new achievement as the take-off for another advance.

That is also why Fafnir has been responsible for the major developments in ball bearings for aircraft. And why Fafnir is the logical first choice for either aircraft ball bearings or for air-minded collaboration in solving new bearing problems. The Fafnir Bearing Company, New Britain, Conn.

THE
FAFNIR
Aircraft
Ball Bearing
Division



Typical of many Wyman-Gordon developments is this complicated light alloy forging used in the wing structure of one of Uncle Sam's latest fighting planes.

Modern transportation on the ground and in the air requires the maximum use of forgings. For greatest strength with minimum weight and uniformity of quality no other method of forming metal competes with the forging process.

Are you taking full advantage of the constantly growing range of forgings?
Wyman-Gordon forgings all the way from five up to one thousand pounds.

Standard of the Industry for More Than Sixty Years.

WYMAN - GORDON

Forgings of Aluminum, Magnesium, Steel

WORCESTER, MASSACHUSETTS, U. S. A.

HARVEY, ILLINOIS

DETROIT, MICHIGAN

THE AVIATION WEEK

Report on Procurement

Now that the smoke of battle has temporarily cleared from Capitol Hill it is possible to evaluate some of the results of the current crop of aircraft legislation.

Most important fact to emerge from the six-month controversy over the strength of American air power is the swift pouring of approximately two billion dollars into an industry that now has a total backlog of unfilled orders of little more than a billion and a half dollars. Impact of this program over the next two years will mean a 50 per cent increase in industry-wide employment and the first black ink years for the industry as a whole since the end of the war.

One measure of the progress achieved during the current battle on the Hill is a look back at where air power started when the fiscal 1949 appropriation bills went into the Congressional hopper. President Truman's original budget asked for funds to buy 2003 new planes. Of these the Air Force was to get 978 and the Navy 1025. This was in the face of strong advice from his own air advisers that a 3000 plane annual production rate was necessary to keep the aircraft industry alive and a 5700 plane annual rate was the minimum this country could afford in a period of international instability.

Bi-partisan Support

Republican leadership of Congress seized on the air power issue as a popular cause to belabor the Truman administration. But the real effort to put American air power on its feet was a bi-partisan effort that put an almost unanimous stamp of Congressional approval on the vital bills. Only a handful of left-wingers (three in the House and two in the Senate) voted against the measures.

In the face of this tremendous Congressional force the Truman administration upped the ante to 3106 planes (1571 for the USAF and 1535 for the Navy). Congress boosted this raise to a total of 4262 with the extra 1056 planes all for the Air Force.

Biggest fear of the Truman administration in its efforts to keep the aircraft procurement program down was the bugaboo of its possible impact on a tight economy that might produce a new inflationary spiral in an election year.

Russian Theories

Coupled with this was a corollary that drafting manpower rather than building planes would be cheaper and a more immediate solution to military needs that would impress the Russians. This theory that only divisions will impress the Russians is peddled principally by Ambassador to Russia Bedell Smith, a Regular Army ground officer. There is considerable evidence to the contrary including the strong testimony of wartime Ambassador to Russia, W. Averill Harriman and Air Secretary Symington. Both agree that the Russians fear a strong Air Force most and are desperately attempting to outbuild the United States in the air.

Primarily as a result of the inflation bugaboo the President ignored the Congressional aircraft procurement authorization and allowed the services to spend some \$300,000,000 less than Congress voted. The net result is letters of intent have now gone out to the industry for 3366 new aircraft. This is slightly above the 3000 plane minimum annual production rate cited by the Air Co-ordinating Committee as

necessary to keep the industry both alive and available.

Written into the procurement bills was a provision calling for reviews of the procurement program by the President and Defense Secretary in September and December. After these reviews the remainder of the procurement funds may be allocated or the program may be cut back, depending largely on the international situation.

Survival Program

The wisdom of a cutback, regardless of the international situation is seriously questioned by many observers because the current program barely meets the survival needs of an industry that must be kept healthy if the United States wishes to keep the capacity for an emergency expansion of aircraft production. It is this need to meet the industry's minimum survival requirements that was the most important issue at stake on Capitol Hill this spring. Neither the Air Force 70-Group program nor the Navy 14,500 plane program were really at stake. Both services now have the planes to expand to those numerical values although most of them will become obsolete shortly. What the services really stood to lose was the productive capacity of the industry they are dependent on for modern replacements.

The procurement program as it now stands meets these minimum survival requirements. It does not meet the requirements of an expansion program needed for a real threat of war. If it is cut much below present levels the industry will sink back into the slough of depression from which it is now being raised. This real crisis in the industry was the reason for the speed requested in rushing procurement funds through well ahead of the regular appropriation bills.

The production lines were running out of orders this spring. At Lockheed the P-80 line was ready to stop. At Allison the end of jet engine production was in sight. At Fred Crawford's Thompson Products, makers of jet turbine blades and other vital accessories the same situation prevailed. Under normal procedures new orders would not be placed until late fall after the procurement bills were passed in July. By that time skilled workers would have been laid off and productive capacity virtually lost.

Thank Barrows

Airframe manufacturers can probably thank Undersecretary of the Air Force Arthur Barrows for prodding the military into an unmilitary speed on this matter. With Defense Secretary Forrestal's full support he sparked separation of the procurement funds in the rush through Congress. Telegraphic letters of intent went out from Wright Field to Air Force contractors less than 24 hours after Forrestal authorized spending the funds. Navy has already allocated all but 30 of its 1165 planes. This unprecedented peacetime procurement speed has averted the serious crisis that the Air Co-ordinating Committee gloomily forecast for this summer.

There are many vexing problems remaining in the procurement program. Nobody is quite sure just what the Renegotiation Act of 1948 tacked on as a procurement amendment really means or how it will work. What the Presidential reviews will bring looms as another big question mark with the temper of next year's Congress even more uncertain. But a substantial start has been made on reviving the industry. The bottom has been reached. For the next two years the trend will certainly be upward.

ADJUSTABLE SHIMS



Tolerances are more easily attained... factory assembly and service adjustments are speeded up. LAMINUM, the "solid" shim that peels for adjustment, is a precision tool even in unskilled hands. Laminations are simply peeled, leaving a shim of known thickness. Write for data and application chart.

LAMINUM, the "solid" shim that peels for adjustment, is cut to your specifications at our factory. Shim stock packaged for repair and maintenance work is sold only through industrial distributors. Laminated Shim Company, Inc. Glenbrook, Connecticut 3027

LAMINUM
THE SOLID SHIM THAT peels FOR ADJUSTMENT

NEWS DIGEST

DOMESTIC

Wright Field began use of the world's largest runway after a year of construction. The runway is 10,000 ft. long, 300 ft. wide and its thickness of up to 25 in. is designed to support the heaviest aircraft now contemplated.

Pan American World Airways scheduled its first Convair 240-type Clippers to begin operations June 16 between Miami and Havana and one roundtrip between Miami and Nassau, cutting flying time approximately 15 minutes from previous DC-4 schedules on both runs.

United Airlines is preparing to "fly to the factory to drive your new car home plan," with cooperation of Detroit auto manufacturers, Packard and Kaiser-Frazer. Savings to motorists on freight and handling are reported enough to cover air fare to Detroit as well as expenses home, usually.

A DC-4 converted into a flying stock car, took off from La Guardia Field, N. Y. on a Seaboard and Western Airlines special flight to Milan, Italy, carrying seven bulls, two heifers, 50 pigs, 16 white leghorn chickens, two cocker spaniels, two Scottish terriers and an English setter.

900 UAW CIO workmen of Ryan Aeronautical Co., San Diego, Calif. began a wage deadlock strike last week after Roy Reuther, UAW national executive from Detroit, rejected a company offer.

FINANCIAL

Lockheed Aircraft Corp. declared 50-cent-per-share dividend on 1,075,889 shares of capital stock of record June 18, payable July 2. This is the first dividend to be voted since mid-1946. Company paid \$1 in two instalments in '46-\$2 in 1945.

United States Plywood Corp. declared 25 cent regular quarterly dividend on common stock to holders of record July 1, payable July 12. Dividend of 93 cents on preferred stock is payable July 1 to holders of record June 18.

FOREIGN

Air India International inaugurated weekly service between Bombay and London using Lockheed Constellation aircraft. The government of India issued special air mail stamps to commemorate the event.

Iraqi Airways initiated weekly service between Baghdad, Damascus, Ankara and Istanbul using 24-passenger Vickers Viking aircraft.

AVIATION WEEK, June 21, 1948

The Birdmen's Perch

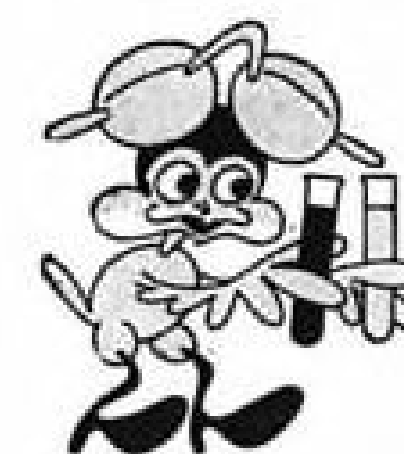
By Major Al Williams, ALIAS, "TATTERED WING TIPS,"
Gulf Aviation Products Manager, Gulf Bldg., Pittsburgh 30, Pa.



WE PRESENT

The world's finest oil for light aircraft engines!

It Frees Sticking Valves and Rings and Keeps Them Free Longer!



It took 6 years of experimental work—including over 100,000 hours of fleet service testing—to bring you Gulfpride Aviation Oil—Series D.

This super-lubricant is a fully detergent dispersent type with oxidation inhibitors and anti-foam agents, especially tailored for horizontally opposed engines.

Here's what that means:

No more worry from stuck valves or rings! (And if you've got any that are sticking now, Gulfpride Aviation—Series D—will unstick 'em... save you money on top overhauls!)

More hours between overhauls! (According to actual service tests by over 100 operators... save you money on major overhauls!)

Foreign matter cleaned from engine surfaces is kept separate and in suspension. It is flushed away at oil drains... so you've less wear and you save money by replacing fewer parts!

We're not predicting the above, we're telling you what's actually happened in service tests... telling what Gulfpride Aviation Oil—Series D—will do for your engine!

Remember, though, that Gulfpride Aviation Oil—Series D—is made expressly for horizontally opposed engines. For all other types, keep on using Gulf Aviation Oil or Gulfpride Motor.



For
**PRECISION ACCURACY,
GREAT STRENGTH AND**
absolute dependability



UNBRAKO
Reg. U. S. Pat. Off.

SOCKET SCREW PRODUCTS

The "Unbrako" Internal Wrenching Bolt (A), and the 100° Flush Head Socket Bolt (B), are practically a "must" in the Aviation Field... they so exactly meet the requirements of precision, tensile and other stringent requisites of Aviation Engineering.

And the other popularly acclaimed "Unbrako" Products, pictured to the right, have been proved throughout Industry for years as *absolutely dependable*.

Write for your copy of the informative and useful "Unbrako" Catalog of Socket Screw Products.

Ask us for the name and address of your nearest "Unbrako" and "Hallowell" Industrial Distributor.

Knurling of Socket Screws originated with "Unbrako" in 1934.

FLEXLOC

PAT'D AND PATS. PEND.

Regular and Thin "FLEXLOC"

"Won't Shake Loose"

A Self-Locking, All-Metal, One-Piece Nut. Every thread, including the locking threads, takes a full share of the load. Available in sizes #6 to 2" in diameter—millions in use.

OVER 45 YEARS IN BUSINESS

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA. BOX 566

BRANCHES BOSTON CHICAGO DETROIT INDIANAPOLIS ST. LOUIS SAN FRANCISCO

"UNBRAKO" SOCKET SET SCREW WITH KNURLED CUP POINT



"WON'T SHAKE LOOSE"

The Knurled Cup Point of this "Unbrako" makes it a Self-Locker, because the knurls screwed home tightly hold fast—even when subjected to the most chattering vibration.

PAT'D AND PATS. PEND.

"UNBRAKO" SOCKET SET SCREW WITH KNURLED THREADS



"WON'T SHAKE LOOSE"

The knurled threads make this screw a Self-Locker, too, for Flat, Cone, Oval, Half and Full Dog Points.

PAT'D AND PATS. PEND.

"UNBRAKO" KNURLED SOCKET HEAD CAP SCREW



The knurled head of this "Unbrako" provides a slip-and fumble-proof grip, though the fingers and head be ever so oily, therefore, it can be screwed-in faster and farther before it becomes necessary to use a wrench.

"HALLOWELL" KEY KIT



KITS: PATS. PEND.

You can't tighten or loosen screws without a hex socket wrench, so why not get our No. 25 or No. 50 "Hallowell" Hollow Handle Key Kit which contains most all hex bits.

AVIATION WEEK

Vol. 48, No. 25

June 21, 1948



Republic F-84 adds eight rockets to its six .50 calibre machine guns.

12 Companies Share Aircraft Program

USAF, Navy mark funds for 3366 aircraft; \$300 million still left in fiscal 1949 kitty.

By Robert Hotz

Funds to buy 3366 new military aircraft have been allocated by the Air Force and Navy out of their fiscal 1949 procurement funds.

Twelve major aircraft manufacturers will participate in the military production program.

Air Force has allocated \$1,345,165,000 for 2201 aircraft while the Navy plans to spend \$653,635,000 for 1165 new planes. Approximately \$300,000,000 in fiscal 1949 procurement funds voted by Congress have not been allocated. These funds have been temporarily withheld by Defense Secretary Forrestal pending a review of the aircraft procurement program by President Truman in September. Final disposition of the \$300,000,000 is expected to be made after this review is completed.

► **North American Plums**—North American Aviation, Inc., of Inglewood, Calif. emerged from the current procurement list with the largest of the military plums.

Biggest North American order was for 451 additional F-86 swept-wing jet fighters, bringing the company's total backlog on this plane to 676. This is the plane whose experimental version the XF-86 has already exhibited suc-

cessful supersonic characteristics (AVIATION WEEK June 14). Production model F-86A will be powered by a General Electric J-47 jet engine offering a 30 percent power increase over the XF-86. New orders are for 333 F-86As and 118 F-86Cs.

North American also got an order for 266 new training planes (T-28) as a

Air Force has ordered three more XS-1 type rocket research planes from Bell Aircraft Corp., of Buffalo. Lieut. Gen. Howard (Pinky) Craig, Air Force Deputy Chief of Staff for Materiel confirmed the new Bell XS-1 order last week and added that the XS-2 also being built for the Air Force by Bell "is still a long way off".

The three new XS-1 models will differ from the original trio principally in the fuel system. Pressurized nitrogen fuel system on the early models will be replaced by a more efficient turbo-pump system. Plane was originally designed to take the turbo-pumps but they were not available when the airplanes were completed.

result of winning a design competition over 12 other manufacturers. Another increment of 51 B-45Cs has been added to North American's current backlog of 135 for the four-jet bomber.

Other companies high on the procurement schedules were Grumman Aircraft & Engineering Corp., Lockheed Aircraft Corp. and Douglas Aircraft Co.

Douglas was listed for 356 Navy AD-2 attack planes, 28 F3D twin jet Navy fighters and 28 Air Force C-124A, new version of the C-74.

► **Lockheed Orders** — Lockheed will build 457 F-80C, the latest versions of the Shooting Star powered by the Allison "400" jet engine; 128 TF-80S, a two-seater jet trainer and 82 advanced model P2Vs, Navy twin engine patrol bomber.

Grumman is scheduled for 317 Navy F9F jet fighters to be powered by Pratt & Whitney-built Nene and the Allison J-33 jet engines. Air Force has ordered 32 SA-16As and the Navy six JR2Fs, Grumman Albatross amphibians and 23 AF-1, piston engine search planes.

Other service orders include:
• **Boeing Airplane Co.:** 132 B-50D and 30 B-50C. Air Secretary Symington explained this as caused by the fact that the B-50C is actually a later model with superior performance than the D. Symington indicated that Boeing's XB-47 was a more advanced aircraft than those on the 1949 schedule and hinted broadly that the B-47 would go into production with fiscal 1950

funds. Boeing is already preparing one of its Wichita plants to accommodate a B-47 production line.

- **Northrop Aircraft Inc.:** 30 eight-jet Flying Wings (B-49). This is the first Air Force production order for flying type aircraft. Earlier order for 13 reciprocating and two jet model Flying Wings was a service test order.

- **Curtiss-Wright Corp.:** 58 F-87, twin jet all-weather fighters and 30 RF-87A, a photo reconnaissance version of the F-87. Prototype of this plane was built and flown with four Westinghouse 24C jet engines but has been redesigned to take two GE-Allison J-33 jet engines. Curtiss recently received \$1,500,000 from the Air Force to tool up its Columbus, Ohio plant for F-87 production to begin in 1949.

- **Republic Aviation Corp.:** 409 Thunderjet (F-84C) Air Force jet fighters.
- **Fairchild Airplane & Engine Corp.:** 99 C-119B for the Air Force and 8 Navy versions of the same plane (R4Q). This is the improved version of Fairchild's C-82 Packet, now standard equipment for Army troop carrier groups.

- **McDonnell Aircraft Corp.:** 179 twin jet Banshee (F2H) Navy jet fighters.

- **Chance Vought division of United Aircraft Corp.:** 33 Navy jet fighters (F6U) and 19 F7U, a tailless, twin jet Navy fighter with rocket boost power.

- **Glenn Martin Co.:** 47 Maulers (AM-1) a Navy attack plane.

- **Sikorsky Division of United Aircraft** got the only helicopter orders: 19 HJS and 18 HO3s, all for the Navy.

Navy still has 30 aircraft for which manufacturers have not been picked.

Major manufacturers missing from the 1949 procurement schedules were Bell Aircraft, builder of the XS-1, first supersonic aircraft; Convair and Ryan.

Symington said the Air Force had reached a decision not to spend any more money on Convair's B-36 project for which 100 of the giant six engine bombers were originally ordered. Any new improvements in the B-36 will come out of funds already authorized for the production program. Thus the more modifications made, the fewer bombers that will be built.

Symington said that the Convair order now stands officially at 95 but informed Air Force officials at lower echelons indicated cost of modifications would soon cut the production program back to about 60 planes.

- **Transport Fight**—Another question not settled by the procurement schedules is the hot fight being waged between Martin and Convair over an Air Force order for a twin-engine trainer. Both the Martin 202 and the Convair-Liner have been under consideration for a \$35,000,000 order. Last week Martin appeared to have a performance edge and a sizable monetary

Navy Lockheed P2V



USAF C-124 . . .



margin over the Convair-Liner entry.

However, funds for this order will have to come from the \$197,000,000 in Air Force procurement money frozen by Forrestal's ruling or be deferred until the fiscal 1950 appropriation.

Symington indicated that all cuts in the Air Force program caused by withholding the \$197,000,000 had been made on the end of production programs listed in the procurement schedule and would not affect production until the end of the 1950 calendar year.

Bulk of the aircraft on the current schedule will be delivered during 1950.

Manufacturers not receiving aircraft contracts can count on sizable subcontracting business for sub-assemblies from prime contractors, according to Symington. This is necessary despite the resultant cost increases, he said, to preserve a sufficiently broad industrial base to meet military emergency needs.

. . . and new details

Here are some details on the new Douglas C-124A, of which the Air Force has ordered 28 in its new procurement program.

Derived from the C-74 design, the craft will use the C-74 wing and empennage, and 3500 hp. Pratt and Whitney R-4360-49 Wasp Major engines. The plane will have a gross weight of 175,000 lb. and will carry a maximum payload of 50,000 lb. 1200 miles and return without refueling.

Air Force will use it to carry bulldozers, tanks, field guns. Quick modification will give two decks for 222 troops and field equipment or hospital transport for 123 litter patients. 35 ambulatory and 15 nurses.

Wing span will be 173 ft. 3 in., length 127 ft. 2 in., and height 48 ft. 3 in. Propellers will be Hamilton Standard fourblade.

Symington Confirms XS-1 Story

By Robert McLaren

AVIATION WEEK's exclusive story on the first supersonic flights by piloted aircraft last Dec. 22 was officially confirmed by the U. S. Air Force last week.

Air Secretary Stuart Symington broke a six month's Air Force silence on AVIATION WEEK's story at a press conference called "for the basic reason" of confirming the first piloted supersonic flights by the Bell XS-1, rocket powered research plane.

- **Basic Facts Confirmed**—Symington confirmed all the basic facts in AVIATION WEEK's original story. These facts included:

- "The Bell XS-1 has flown faster than the speed of sound."

- "First piloted flight through the transonic zone was made by Capt. Charles Yeager of the U. S. Air Force more than a month ago." First supersonic flight was on Oct. 14, 1947.

- "All of these supersonic flights have been made at the Air Force's Muroc Calif. Desert Flight Test Center."

Symington originally denied AVIATION WEEK's statement that two other pilots, the late Howard Lilly and Herbert H. Hoover, had also flown faster than Mach 1. Both were test pilots for the National Advisory Committee for Aeronautics. Later NACA officials confirmed the fact that Lilly and Hoover had made many supersonic flights. Air Force followed NACA's announcement with admission that two other Air Force pilots had made supersonic flights in the XS-1. They are Maj. Gus Lundquist and Capt. James Fitz-Gerald, both Wright Field test pilots.

- **Shun Records**—No new speed or altitude records will be claimed by the Air Force for the supersonic flights because to do so would require publication of the speeds and altitudes reached. This the Air Force refuses to do on grounds of military secrecy.

Symington said the top speed reached by the XS-1 was a "very interesting figure." AVIATION WEEK said in its Dec. 22 story that new speed and altitude records were set. Confirmation of the fact that extreme altitudes were reached came from NACA Chairman Hugh L. Dryden, who told a press conference that the unusual altitudes at which the supersonic flights were made were a key to their success. Similar performances are not yet possible at conventional altitudes, Dryden said.

- **Joint Program** — The supersonic flights were made as part of a joint Air Force-Navy-NACA high speed flight research program. Both the Air Force and NACA have a Bell XS-1

plane. Third plane made by Bell has been cannibalized to keep the other two models flying.

Both the Air Force and NACA planes have suffered minor accidents (mostly groundloops due to the high landing speed and narrow landing gear) and minor malfunctions of equipment.

The XS-1 was the first of a series of high speed flight research planes designed by NACA, procured by the Air Force and Navy and flown jointly by service and NACA pilots. Subsequent planes built under this program were the Douglas D-558-1 Skyrocket and the D-558-2, Skyrocket.

Air Force is flying its XS-1 in an accelerated test designed to investigate maximum speed, altitudes and structural capabilities of the plane while NACA is conducting a more exhaustive program to provide detailed data on all phases of the transonic range. Air Force and NACA use the same Boeing B-29 at Muroc for air launching their XS-1s.

- **No German Copy**—Both the Air Force and NACA specifically denied a New York Herald Tribune story quoting a "top Air Force official" as saying the XS-1 was merely an improved copy

of a German rocket fighter that had been brought to the United States late in 1945.

The basic design of the aircraft was completed in the spring of 1944. Contract for the XS-1 was awarded to Bell Aircraft Corp., before the end of the European war in May 1945. Dr. Dryden said that there was no evidence the Germans had achieved supersonic flight and that Capt. Yeager was unquestionably the first pilot to successfully fly past Mach 1.

- **Air Force Denials**—Final Air Force confirmation of the AVIATION WEEK supersonic story follows some six months of investigation by the Federal Bureau of Investigation of this magazine and its news sources. Throughout that period the Air Force had first denied, then refused comment on the accuracy of the article. On Dec. 22, Colonel S. A. Gilkie, Muroc Air Force base commanding officer, was quoted by the United Press:

"There is no foundation to the rumor. I knew nothing about it in advance of this story. It was a big surprise to me because if it had happened I would have known about it. I have since checked Wright Field and they tell me there is nothing to it and that if there had been, I would have been notified."

The Associated Press also quoted

Capt. Yeager's Story

Capt. Charles E. Yeager, first pilot to fly faster than the speed of sound, declined detailed comment on his pioneer supersonic flight in the Bell XS-1 in an Air Force official interview with members of the press. Yeager described his experience as: "It felt swell!" Pressed by newsmen, he admitted that he was "scared" but that the acceleration through sonic speed was a "pretty good feeling" because of the knowledge that he was the first man to accomplish the feat.

The flight began at 30-35,000 ft. when he was cut loose from the Boeing B-29 "mother" plane over Muroc on Oct. 14, 1947. He would not confirm the flight was made in a steep climb to very high altitude.

After exhausting his fuel he decelerated very rapidly back through Mach number 1.0 and glided to earth at about 400 mph. He landed at about 160 mph. and rolled about 2½ miles across the desert before coming to a stop.

Shortly before his appearance at the conference, Capt. Yeager was presented with the Air Force Mackay Trophy and an Oak Leaf Cluster to his Distinguished Flying Cross. The Air Medal was also awarded to the late Howard C. Lilly and to Herbert H. Hoover, the two NACA pilots who subsequently exceeded the speed of sound in the XS-1. Air Medals were also awarded to Maj. G. E. Lundquist and Capt. J. T. Fitzgerald, Air Force pilots who have flown the XS-1 to supersonic speed.

Dr. Hugh L. Dryden, NACA Director of Aeronautical Research, present at the conference, stated: "The XS-1 is a small research airplane, flown at high speed at high altitude where the air loads on the structure are small. Between it and tactically useful military aircraft of larger size flying at lower altitude where the air loads are much greater there remains much research and development on many difficult problems."

Gilkie as saying: "It sounds to me like another flying saucer story."

Gilkie was commanding officer of Muroc at the time of the first supersonic flight in October and during the subsequent flights by both Air Force and NACA test pilots. He still holds the post.

► **Silence Broken**—Symington said he was breaking the Air Force's long silence on the XS-1 because of a recent announcement by Atty. Gen. Tom Clark that publication of AVIATION WEEK's Dec. 22 story did not violate any Federal law. Clark also pointed out that there was no evidence of any attempt by AVIATION WEEK to aid a foreign government or damage the United States.

Admitting that military classification does not have the force of law in peacetime outside the military establishment, Symington maintained that there are certain justifiable reasons for its observance and asked for continued co-operation from public media.

Clark's announcement was in turn stimulated by a recent statement by Air Force public relations director Stephen Leo that any further word on the XS-1 would have to come from the Justice Department.

Low Accident Rate

Aircraft manufacturing had the fifth lowest accident frequency record for 1947, according to a report on industrial injury rates issued by the National Safety Council.



Mercator Order Increased

Navy has ordered twelve more Martin P4M-1 Mercator search planes, bringing total quantity to 19. Two prototype XP4M-1s are undergoing flight test and seven production models are on the Martin assembly line, scheduled for delivery beginning summer,

Flight Training Fight Continues In Senate

The veteran should be the judge as to whether the flight training he is seeking will be of use in his present or future business occupation, the Senate Appropriations Committee was told in hearings last week.

Testifying were representatives of veterans and aviation groups, seeking to "tighten up" a House amendment to the supplemental appropriation bill.

Clarence Cornish, Indiana Aeronautics Director, and president of NASAO, told the Senate committee that the intention of Congress would be accomplished if the amendment read as follows: "Education or training for the purpose of teaching a veteran to fly and related aviation courses, shall not be considered avocational or recreational when the veteran certifies that he has selected aviation education or training for use in connection with his existing or contemplated business, occupation or education."

► **Legion Stand**—Thomas Walsh, Michigan member of the American Legion Aeronautics and Legislative Committees, read to the Senate committee the Legion's stand supporting GI flight training.

Sen. C. W. Brooks (R., Ill.) member of the committee, voiced his support of the proposed revision, and at press time it was scheduled to be taken up soon in conference. Other aviation spokesmen at the Senate appropriations

hearing included: Capt. Maxwell W. Balfour, Tulsa, president of Aeronautical Training Society; Art Curry, Galesburg, Ill., president of Illinois Airport Operators Association; John E. Wilson, Northbrook, Ill., NATA vice president for aviation training.

It was urged that by including the specific provision that the veteran certify his own flight training as occupational training, the amendment would lessen the possibility of sabotaging the flight training program by hostile VA officials.

(For story on earlier House action on amendment see Sales and Service section, page 37.)

Hughes-Brewster Feud

The smouldering Hughes-Brewster tiff flared into the open again last week.

In a lengthy speech on the Senate floor, Maine's GOP Sen. Owen Brewster rehearsed his side of the highly controversial record of the now defunct Senate War Investigating Committee's probe of Howard Hughes' \$40,000,000 war contracts. This probe touched off TWA-owner Hughes' charge that Brewster used his senatorial post to promote Pan Am interests.

Hughes responded by offering Brewster a \$300-a-week job as an actor with RKO studios.

"This is twice the usual starting salary," he wrote the Maine Senator, "but you are no amateur; your ability as an actor has been well demonstrated. Also, you are the perfect type for some parts I have in mind."

Airline Probe

Investigating subcommittee of the Senate Committee on Expenditures in Executive Departments will launch into hearings on airline "subsidies" after the political conventions.

Cautious Sen. Homer Ferguson (R., Mich.) subcommittee head, told AVIATION WEEK his "present thought" is to hold public hearings. "But we're going to complete a very thorough investigation first."

The subcommittee is tracking down allegations of political influence in CAB route and mail pay decisions. Ferguson has already announced circumstances surrounding Braniff Airway's South American route award are being scrutinized.

Braniff Dispute Settled

Air Line Dispatchers Association's salary dispute with Braniff Airways was settled following ALDA's appeal to the National Mediation Board. Proceedings resulted in a wage-scale settlement ranging from \$350 per month for the first year to \$500 for the seventh.



Howard S. Cullman (left), chairman of Port of New York Authority; Thomas K. Finletter, planning board chairman; Grover

Whalen, chairman of the Mayor's committee for commemoration of New York City's 50th anniversary at New York International.

New York Air Show Taking Shape

Exhibitors next week draw for space in 65,000 sq. ft. covered area along runway at new Idlewild field.

With participation by several leading manufacturers already assured, the International Air Exposition at New York, July 31-Aug. 8, has signs of being the first large-scale industry show in nearly two years.

Extent of the aviation industry's participation is expected to become clearer next week. Drawing will be held June 30 for space in the 65,000-sq. ft. exhibit area stretching more than 4000 ft. along Runway E at New York International Airport (Idlewild).

► **Companies Present**—Among the companies that have signified their intentions to take space: Bendix Aviation, General Electric, Fairchild, Bell Aircraft, United Aircraft, Curtiss-Wright, Douglas, Hughes, Piper, Texas Engineering, Cessna, Luscombe, Stinson, Engineering & Research.

Those companies, and others expected to participate, pay \$3.00 a sq.

ft. for space ranging upward from a 14 ft. by 10 ft. section. After several not entirely satisfactory experiences with industry shows, the aviation industry this time is studying closely an exposition set-up that has several appealing features:

• **Sponsorship**—The City of New York, which is staging the show in conjunction with the celebration of the Golden Anniversary of the formation of Greater New York City from the five boroughs.

• **Financing**—A total of \$200,000, half from the city, half from the Port of New York Authority (operator of Idlewild).

• **Transportation**—Located 40 minutes from the center of New York City by 10-cent subway and 5- or 10-cent bus from the end of the subway line direct to the exposition. Between 500 and 700 buses are available for this shuttle service, and the promise is to run buses

"every few minutes." The parking space will accommodate 12,000 cars.

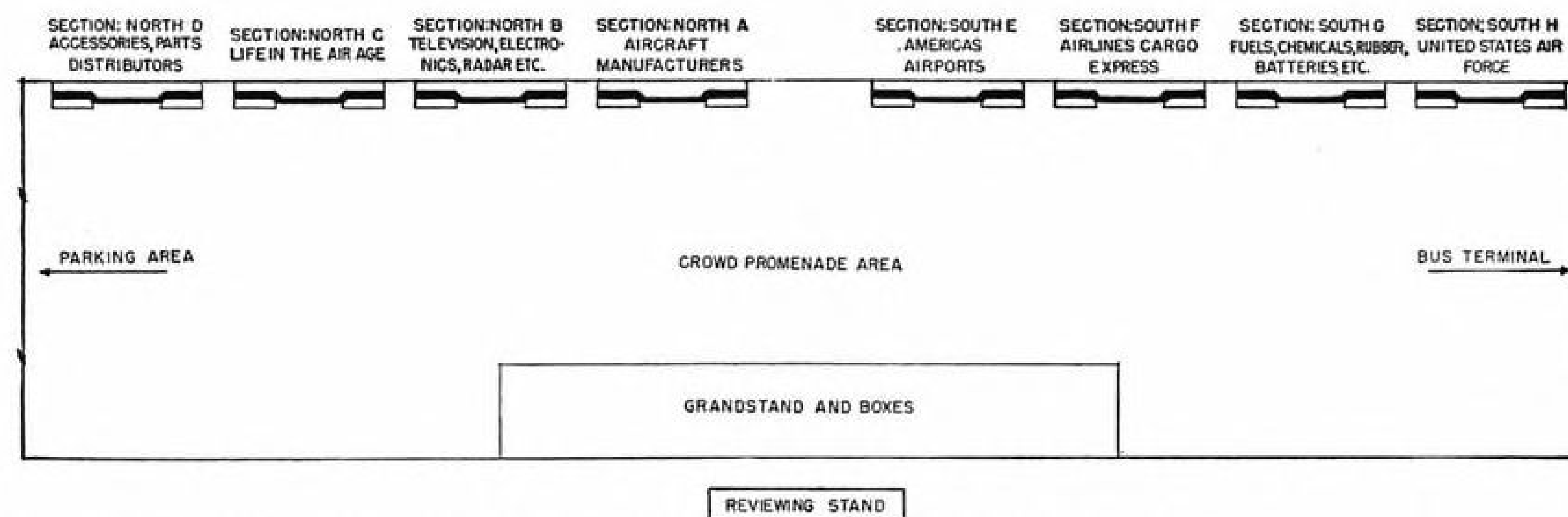
The exposition area will open to the public at 11:00 a.m. and close at 7:00 p.m. One purpose of this arrangement is to allow exhibitors time to get set for crowds in the morning without getting up at the break of dawn, and to give them evenings free for association meetings and other trade activities.

► **Cost**—What it will cost a company overall to participate in the nine-day show is difficult to figure. Hotel rooms in New York during the exposition period are expected to be readily available, at rates generally standard in any large city. Show officials say that usually the exhibit space at a show of this type runs about 12-15 percent of the total cost of participation.

Exposition officials are claiming it will be largest and most extensive air exposition ever held. It will be opened with the "President's Day" during which President Truman is expected to review the greatest number of Air Force and Navy planes ever assembled at one spot in peace time. British Navy and Royal Air Force planes will participate, with the RAF showing its jet-powered Vampires for the first time in the U. S.

• **Officials**—Active head of the International Air Exposition is Thomas K. Finletter, lately chairman of the President's Air Policy Commission. He is backed up on the planning board and board of exhibitors by representatives of the aviation industry. A professional show staff is directed by Tom Compere and Robert Emerson, director of exhibits.

The exposition is sanctioned by the Aeronautical Show Council, which comprises representatives of the principal segments of the industry. Aircraft Industries Association, while not participating as an organization, has raised no objection to individual company activity. Extent of airline participation is unsettled with major airlines still negotiating with the Port Authority for use of Idlewild.



LAYOUT OF SHOW: "World of Flight" exhibit of International Air Show stretches more than 4000 ft. along north-south runway.

ALPA Suit

Air Line Pilots Association (AFL) has carried its fight against a half-million dollar CAB mail pay increase for National Airlines to the U. S. Supreme Court in a petition asking review of a lower court decision. ALPA, acting for striking National Airlines' pilots, opposed the mail pay increase before CAB, and later before the U. S. Circuit Court of Appeals, alleging that it was government subsidization of strike-breaking. CAB denied the union the status of an intervenor, and later the Circuit Court of Appeals dismissed an appeal for review of the CAB action. The increase went to National Airlines with the dismissal.

AVIATION CALENDAR

June 21-25—American Standards Association seminar by Dr. John Gaillard, Engineering Societies Building, New York.
June 21-25—1948 annual meeting, American Society for Testing Materials, Detroit.
June 22-23—Annual Ohio State Aviation Clinic, Bowling Green.
June 27-30—Annual convention, National Aeronautic Association, Hotel Radisson, Minneapolis, Minn.
June 30-July 11—National Soaring Contest, Elmira, N. Y.
July 2-9—Second National Air Tour Week, United Pilots and Merchants Association.
July 4-5—Annual National Air Show, Port Columbus, Columbus, Ohio.
July 6-7—National Association of State Aviation Officials, Committee and Directors, Colorado Springs, Colo.
July 8-9—N. Y. State Aviation Council Semi-Annual Meeting, Mark Twain Hotel, Elmira, N. Y.
July 13—ICAO North Pacific regional meeting, Honolulu or Vancouver.
July 15-16—Institute of Aeronautical Sciences, annual summer meeting and dinner, Hotel Ambassador, Los Angeles.
July 16-24—Airport construction equipment display, American Road Builders Association, Soldiers Field, Chicago.
July 17-18—National Trading Day and All-Dixie Air Show, Chattanooga, Tenn.
July 19-31—International Sallplane contest, Samaden, Switzerland, open to U. S. contestants through National Aeronautic Association.
July 23—AIA Personal Aircraft Council Meeting, Detroit, Mich.
July 26-27—California Aviation Trades Assn. annual state convention, San Diego, Calif.
July 31-Aug. 8—International Air Exposition, New York International Airport (Idlewild), N. Y.
Aug. 18-20—Society of Automotive Engineers, West Coast Meeting, St. Francis Hotel, San Francisco.
Aug. 26-27—International Wakefield Trophy Model Airplane Meet, Akron, Ohio.
Sept. 4-6—National Air Races, Cleveland.
Sept. 5-11—Seventh International Congress of Applied Mechanics, Imperial College of Science and Technology, South Kensington, London, England.
Sept. 13-17—National Instrument Conference, Instrument Society of America, Convention Hall, Philadelphia.
Sept. 19-21—Twelfth International Convention, Northwest Aviation Planning Council, Vancouver, B. C.
Oct. 6-8—National Association of State Aviation Officials, Copley Plaza, Boston.
Oct. 6-9—Society of Automotive Engineers aeronautic meeting, Biltmore Hotel, Los Angeles.
Oct. 17-21—National Aviation Clinic, Detroit.
Oct. 21-22—Society of Automotive Engineers production meeting, Statler Hotel, Cleveland, Ohio.
Oct. 22-23—4th Annual Arizona Aviation Conference, sponsored by Chamber of Commerce, Prescott, Ariz.
Nov. 4-5—Society of Automotive Engineers, fuels and lubricants meeting, Mayo Hotel, Tulsa, Okla.
Nov. 8-10—Aircraft Distributors and Manufacturers Association, St. Louis, Mo.

INDUSTRY OBSERVER

►USAF plans to spend \$10,000,000 for 15 all-metal cargo gliders made by the Chase Aircraft Co., Trenton, N. J. Ten CG-18As with a cargo capacity of 8000 lb. and 5 CG-20s with a 16,000 lb. payload are on the current procurement schedule. The all-metal gliders are planned to support paratroop operations. CG-18 can carry 105 mm. howitzer and a 1½ ton truck while the CG-20 is designed for the 155 mm. howitzer and 2½ ton truck.

►Storage of machine tools will be continued by USAF during 1949 aimed at a build-up to 40,000 machine tools by June 30, 1949. Total of 28,000 tools are now in storage with 12,000 scheduled for shipment to storage pools during the next year.

►Martin JRM-2, last production Mars and powered by four Pratt & Whitney R-4360 Wasp Major engines, was delivered to MATS in a 15 hr. 38 min. non-stop flight from Patuxent Naval Air Station to Alameda (Calif.) Naval Air Station. Named the "Caroline Mars", the huge ship is now in service with VR-2 on the Alameda-Honolulu run. The increased payload and performance of the JRM-2 was long-sought by Rear Admiral J. W. Reeves, jr., during his tour as NATS head.

►Ford Motor Co. has taken delivery of a Douglas A-26 Invader converted to a luxury executive transport by Grand Central Airport Co., Glendale, Calif. The former bomber is painted royal blue and light grey with cream trim and seats eight on divan type seats with buffet, work table, plane-to-ground radio-telephone and other facilities for Ford executives. Fuel capacity has been increased, and latest radio navigational aids are installed. It is being flown by Paul J. Kaniot, Ford chief pilot.

►John Houser, Cal-Aero engineering student, is building a new racer incorporating sweep-forward wing for the National Air Races in September. The Goodyear-type racer has a span of 18 ft. and is 15 ft. 10 in. long. Mike Argander, also a Cal-Aero student, is rebuilding his 1947 National Air Race entrant with new wing and fuselage.

►Grand Central Airport Co. is nearing completion on its luxury conversion of a Convair-Liner for Jorge Pasquale, Mexican baseball czar.

►Crash of the YB-49 Flying Wing jet bomber on Mojave Desert gives industry and military a prime object lesson in the need for observing all flights of experimental aircraft, especially one as important as the jet Wing. Northrop's big Wings had been flying two years without destructive accident. Both XB-35 and YB-49, propeller and jet models, had passed through Phase I tests, and USAF took over to fly Phase II. Normal procedure called for presence nearby of an observation escort plane during an experimental flight.

On day of crash, YB-49 was allowed to leave Muroc Air Base without an escort. As result only one person saw the Wing fall—a motoring civilian whose eyewitness description of an "explosion and fire" may have to be discounted in final analysis. Northrop engineers are convinced that had an escort been in the air they would have by now the story of what probably happened. Any current attempt to evaluate the crash would be conjectural. One possibility—that the Wing was allowed to accelerate to a high Mach number beyond limits tentatively set for loads and control.

►Manufacturers are still baffled over military security confusion. For weeks Douglas has had ready for release photos of the F3D two-man twin-jet Navy long-range fighter. Although it is flying and widely observed, Navy has refused release of configuration photos. Boeing was allowed to publicize photos of dramatic JATO take-off climb of XB-47 sweptwing jet bomber. But when North American presented for publicity clearance photos of acid-aniline rocket assisted take-off of its B-45 jet bomber USAF replied with a flat "no". North American recently was allowed by Navy to announce that it is tooling up for a new production plane, but had to leave open to speculation whether the plane referred to might be the Navy's XAJ-1 anti-submarine jet search plane.

ENGINEERING & PRODUCTION

Quarterly Backlog Report Studied

In attempt to present clearer picture of manufacturing activity, government and industry propose new system.

Government and industry once again are studying the best way to keep abreast of sales progress in the manufacturing industry.

A proposed quarterly form for reporting both civilian and military backlog, sales and inventory has been circulated by the Bureau of the Census (for itself and the Budget Bureau) and comments were due last week. If accepted, the form will be a new attempt to present accurate information on the fast-shifting tides of the aeronautical manufacturing business.

At the same time, the Census Bureau's regular monthly report is undergoing further refinement. Only value of figures given will be for shipments to other than U. S. military customers. This data was omitted from the airframe section of the monthly reports beginning in January, although it since has been reported for engines. The revised monthly report, M42A (M42C for engines), will be used for the first time in reporting June business.

A new form probably will be added to round up annually the value of shipments and value of work done.

►Puzzlers—Most of these changes in the method of reporting manufacturing data are inspired by the desire of both government and industry to make more accurate information available. That means untangling the twin puzzlers of military payments and backlogs.

The payments received by a military contractor in any given period have seldom if ever had any relation to work produced or delivered. Both government and industry officials recognized that these figures give an erroneous impression of the state of the manufacturing industry (AVIATION WEEK, Apr. 19).

The industry proposed at one point that the military payments be listed as "Advance and progress payments against backlog." But this still would not give a correct measurement of work done.

One way in which this difficulty may be overcome in the new quarterly report is by showing changes in inventory during the three-month period. This figure, combined with sales, and the all-important calculation of back-

log, would for the first time give a true picture of manufacturing progress.

►What Is Backlog?—The backlog situation is complicated by many factors—and the new Air Force and Navy orders likely will increase the complication. Another confusing factor that the Census Bureau turned up in examining the reporting procedures is the fact that there are two concepts of backlogs. One embraces orders that have not yet been entered as sales on company books (some companies report as sales only the value of goods delivered). The other lists as backlog the value of products not yet completed.

As the Census Bureau somewhat ruefully stated in circulating its proposed new quarterly form, "It is ap-

parent that the (present) forms have not provided either the government or the industry with satisfactory statistics on the dollar value of backlog."

This, it is hoped, the quarterly form will do.

►Definition—It makes a good start by trying to iron out the conflict in what is a backlog. Taking the industry's recommendation, the Census Bureau defines a backlog as "that portion of orders that have not yet passed through the sales account." The report states precisely what type of sales shall be included as "new orders" for purpose of computing backlog changes.

One of the major weaknesses of the former monthly figures reported as backlogs (in addition to the varying concepts of backlog) was the fact that a single month cannot be representative of the industry's activity. A quarterly report, it is felt, will provide a long enough period for the monthly figures to even out.

The proposed quarterly reporting system, while new in the manner it is being utilized, is merely an extension of a monthly report all industry has to file. So industry and government officials believe it will not add any accounting burden to the manufacturers.

Production Progress Report

AIRCRAFT	Personal Type	Transport Type	Military	Total			
Month	Nos.	Value	Nos.	Value*			
January.....	458	\$2,055,755	13	\$2,498,533	140	611	\$9,326,677
February.....	453	2,148,200	14	2,994,084	155	622	10,188,587
March.....	571	2,522,326	14	4,645,975	278	863	11,775,670
Total.....	1482	\$6,726,281	41	\$10,138,592	569	2096	\$31,290,934
ENGINES	Civil	Military	Total				
Month	Nos	Value	Nos.	Value**	Nos.	Value***	
January.....	779	\$4,721,385	287	\$18,885,879	1066	\$23,675,922	
February.....	1007	5,380,545	355	20,504,714	1362	25,958,747	
March.....	1093	5,174,775	379	24,893,251	1472	30,157,553	
Total.....	2879	\$15,276,705	1021	\$64,283,844	3900	\$79,792,222	

* Does not include value of military shipments, but includes aircraft parts and conversions.

** Value represents all payments from military during month, whether or not for engines delivered.

*** Includes parts.

Figures from "Facts for Industry," Bureau of the Census.

PERSONAL AIRCRAFT

Company	Nos.	April Value	Nos.	Jan.-April Value
Aerona.....	85	\$257,000	258	\$659,000
Beech.....	69	532,000	261	1,998,000
Bellanca.....	3	15,000	13	65,000
Cessna.....	150	522,000	450	1,492,000
Eng. & Res.....	11	30,000	39	103,000
Fairchild.....	6	24,000	25	115,000
Luscombe.....	63	129,000	223	550,000
Piper.....	187	306,000	381	679,000
Republic.....	N.A.	N.A.	6	26,000
Ryan.....	53	348,000	154	1,003,000
Stinson.....	82	418,000	379	1,851,000
Taylorcraft.....	8	14,000	24	44,000
Texas Engineering.....	26	83,000	94	287,000
Total.....	743	\$2,678,000	2310	\$8,872,000

Figures as reported to Aircraft Industries Association.

Personnel Changes At Curtiss-Wright

Curtiss-Wright Corp. elected as vice president C. C. Pearson, former general manager of the company's airplane division. Active in aviation for 18 yr., Pearson once was an executive of the Douglas Aircraft Co.

William C. Jordan, who will succeed him as general manager, was vice president and general manager of the Steel Products Engineering Co. at Springfield, Ohio.

• In other personnel actions:

Elastic Stop Nut Corp. of America appointed Bruce F. Linck sales promotion manager. Linck, who has been with ESNA since 1943, managed the company's Detroit sales office and more recently acted as assistant to the general sales manager.

Fairchild Engine & Airplane Corp. named George F. Chapline and Turner A. Sims vice presidents. Chapline is general manager of the Ranger Aircraft Engines division. Sims is general manager of the Fairchild-NEPA project at Oak Ridge. All other officers of the corporation were re-elected.

General Electric Co. made the following appointments: H. Arthur Howe, manufacturing manager of the company's compound division; David B. Folkerth, chemical department district representative at the Pittsburgh office; Frank E. Gollher, production supervisor of the plastics division; and Charles W. Bentley, assistant to the manager of the Decatur, Ill., plastics molding plant.

Jack & Heintz Precision Industries, Inc., named John K. McNeely and Walter Koelliker engineers of the company's special aviation projects section. McNeely was at one time electrical engineering group supervisor at Lockheed Aircraft Corp., and Koelliker was wartime commanding officer of the USAF detachment at Sperry Gyroscope Co.

Lockheed Aircraft Service, Inc., appointed Sanford Willis, formerly with CAA superintendent, J. W. Clutter and George C. Stewart were appointed western and eastern sales managers, respectively.

Minneapolis-Honeywell Regulator Co. made David J. MacDonald chief of services of the company's aeronautical division. Former radio electrician for the U. S. Bureau of Air Commerce, MacDonald also served with the Air Materiel Command at Wright Field.

Ryan Wage Offer

For six months ending Apr. 30 Ryan Aeronautical Corp. operated in the black, netting \$83,869 and \$50,410 before and after taxes.

Net was slightly less than 1½ percent on \$3,415,885 of gross sales for the half-year, and showed a moderate trend toward recovery from last year's fiscal net loss of \$127,600.

Ryan used the six months report in seeking to avert a UAW-CIO strike. Company cited narrow margin of net and accompanied it with a proposal of a 6-cents per hr. wage increase plus 80 hr. vacation with pay and six paid holidays. Management estimated that its offer to the union represented, in effect, an 8-cents wage boost. Proposal was given as the company's "final offer" prior to the June 16 strike deadline.

BRIEFING PRODUCTION NEWS

B. F. Goodrich Co. is in production on aircraft hydraulic hose designed for 3000 psi. hydraulic systems. The hose has withstood test pressures of more than 4500 psi. Special steel wire used in its construction has a tensile strength of more than 400,000 psi.

Sperry Gyroscope Co. is flying its demonstration Douglas DC-3 on a tour of 11 cities to display the new Perry engine analyzer and other aeronautical instruments. The tour began June 1. Stops are being made at Detroit, St. Louis, Wichita, Tulsa, Dallas, Houston, New Orleans, Memphis, Shreveport, Atlanta and Miami before return to the Long Island plant in July. Flight demonstrations are being arranged by Sperry district offices for these cities.

Pressite Engineering Co., St. Louis, manufacturers of aircraft sealing materials, has opened new sales offices in the Times Medical Building, Philadelphia, and at 5960 Willowcrest Ave., North Hollywood, Calif.

Buffalo Aeronautical Corp. has opened its new \$80,000 parts and accessories department in Hangar 5 at Buffalo Airport. The new department doubles the company's working space.

Skinner Engine Co., Erie, Pa., has been purchased by the Cincinnati Time Recorder Co. and its facilities will be converted to the production of aircraft landing gears and struts for the Cleveland Pneumatic Tool Co., a subsidiary.

Texas Engineering and Manufacturing Co. has received a \$2,500,000 order from the Air Force for the complete overhaul of 45 Douglas C-54 Skymaster transports. The TEMCO bid was entered against Douglas Aircraft Co., Lockheed Aircraft Corp., Grand Central Aircraft Service and Aviation Maintenance Corp. The new order increases the TEMCO backlog to \$6,000,000 and will require the addition of 500 employees in the next few weeks to complete the program by March, 1949.

Other TEMCO activities include a Martin 202 modification program for Northwest Airlines, a continuing overhaul program for aircraft of the Brazilian Government, the manufacture of sub-assemblies for the Fairchild C-82 packet and the Convair B-36 and the production of the Swift 125 personal airplane.

United Aircraft Corp. has completed soundproofing of its 18-ft. wind tunnel at East Hartford, Conn., and tests indicate a reduction of 20 decibels in the noise level of the facility. Tests in nearby neighborhood revealed that the sound level is increased only two decibels. The soundproofing equipment includes phenol-bonded Fiberglas baffles and wall panels inside the air-intake and air-exhaust towers.

Frontier Aircraft Corp., Buffalo, has completed its initial facilities program for the development of all-magnesium parts for noncombat aircraft. It has submitted a new training plane design to the Air Force.

Curtiss-Wright-Columbus has received \$500,000,000 Air Force contract for the production of aluminum wing-tip fuel tanks. C-W is currently producing aluminum tip tanks under a Navy contract and recently delivered tank No. 10,000. A previous production quantity of steel tanks was completed last year. The new contract will not require additional personnel other than the transfer of about 50 workers from other departments of the Columbus plant.

Allen B. Dumont Laboratories, Inc. has purchased for \$1,700,000 the government-owned plant operated during the war by Wright Aeronautical Corp. at East Patterson, N. J. The facilities include a production building 570 ft. by 760 ft., a substation, fire pump house, guard house, gasoline storage building and a field office. It was valued originally at \$3,911,022 and \$1,890,000 at time of sale. The property occupies 56 acres and will employ about 1000 people. It is subject to national security clause provisions permitting government recapture of the plant on 120 days notice.

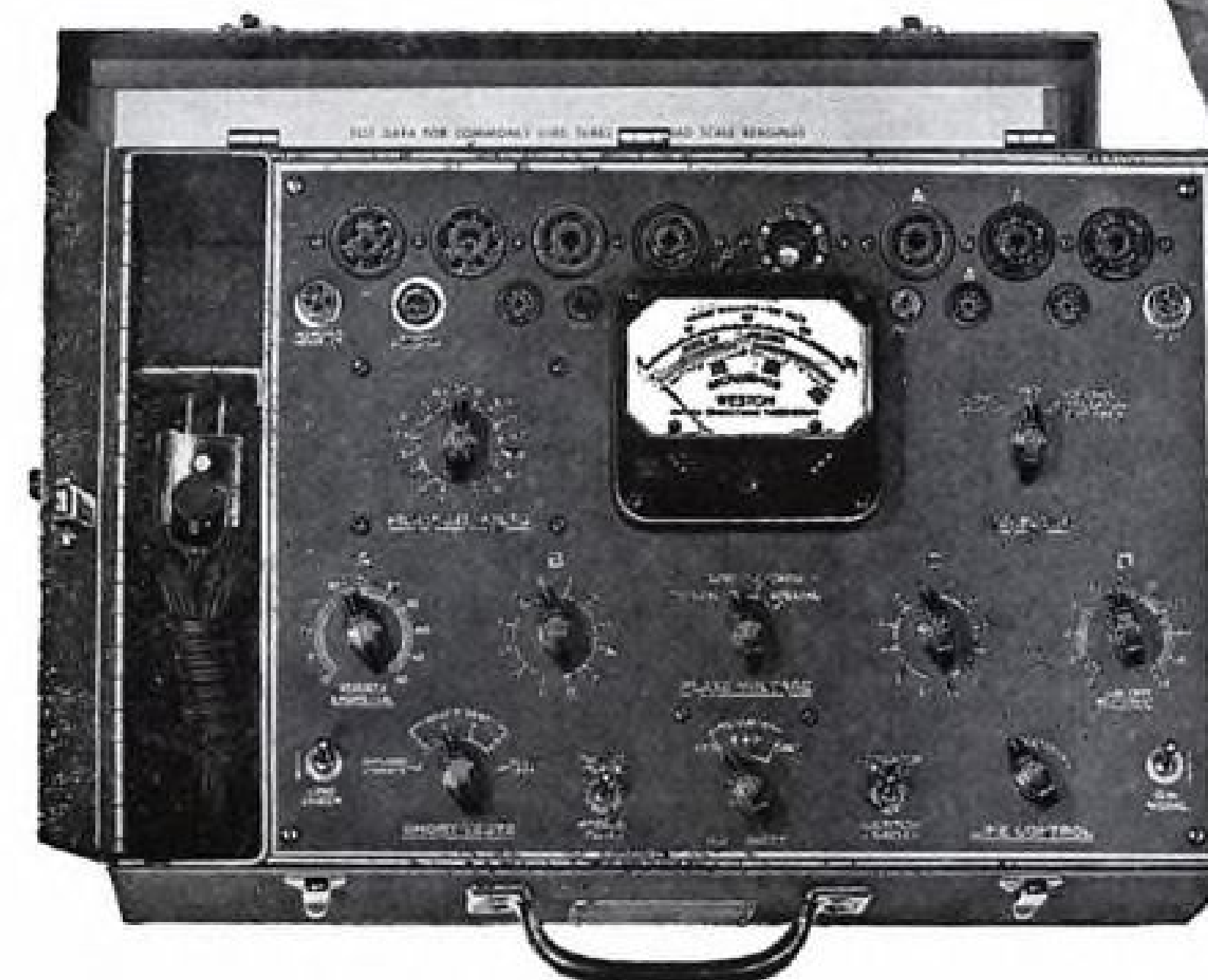
Van Der Horst Corp., Cleveland, has developed a process of bonding chromium directly to 75ST forgings and applied the system to the production of landing gear struts. The 75ST forgings allow a 25 percent weight saving in the AeroI struts used by Chance Vought Division, United Aircraft Corp. The 0.002 in. chromium plating permits this use of aluminum for the first time in a landing gear strut. Poor resistance to wear prevented it earlier.

INSTRUMENTS FOR ELECTRONIC MAINTENANCE

WESTON Electronic Analyzer—Model 769. Incorporating: 1. A conventional Volt-Ohm-Milliammeter with self-contained power source. 2. A high-impedance electronic Volt-Ohmmeter using 115 volt, 60 cycle power. 3. A stable, probe-type, Vacuum Tube Voltmeter, for use to 300 megacycles.



WESTON Multi-Purpose TUBE CHECKER—Model 798. This universal tube checker offers within one instrument provision for testing: 1. Receiving tubes. 2. Voltage regulator tubes. 3. Light duty thyratron tubes such as 2A4-6D4-884-885-2051. Scale is calibrated "Good-Bad" as well as in mutual conductance readings.



Direct Reading Insulation Tester—Model 799. Compact, one-hand-operated insulation tester with .1 to 10,000 megohm range, using a test potential less than 50 volts d-c. Indicates: 1. Insulation properties. 2. Leakage resistance. 3. Conductivity of insulating materials. 4. Leakage due to moisture absorption.

WESTON

Aircraft Instruments

These portable Westons are specifically designed for expediting electronic maintenance . . . for doing the job better—faster. All are engineered and built in the strictest traditions of Weston accuracy and dependability. For further details see your local WESTON representative, or write . . . Weston Electrical Instrument Corporation, 616 Frelinghuysen Avenue, Newark 5, New Jersey.



POWER TODAY FOR THE PLANES OF TOMORROW

3000

hours

of development

testing

already



MAMBA

PROPELLER TURBINE ENGINES

ARMSTRONG SIDDELEY MOTORS LIMITED
PARKSIDE COVENTRY (BRANCH OF HAWKER SIDDELEY AIRCRAFT CO. LTD.)



Thick Root Proved In Phantom

**Distinctive wing-housing for engines
gives aerodynamic, structural benefits.**

By Robert McLarren

The first all-jet aircraft developed for the U. S. Navy and the first jet plane to enter full squadron service aboard a carrier, the McDonnell FH-1 Phantom fighter is also unique with its "buried" wing root location for its power plants.

This salient feature was not an original design goal but the result of dozens of studies of engine locations—encompassing the fuselage and along the wings to the extreme tip.

The tip position proved advantageous aerodynamically but stability problems presented by the possibility of single engine operation nullified choice of this location.

► **Air Inlet Considerations**—The wing root air inlets proved the most complex problem in the design of the prototype (designated XFD-1 but changed to FH-1 when Douglas re-entered the Navy fighter design field) because of the well-known variations in flow at the juncture of an airflow with an elliptical body.

To meet performance guarantees, Westinghouse had specified that airflow to the 19B (original engine, later 19XB) axial-flow turbojet should not vary more than five percent across the face of the compressor inlet.

Original XFD-1 inlets featured an angularity in plan view between the upper and lower lips, resulting in severe lateral airflow across the duct entrance, with consequent lateral variation in

velocity head across first compressor stage.

Following extensive wind tunnel tests by the National Advisory Committee for Aeronautics on a 1/5th scale model of the XFD-1, duct entrances were revised to their present form with singular success.

Not only did the inlet provide constant velocity head across its face, but it permitted 99 percent ram pressure recovery (a phenomenal figure) and, moreover, was free of any local separation at any velocity ratio to be expected in normal operation of craft.

► **Root Design**—The thickened root of the Phantom actually comprises a separate wing. Consisting of an NACA

66-series laminar flow airfoil, the maximum thickness point (45 percent chord from the leading edge) of the root extends in a curved line aft and outboard to the outer panel. This produces the equivalent of a swept wing in this area. In addition, its rapid taper from the broad root chord to the outer panel root chord provides the equivalent of a very low aspect ratio.

This combination of sweep and low aspect ratio is the ideal method of increasing the critical Mach number of a wing, and the FH-1 wing root actually has a higher critical Mach value than the outer panel, although the root is the equivalent of a 20-percent section thickness.

This paradoxical situation obtains from the fact that the upper and lower portions of the power plant section act as two thin airfoils, rather than a single thick one, each exhibiting higher critical Mach value.

► **Greater Spar Depth Afforded**—More practical advantages resulted from the thickened wing root design, including the inherent ample space for providing greatly increased spar depth at the root, where it is most needed.

FH-1 main spar members are heavy, deep assemblies extending between outer panels and across the fuselage, broadening here to comprise fuselage frames.

This heavy construction, with its great bending strength, provides such increased wing rigidity that tip deflection is less than half of an equivalent wing with tapered spars. And this rigidity serves to increase the structure's natural frequency of vibration, thereby improving anti-flutter tendencies.

The thickened root also provides

McDonnell FH-1 Basic Data

Span	40 ft. 9½ in.
Length	38 ft. 9 in.
Height	14 ft. 2 in.
Span (wings folded)	16 ft. 3 in.
Height (wings folded)	16 ft. 10 in.
Empty Weight	6,683 lb.
Normal Gross Weight	10,035 lb.
Max. Perm. Overload	12,035 lb.
Max. Speed	505 mph. @ 30,000 ft.
Ceiling (service)	43,000 ft.
Range (combat)	690 mi.
Range (ferry)	1,400 mi.



Phantom's head-on appearance emphasizes thickened wing roots with air inlets to turbojets. Design permits increased spar depth at root location.



Rear view of Phantom shows close-inboard location of turbojets, affording stability with single-engine operation. Engines slant out to clear fuselage.

the stowage space for the main gear. **►Engine-Position Advantage**—An interesting problem posed by the thickened wing root location was the effect of jet engine operation on the plane's stability and performance.

Because of the close-inboard position of the two engines, the effect of asymmetrical power is negligible, permitting operation on a single engine for maximum duration, with little or no effect on stability (first takeoff of the prototype was made a few feet into the air with only one engine operating).

Ability of the Phantom to operate in this manner affords considerably longer duration than if one power plant had been incorporated, and provides, in addition, a factor of safety.

Operation of the engines on the Phantom produce a three percent change in mean aerodynamic chord in the stick-fixed neutral point location with flaps up, and about four percent with flaps down, both being considered insignificant by its pilots.

A more significant effect, however, is a reduction in stalling speed of about 6 mph. in the "power on" as compared to the "power off" condition. This results from the accelerated flow over the wing root induced by the jets in the "power on" condition.

►Tail, Jet Relation—Careful coordination was made between the aft fuselage-tail location and that of the field of flow of gases from the nozzles.

The horizontal tail surfaces are placed 3 ft. above the center of the jet wake and approximately 9 ft. aft of the nozzle, providing a wake spread angle which encompasses more than 18 deg.

And the engines are canted outward at an angle of 1½ deg. to clear the aft fuselage. Area of the jet adjacent to the aft fuselage and underside of the horizontal surfaces is at a normal temperature of about 300 deg. F.—far too low to affect the skin. Long periods of service have even failed to detect any adverse effects on the tail surface paint.

►Engine Installation Details—Engines are mounted slightly above the chord plane to provide clearance for wheel retraction and, more important, to preserve the flat underside of the wing in the region of the flap panel, obviating double curvature forming of the panel around the tailpipe.

Location of engines is as far forward as the spar webs permit, for longitudinal balance. Such placement necessitates use of a 19-in. tailpipe extension, but this is still far short of the typical tailpipe length in fuselage engine installations.

Engine mounting system is unique. Support is afforded by four links arranged in upper and lower pairs. As the wing deflects upward, for example, the upper spar cap is compressed, pulling the upper links together with

a very slight effect of raising the engine. The lower cap is in tension, spreading the lower links, and having a similar effect on the engine. This accommodates wing bending loads without transmitting any of them into the engine.

Each power plant is quickly removed by unfastening bolts from the lower beam member and dropping the engine onto a cradle.

►Air Intake Precaution—Since a windmilling gas turbine engine produces a drag equivalent in value to 15 percent of the thrust at 500 mph. and 25 percent at 650 mph., each of the Phantom power plants has a controllable shutoff which seals the air intake upon failure of an engine or when one engine is shut down, for cruising. The magnitude of this effect is apparent to pilots who report that the airspeed goes up or down as this air valve is closed or opened.

One precaution to be observed is the necessity for closing the valve slowly, since sudden closure while the turbine is operating at high speed provides a powerful internal pumping action that can collapse the intake duct and also cause the turbine blades to stall, with resulting damage.

To cool the power plant section and bleed off the boundary layer adjacent to the fuselage, a small slot is provided into which the boundary layer is spilled, led through the accessory compartment, thence out into the airstream.

On the ground, the air flows in exactly the reverse direction because of the induced flow into the air inlet created by compressor suction which draws air out of the boundary layer bleed from the accessory compartment.

However, no adverse effects of this action have been discovered, because the air is sufficiently cool and ground operation normally is short.

►Fire Checks—Particular attention has been paid to fire prevention. Forward engine compartment contains high pressure fuel lines which, if ruptured, would pump considerable fuel in a few seconds. However, this compartment is separated from the aft engine compartment containing the combustion chamber, turbine and tailpipe, by the rear spar—an effective firebreak.

By utilizing sparkproof electrical equipment in the forward compartment, danger of fire in this section has been minimized.

Fire in the aft compartment could only occur with a puncture of the engine and the existence of a fuel mixture of combustible proportions, and the probability of these two conditions occurring simultaneously is remote. Also, fire in this section could be stopped quickly by shutting off the fuel.

On the ground, the reverse flow carries any fuel or oil vapor forward and away from the aft compartment, effec-

There are two sides to this

QUESTION of QUENCHING

Because of the popularity of Alcoa 24S Alloy throughout the aircraft industry, and because of the sensitivity of 24S to slow quench, as regards its corrosion resistance, the industry has generally come to associate fast quenching with maintained corrosion resistance in all popular Alcoa Alloys.

Actually, lowered resistance to corrosion does not always go hand in hand with slow quench.

SLOW QUENCH
14S-T6
61S-T6

The manufacturer utilizing a rapid quench with Alcoa 14S or 61S may be overlooking an opportunity. These alloys, when artificially aged, are relatively insensitive as regards effect of quenching rate on corrosion resistance; they can, in many cases, be quenched at slower rates (in the neighborhood of 100° per second) with results advantageous to further manufacturing operations.

FAST QUENCH
24S-T4

As the industry now generally recognizes and practices, a rapid (cold water) quench should be utilized with Alcoa 24S, because of its corrosion sensitivity to slow quench.

75S
While a fast quench of alloy 75S is not necessary to secure good resistance to corrosion, a fast quench is required to obtain high tensile and yield strengths.

Complete information on quenching of high-strength 75S is available in booklet form from Alcoa. Further information on the other three alloys discussed will be supplied on request. ALUMINUM COMPANY OF AMERICA, 2132 Gulf Building, Pittsburgh 19, Penna.

ALCOA FIRST IN **ALUMINUM**





Prayer and Aeromatic® Win Out!

...AIR SPEED BELOW 50...END OF RUNWAY...HILL DEAD AHEAD...

A steep thirty-foot bank of the Yukon River at one end of the field, a high hill on the other and a no-wind condition! That's the situation in which Carl F. Gulley and wife found them-

selves as they attempted to land on the snow-covered 1500-foot strip at Eagle, Alaska. What happened? Here's the story in Mr. Gulley's own words:

"The terrain was extremely hard to determine when blanketed with solid clean snow, but I knew I should have been on the ground and kept feeling and feeling for it. It wasn't there! Suddenly that hill loomed up just in front of me. By then my air speed was below fifty, and brother, was I panicky! I knew I couldn't make it, and thought of that beautiful plane stalled out in the treetops. But I gave it full throttle, eased the nose up, and prayed. Just as I skimmed over, I breathed a sigh of relief. I had had faith in an Aeromatic before, but that little episode really sold me. I'd sooner lose my main gear than my Aeromatic."

Tough spot! But only a part of the day's work for an Aeromatic Propeller. It insures top performance—and economically, too—by automatically selecting the proper pitch for all phases of flight. Thus an Aeromatic gives you $\frac{1}{4}$ shorter take-off— $\frac{1}{2}$ higher rate of climb—greater cruising range and speed—and

safer, easier landings. It's tops among props! It can save you money.

Write for Information, if you own, or plan to buy, a plane listed below. Koppers Co., Inc., Aeromatic Propeller Dept., 236 Scott St., Baltimore 3, Maryland.

Aeromatics are available for these planes . . . are being approved for other makes and models:

STINSON	PIPER SUPER CRUISER	ERCOUPE
SWIFT 125	BELLANCA CRUISAIR	RYAN NAVION
GRUMMAN WIDGEON	CESSNA 120 & 140	FAIRCHILD 24

Also available for numerous foreign models

Aero matic

The propeller with a brain  for your personal plane

Air-Controlled Automatic Propeller—Licensed under Patents of Everet Propeller Corp.

AVIATION WEEK, June 21, 1948

tively eliminating this source of danger. **► Engine, Fuel Details**—The two Westinghouse 19XB-2B (J-30-WE) engines each develop 1600 lb. static thrust at 15,700 rpm. (This same engine, as the J-30-P-20, was produced in limited quantity by Pratt & Whitney Div., United Aircraft Corp.) Cruising thrust is obtained at 14,000 rpm. and maximum permissible speed is 17,000 rpm.

Conventional 100/130 octane aviation gasoline is used to obviate necessity for special stowage of kerosene or other fuels aboard aircraft carriers operating Phantoms.

This new engine differs from the original 19B used in the prototype XFD-1 by the addition of four stages of compression, resulting in an increase in static thrust from 1360 to 1600 lb., with a reduction in weight of over 100 lb.

The Phantom carries 375 gal. of fuel in self-sealing fixed tanks in the fuselage and 295 gal. in a large, jettisonable tank under the belly—a total of 670 gal.

The short landing gear provides little clearance for the bottom of the belly tank. Although use of the tank from land bases is standard routine for ferry flights, the high vertical rate of descent of the craft to a carrier deck landing compresses the oleo struts excessively, rendering its utilization hazardous during carrier operations. Various sizes and shapes of tanks are being developed to solve this problem.

The fuel system is automatic, with feed being switched from an empty to a full tank without necessity for pilot's attention. This provides a current development problem, however, for it is difficult for pilot to transfer fuel from one tank to another or to switch to a tank other than in the preselected sequence.

► Electricity Favored—The Phantom is virtually an all-electric airplane. Landing gear, wing flaps, air brake, wing folding, and deck hook actuation are accomplished by fractional horsepower motor jacks.

Brakes only are hydraulically operated from a simple master cylinder system.

No control power boost system is used, but ailerons and elevators are equipped with a spring-tab system to assist pilot and linearize control system loads.

► General Construction, Armament—Structure of the FH-1 uses 75ST Alclad sheet throughout assembled with machine countersink riveting.

Fuselage is built up on a series of frames and heavy extruded-section longerons.

Wing outer panels are of simple two-spar construction with pressed flange aluminum alloy ribs and flush riveted 75ST skin plating.

Armament consists of four .50-cal. machine guns (with 300 rounds each) mounted in the upper nose.

Gun ports are streamlined fairings projecting from the nose mold line. Sighting is via conventional electric reflector unit, and firing is electric.

Armament compartment is exposed for servicing by raising large door assemblies, and is accessible from the ground.

► Carrier Equipment—The craft is equipped with complete carrier deck operating equipment. Arrestor hook is mounted in the lower aft fuselage.

Deck catapult launching and snubbing cable fittings are spring-loaded forgings which lie flush within the wing and fuselage when not in use and are rotated down and out by deck crew for cable attachment.

A spring-loaded cantilever barrier guard is mounted in the upper nose, forward of the windshield. A heavy rubber tailskid is mounted under the rudder post to protect the fuselage in a taildown landing.

► Tricycle Gear Advantages—The Phantom's tricycle landing gear has proved ideal for carrier operation—the airplane is thrown forward upon contact with the deck, a stabilizing tendency, instead of the nose rising as in conventional tractor gear aircraft; the hot jet is parallel with the wooden deck rather

than being directed against it as with a tractor gear; and the tricycle provides the required clearance between the fully deflected wing flaps and the deck-arresting cables with a minimum height of gear strut.

Main gear units fold inward into the wing lower surface. Nose gear rotates 90 deg. upon retraction into the lower forward fuselage to provide clearance for the armament and radio installations in the nose compartment.

The air brakes are of the finger type and extend up and down from the wing surfaces, normal to the airstream.

Production model FH-1 includes an additional 18-in. fuselage section forward of the wing to afford more fuel capacity. Because of this increased nose length, fin and rudder area has been increased to maintain directional stability. The larger fin constitutes the major difference in external appearance of the two models.

The FH-1 is now in full service with Navy fighter Squadron VF-17A and Marine fighter Squadron VMF-14B.

The Navy awarded a contract to McDonnell for 100 Phantoms late in '44. On V-J Day this contract was cut back to 30 airplanes, and shortly thereafter it was augmented by 30 additional planes at a cost of \$6,915,826. The total order for 60 craft has now been completed.

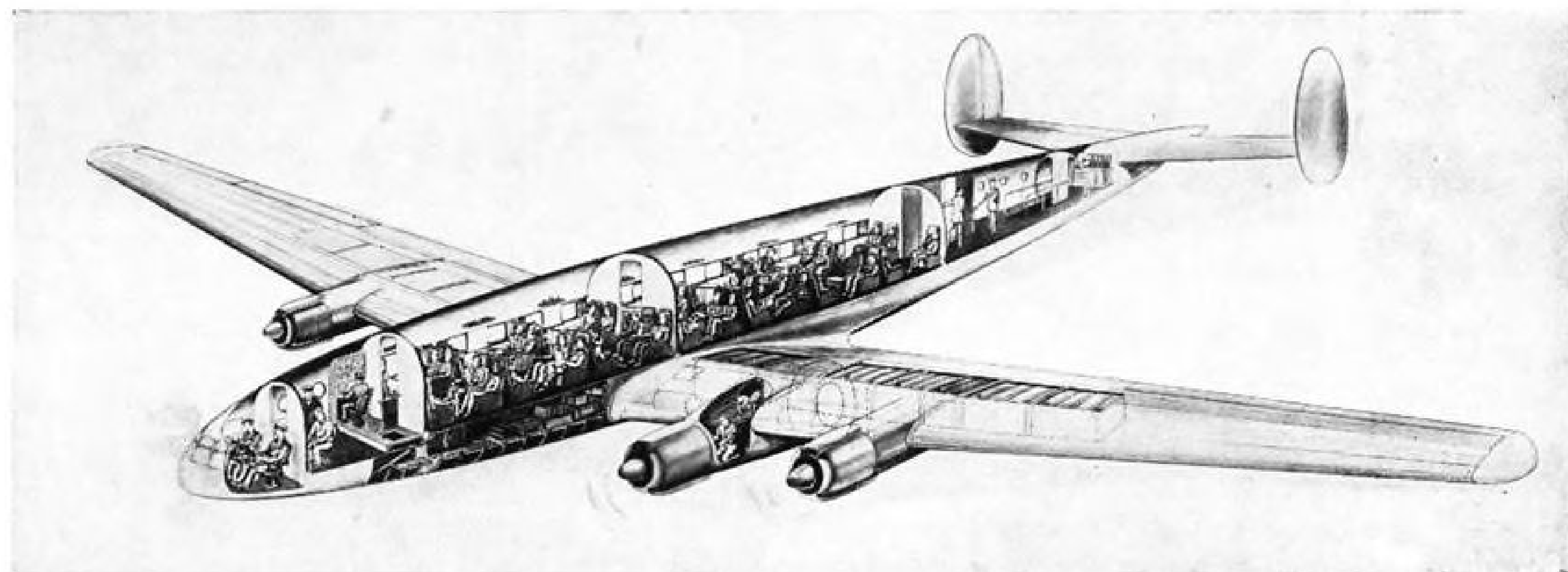


FLYING SHOE

This unique copter configuration—"flying shoe"—is now under experimental test at United Helicopters, Inc., Palo Alto, Calif. Pilot stands with feet in stirrups on framework between two 4-cylinder 65-hp. engines driving 30-in. propellers. Lateral stability is gained by varying power output of left or right engine through throttle control at end of right-hand "ski pole." Left hand

pole has throttle for applying power uniformly to both engines for rise or descent. For fore-and-aft balance, pilot leans forward or back to vary the C.G. and impart torsional inclination of propeller disks for forward or backward flight. Hovering flight, up to this time, has been limited to approximately 1 ft., under tether. Inventor of machine is Charles Zimmerman.

NEW AIRCRAFT



Italian 4-Engine Transport in Final Stage

First Breda-Zappata 308 still awaits powerplants and components which must be bought in Britain or U. S.

Prototype of the Italian four-engine transport B.Z. (Breda-Zappata 308)—planned as far back as 1943, with construction started in '46—still awaits acquisition of engines and other aircraft components from abroad for completion.

The craft is a low-wing design, with tricycle landing gear and large-volume fuselage.

Cabin area is divided into passenger salons approximately 10 ft. wide and 7½ ft. high. Cabin underfloor area is utilized for baggage storage.

Several versions of the plane have been studied—

- Passenger designs accommodating 55, 64, 74, and 80.
- Sleeper containing four berths in each of three compartments, plus 37 chairs.
- Passenger-cargo accommodating 31 people and 3 to 4 tons of freight.

Aft of pilots' cabin is compartment for housing the navigator and the flight engineer. Access to engines is afforded through a tunnel in the wing.

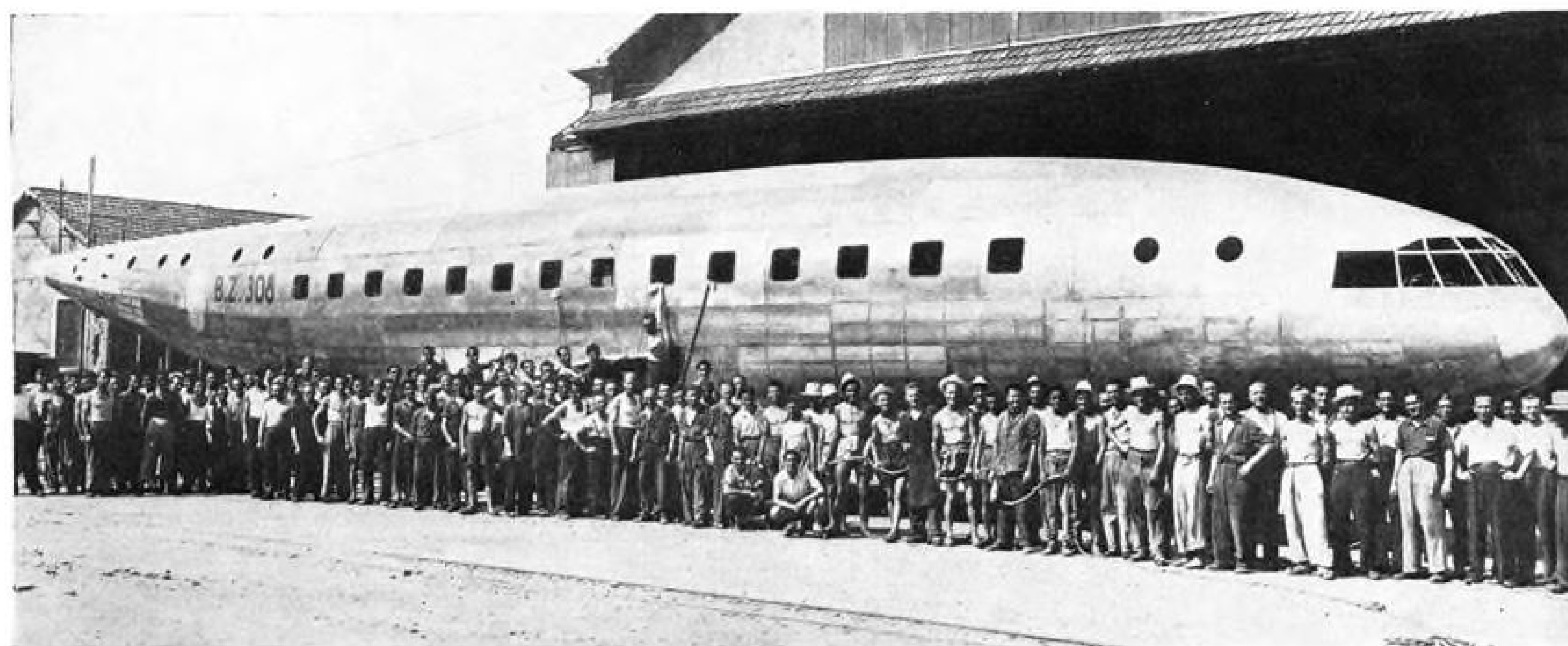
Aft fuselage section houses space for hand luggage, toilets, galley, and pas-

senger loading stairway in the floor.

The craft has been planned for use with Wright Cyclones, Pratt & Whitney Double Wasps, or the Bristol Centaurus. Studies now underway seem to favor the British engine.

Basic Data—B.Z. 308

Span	138 ft.
Length	110 ft.
Wing area	2,223 sq. ft.
Gross weight	46 tons
Max. speed	342 mph.
Cruising speed at...	
9840 ft.	261 mph.
Max. Range	3726 mi.



New Plane Cleaner Cuts Man-Hours

A new product has augmented efficiency of the airplane cleaning function at Trans World Airlines' Kansas City maintenance base, drastically cutting man-hours normally entailed.

The plane-cleaning activity complements TWA's well-known conveyorized engine cleaning system for overhaul.

Airplane cleaning requires as much as three times the man-hours for a complete engine overhaul.

Complexity of the aircraft external cleaning job is indicated by the variety of forms uncleanness often takes—exhaust and food stains, heavy and light oil deposits, water spots from the atmosphere, and a dull oxide film requiring most attention.

There is no cleaner capable of removing all these deposits. Hence, the cleaning operation is divided into several jobs.

First step is a washdown of the entire exterior with an emulsion cleaner. This is followed by several operations on separate deposits and may require a second emulsion cleaner, a paint stripper application, or use of a polish containing a light abrasive.

This final cleaning is followed by a wax polish coating, which requires considerable time—generally up to 120 man-hours.

TWA is now giving service tests to a new airplane cleaner which promises somewhat of a radical change in the standard methods previously outlined.

Use of a wax film polish for airplane finishing has been dictated by the fact that acid cleaners attack the aluminum coating on the surface of 24ST Alclad, which, when destroyed, renders the underlying dural vulnerable to corrosion.

The new product is an acid cleaner containing an inhibitor to prevent this attack on the metal.

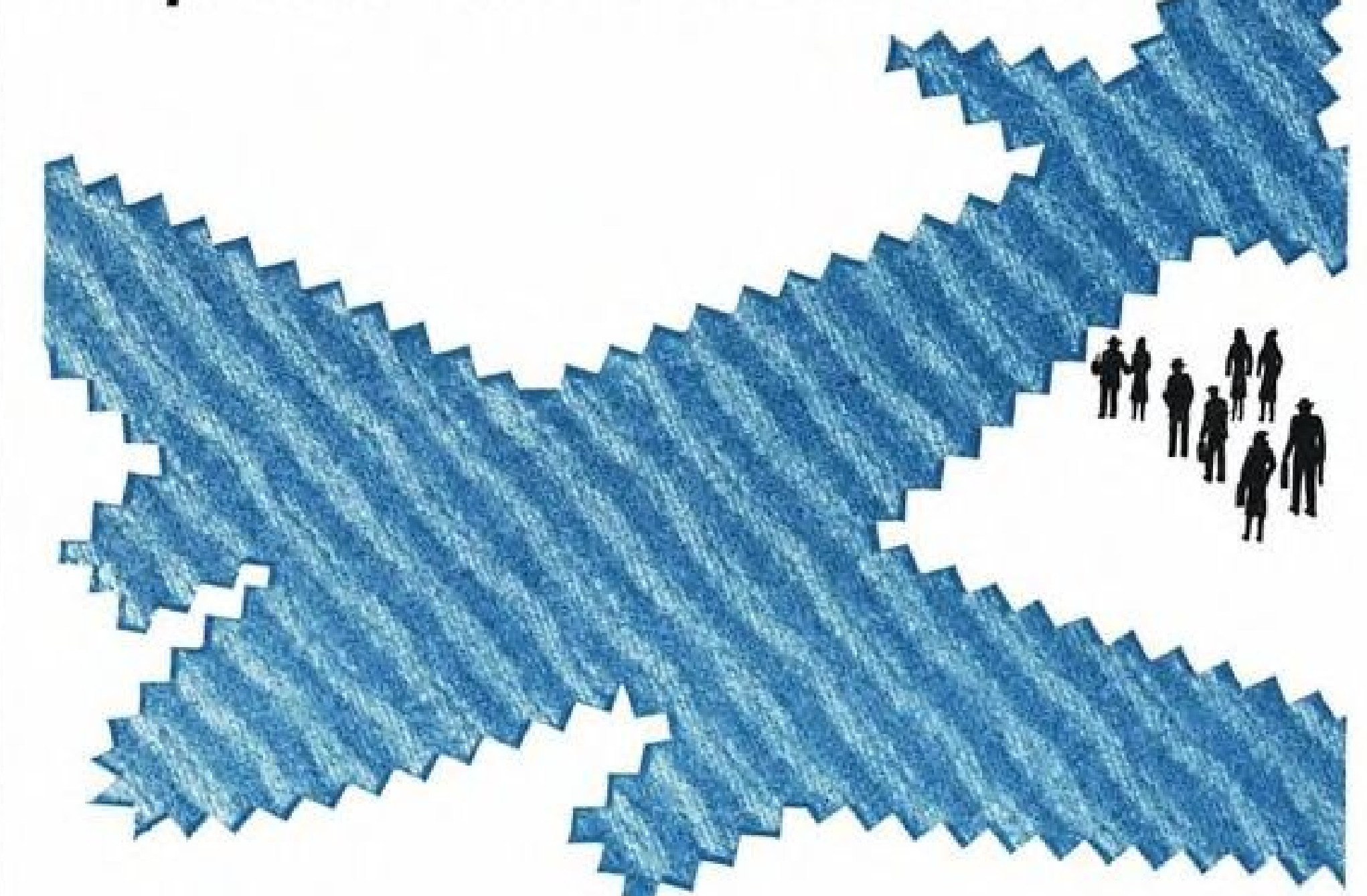
This promising new product renders the laborious polishing job obsolete, and reduces man-hours from 120 to 10-16, depending on skill of crew.

The cleaner is applied with a pressure hose, allowed to remain on an area for about one minute, and then removed with a stream of cold water. The craft is then ready for service without further attention.

TWA is making plans for its use following a 100-200 hour service test. Chicago & Southern Airlines is already using it as standard process.

Biggest cleaning job of all, however, is the airplane interior which requires up to 1200 man-hours. This tremendous expenditure is occasioned by the complexity of the interior job, requiring extensive hand spotting and individual treatments.

They're all TOUGH CUSTOMERS



to Upholstery Fabrics

Specifically designed and constructed for aircraft use, Bridgeport Upholstery Fabrics have what it takes to handle your tough customers. And they're all tough customers—be they ash-dropping adults or candy-coated children. Bridgeport Aircraft Upholstery Fabrics are woven from the finest quality wools and worsteds, they're weight-saving and extremely durable. They have a smooth, stain-resistant surface that can be whisked clean in a jiffy, yet are so cashmere-soft that they won't cling, even to the sheerest clothing. And Bridgeport Aircraft Upholstery Fabrics are smart-looking. They can be supplied in exclusive colors and weaves that will tastefully harmonize with other interior appointments creating greater customer confidence in your ships.

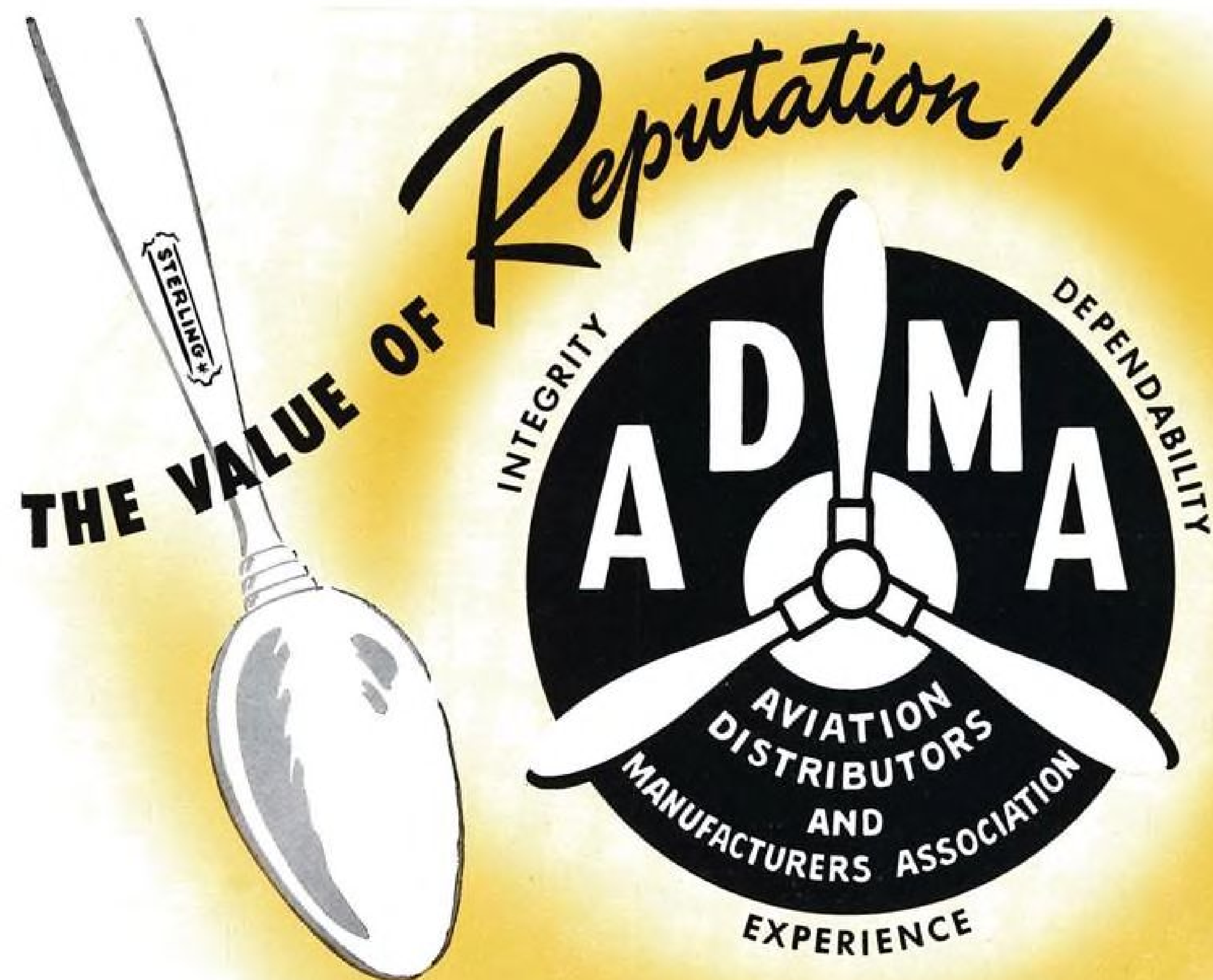
You'll be pleased to know also that Bridgeport Aircraft Upholstery Fabrics are easily and quickly installed. They have special stretching and sewing characteristics that speed up installation by as much as 20% over other types of upholstery material. Write today for free sample swatches and complete information regarding colors and weaves.

Specify
Bridgeport
Aircraft
Upholstery Fabrics
...leading manufacturers & airlines do.



for
SEATS
BACKS
SIDEWALLS
HEAD-
LININGS

Bridgeport FABRICS, INC.
BRIDGEPORT 1, CONNECTICUT
Est. 1837



Men who buy know that their most reliable guide in choosing sources of supply is the *reputation* of the distributor and manufacturer of the product. However, it is not always possible for buyers of aircraft parts and components to know all suppliers intimately.

It is the primary objective of the A.D.M.A. organization to provide aircraft parts and supplies purchasers with highly reputable sources of supply and the *best* in service and products. Like "sterling" on silver, the A.D.M.A. emblem stands for reputation you can depend upon.

YOUR A.D.M.A. DISTRIBUTORS

AERO SERVICE & SUPPLY COMPANY
Municipal Airport Birmingham 1, Alabama
AIR ACCESSORIES, INC.
1400 Henderson Street Fort Worth 1, Texas
AIR ASSOCIATES, INC.
Teterboro, New Jersey
AIRCRAFT COMPONENTS CORP.
402 Montgomery Street Alexandria, Virginia
AIRCRAFT HARDWARE MFG. CO., INC.
1381 Lafayette Ave. Bronx 59, N. Y.
AIRCRAFT SALES CO.
Meacham Field Fort Worth 6, Texas
AIR-PARTS, INC.
723 Sonora Avenue Glendale 1, California
AVIATION SUPPLY CORPORATION
Airport Station Atlanta, Georgia
BERNER-PEASE
3221 NE 2nd Avenue Miami 37, Florida
BUFFALO AERONAUTICAL CORPORATION
Buffalo Municipal Airport Buffalo 11, N. Y.
DURHAM AIRCRAFT SERVICE, INC.
56-15 Northern Blvd. Woodside, New York
EASTERN AIRMOTIVE CORPORATION
P. O. Box 8044, Byrd Airport, Richmond 23, Va.

GENERAL AIRCRAFT SUPPLY CORP.
City Airport Detroit 5, Michigan
GRAND CENTRAL AIRPORT CO.
1310 Air Way Drive Glendale 1, California
ILLINOIS AUTO ELECTRIC CO., Aviation Division
2011-37 Indiana Avenue Chicago 16, Illinois
INTER CITY AVIATION, INC.
Logan Airport East Boston 28, Mass.
THE S. A. LONG COMPANY, INC. (Aviation Div.)
450 East Gilbert (P. O. Box 114) Wichita 1, Kansas
MUNCIE AVIATION CORP., (Aircraft Supply Div.)
Muncie Airport Muncie, Indiana
NATIONAL AVIATION SUPPLY COMPANY
701 E. Carson Street Pittsburgh 3, Pa.
NORTHWEST AIRCRAFT DISTRIBUTING CO.
P. O. Box 649 Vancouver, Washington
OMAHA AIRCRAFT COMPANY
Municipal Airport Omaha 2, Nebraska
KARL ORT
Thomasville Airport Thomasville, Penna.
PACIFIC AIRMOTIVE CORPORATION
2940 N. Hollywood Way Burbank, California
PIEDMONT AVIATION, INC.
Smith Reynolds Airport Winston-Salem, N. C.

PRECISION AEROMOTIVE CORPORATION
Municipal Airport Houston 17, Texas
SNYDER AIRCRAFT CORPORATION
5315 West 63rd Street Chicago 38, Illinois
SOUTHWEST AIRMOTIVE COMPANY
3414 Love Field Drive Dallas 9, Texas
STANDARD PARTS & EQUIPMENT CORP.
904-04 North Main Street Fort Worth, Texas
SUPPLY DIVISION, INC.
Lambert Airport, Robertson (St. Louis County), Mo.
TUSCARAWAS COUNTY AVIATION, INC.
Municipal Airport New Philadelphia, Ohio
VAN DUSEN AIRCRAFT SUPPLIES, INC.
2004 Lyndale Avenue South Minneapolis 5, Minn.
WESTERN AERO SUPPLY CORPORATION
P. O. Box 4527, Alamo Hts. Sta., San Antonio, Texas
WESTERN SKYWAYS SERVICE
Troutdale Airport Troutdale, Oregon
A. W. WHITAKER
P. O. Box 1811 Portland 11, Oregon
E. W. WIGGINS AIRWAYS, INC.
Box 209 Norwood, Mass.

A.D.M.A. Aviation DISTRIBUTORS AND MANUFACTURERS ASSOCIATION
National Headquarters • 505 ARCH STREET • Philadelphia 6, Pa.

NEW AVIATION PRODUCTS

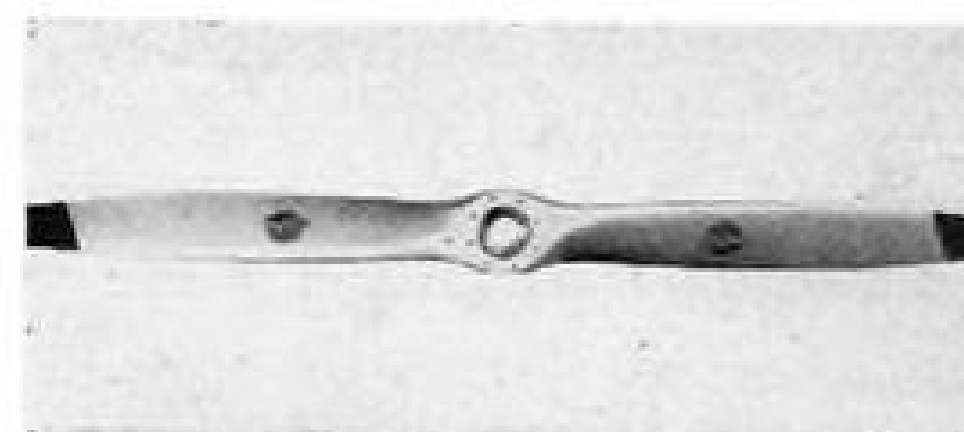


Dynamotor

Stated to be particularly adaptable to installations where weight and size are important factors, Model GP-26 dynamotor for aircraft applications is marketed by Gothard Mfg. Co., 2110 Clear Lake Ave., Springfield, Ill. Unit is available in range of capacities to meet various requirements, with power output up to 80w. continuous and 150w. intermittent duty. Voltage regulation averages 19 percent. Weight is 8½ lb., height 4 in., frame diameter 3½ in., and length 7¼ in.

Welding Aid

Designed to confine flow of molten alloys to limited area upon which weld is to be applied, "Anti-Capillary Compound" is offered by Eutectic Welding Alloys Corp., 40 Worth St., N.Y.C., for use with company's low temperature welding rods. Material protects parent metal from discoloration at welding temperatures and lessens possibilities of distortion. Compound can be used with oxyacetylene gas torch, soldering torch and iron, furnace, and in high-frequency applications. Applied by painting or spraying, it is removed by mechanical action, quenching, wire brushing or sand blasting.

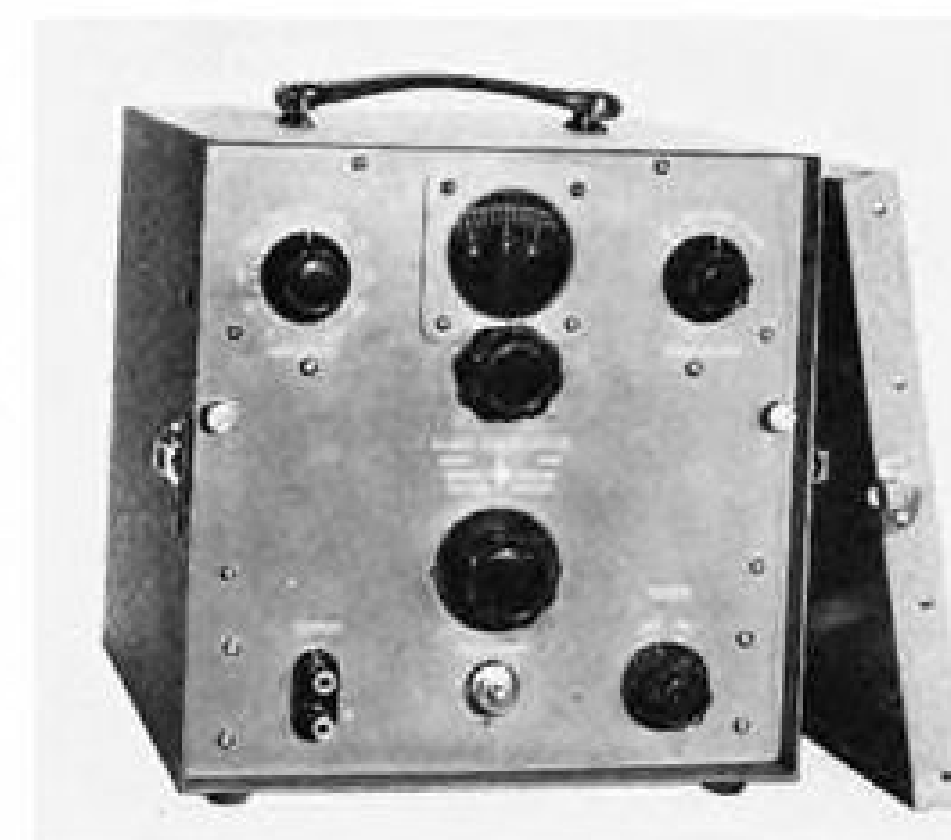


New Propeller

Larger forged-aluminum 1A170 "Met-L-Prop." for use on engines in 100-165 hp. range, is announced by McCauley Corp., Dayton, Ohio. Propeller is CAA-approved for Stinson Voyagers powered by Franklin 150 and 165-hp. engines; and 4-place Cessna 170 and Aeronca Sedan, powered by Continental C-145s.

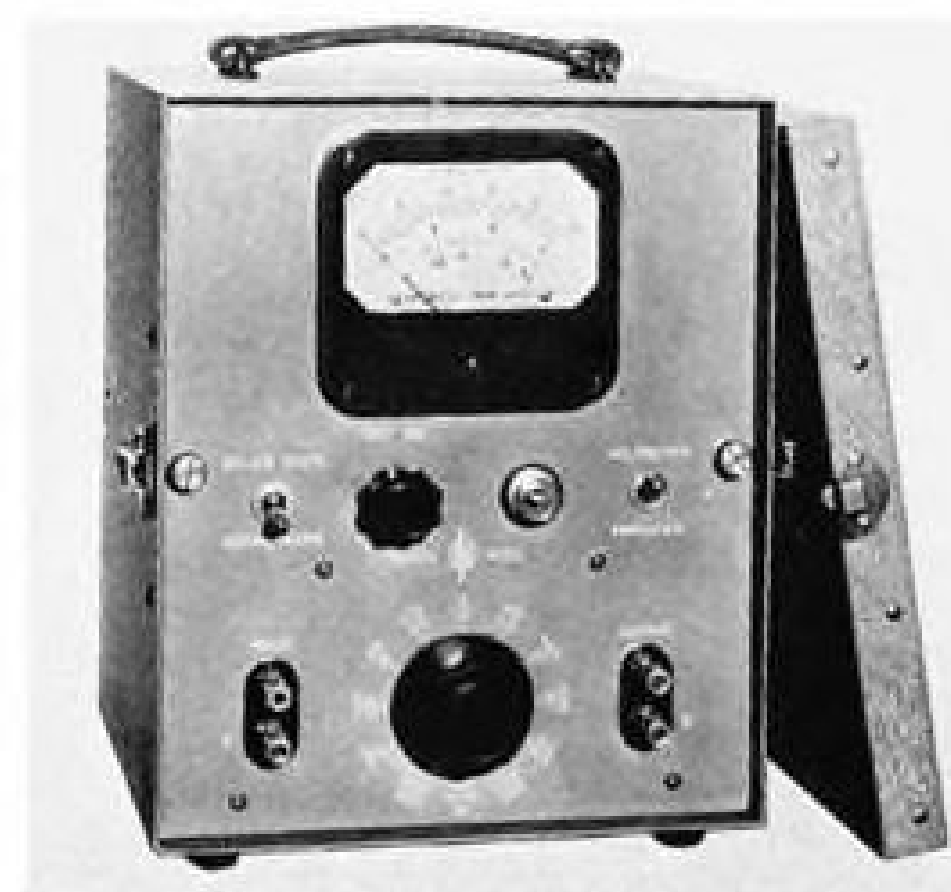
Segmented Rotor Brakes

Adaptable for use on variety of planes is new type segmented rotor brake developed by Products Div., Bendix Aviation Corp., 401 N. Bendix Dr., South Bend 20, Ind. Rotors are made of separate sections flexibly attached, rather than being constructed of continuous metal ring. Construction is stated to allow higher working temperatures without warping or cracking. Sizes range from 5 to 31 in. in diameter.



Soldering Unit

Lightweight soldering pencil iron for hard-to-reach locations is made by Ungar Electric Tool Co., Los Angeles 54, Calif. Featured are four interchangeable tips, flexible cord integral with plastic handle, ceramic short-eliminating separator, and spring action rivet for contact with heating unit held by extra length copper plated brass shell. Element is 20w., operates on 110-120v., a.c.-d.c. Unit is 7 in. long, 1 in. max. dia., weighs 3.6 oz.



Measuring Instruments

Audio oscillator (top photo) and vacuum tube voltmeter (above), designed for general use where power sources are not available, are announced by Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif. Portable, lightweight, and stated to be hum-free, both instruments are operated from flashlight and standard 45v. "B" batteries, and are claimed to be particularly useful for measurement at points not serviced by a.c., such as strain gage installations and telemetering and aircraft circuits. Audio oscillator has frequency range of 2 cps. to 20 kc. in 4 decade range. Stability is claimed better than ±3 percent. Output is 5v. into 10,000 ohm load, and frequency response is flat with ±1 db. between 2 cps. and 20 kc.

O-Ring Data

New 12-page catalogue No. 901 on synthetic rubber O-rings for aircraft and industrial use, is available from Parker Appliance Co., 17325 Euclid Ave., Cleveland, Ohio. Introductory pages cover general aspects of ring sealing, with application details. Dimension and selection tables cover 88 ring sizes, and give gland, cylinder bore, piston groove, and piston rod diameters for each size. Information on service characteristics is also included.

Engineering manual titled "John Crane Hydraulic O-Rings," is offered by Crane Packing Co., 1800 Cuyler Ave., Chicago, Ill. Included are tabulations of compound specifications and dimensional standards; data on applications and installation; plus drawings showing typical problems of O-ring usage.

For Aircraft Maintenance

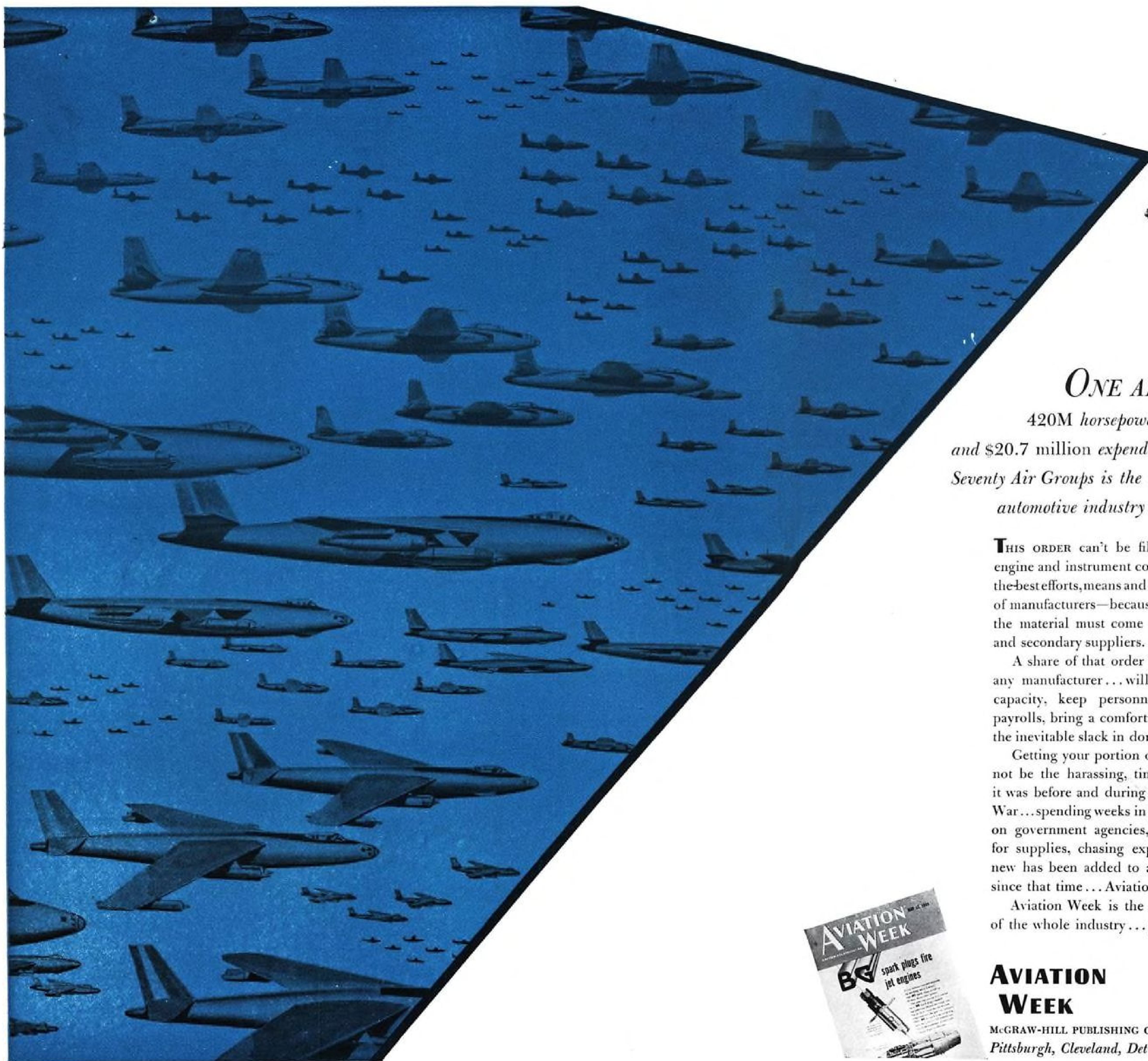
Quantity production of cold cylinder indicator, "Magic Wand," is announced by Dejur Amsco Corp., Long Island City, N. Y. Used extensively during the war, advantage claimed is quick determination of cylinder trouble without major disassembly.

Fluid Flow Equipment

Data are available from Brooks Rotameter Co., P. O. Box B-24548, Lansdale, Pa., on its inductive remote-reading rotameter. Contained is description of unit; diagrams of operation, installation, and automatic ratio control; as well as dimensions of equipment.

Tools and Parts

Ex-Cell-O Corp., 1230 Oakman Blvd., Detroit, Mich., offers data on boring machines, precision aircraft parts and assemblies, and cutting tools in its 8-page booklet titled "Tool-Tips."



x70!

ONE AIR GROUP averages 165 air crew, 1800 tons aircraft, 420M horsepower aloft... about 7 million man hours of manufacturing, and \$20.7 million expenditure! For ground maintenance, multiply the above by ten! Seventy Air Groups is the largest order of peacetime history... can come close to the automotive industry in dollar volume during the next three years!

THIS ORDER can't be filled by just aircraft, engine and instrument companies... will take the best efforts, means and abilities of thousands of manufacturers—because more than 70% of the material must come from subcontractors and secondary suppliers.

A share of that order is good business for any manufacturer... will utilize spare plant capacity, keep personnel intact, maintain payrolls, bring a comfortable backlog against the inevitable slack in domestic demand.

Getting your portion of this business need not be the harassing, time-taking runaround it was before and during the early part of the War... spending weeks in Washington, waiting on government agencies, scrambling around for supplies, chasing expeditors! Something new has been added to aircraft procurement since that time... Aviation Week.

Aviation Week is the first major medium of the whole industry... prime news vehicle,

published weekly, wanted and respected. With more than 30,000 circulation, Aviation Week affords really adequate and representative coverage of major manufacturers, government agencies, military services, airlines, material sources... reaches design, engineering, plant equipment, personnel, purchasing, distribution, maintenance... everybody important!

USE AVIATION WEEK to shine your rind, polish your apples... make known your capacities and wants... advise and inform government, the industry and the services of what you can do, and what you are doing. There is no easier, faster, cheaper way to get in on one of the world's biggest markets—now opening with \$3.2 billion in initial orders.

Advertising in Aviation Week now can be your best, business-getting representative!... For more details, call the nearest AW office, or write direct... today.



AVIATION WEEK

McGraw-Hill Publishing Co., 330 West 42nd St., New York 18... Offices in Boston, Philadelphia, Pittsburgh, Cleveland, Detroit, Chicago, St. Louis, Atlanta, San Francisco and Los Angeles.

Don't Miss It...

BIG FEATURE STORY ON NEW UNIFORMS OF REEVES FABRICS

as seen in
Look
JULY 6 ISSUE
ON NEWSSTANDS JUNE 22

LAST January Reeves Brothers made history with its "New Industrial Uniforms Fashion Show." Now LOOK Magazine with 15,650,000 readers reports on the new uniforms, showing many of the garments in use—in a dramatic four-page feature article.

Don't miss this unusual article. The garments graphically illustrate how better designs, using high-quality fabrics, can mean greater efficiency, safety and economy. Their better appearance and longer lasting wear boost employee morale and increase public good will.

More than 500 inquiries from cutters, large industries and retailers followed the initial showing. Now, many of the garments have passed the "test" stage and are in mass production. Write for the folder, "A New Slant on the New Look." Ask for specific details on your own industry. Please address Dept. 11.



THE REEVES FABRIC GROUP INCLUDES: Reeves Army Twill • Reeveking Gabardine • Glengarrie Poplin • Marine Herringbone Byrd Cloth • Warrior Twill • Mountain Cloth • Pima King Broadcloth • Chesnee Gabardine • Reevecord • Parklyn Pique

MADE OF FINE COTTONS

REEVES BROTHERS, INC.

54 WORTH STREET, NEW YORK 13, N. Y.

REPRESENTATIVES IN: Akron • Atlanta • Boston • Chicago • Dallas • Los Angeles • Philadelphia • Portland, Ore. • St. Louis • Montreal • Toronto



FINANCIAL

UAL Seeks More Working Capital

While market conditions are unfavorable, stock sale now necessary to cover purchase of new equipment.

United Air Lines, to bolster its working capital position, shortly will sell an additional 369,618 shares of common stock. Based on current market quotations, it is estimated that somewhere between \$4,500,000 and \$5,000,000 may be raised in this manner.

This offering is being made through "rights," each common stockholder being entitled to subscribe to one new share for each five now held.

As with all stock flotations of this type, a definite dilution of the existing equity occurs. It is probable that United would have preferred to delay public financing at this time and to have awaited more opportune market circumstances. However, rather than run the risk of jeopardizing its financial condition, United is paying a relatively high price to obtain necessary additional capital. Early last year United obtained \$49 million in a major financing program and it was assumed this would be adequate.

► **Commitments**—Estimates indicate that the company will be required to pay during the period between Mar. 31, 1948, and the end of this year an aggregate of approximately \$15,143,000 for the purchase and improvement of flight and communications equipment and for the purchase and construction of ground and other facilities. Substantial additional amounts of capital expenditures will be required in 1949 and subsequent years.

As of Mar. 31, 1948, United had contractual obligations for the purchase of flight equipment, payable in 1949, of approximately \$9,500,000. Further, the company estimates that additional expenditures for equipment and facilities will be required in 1949, amounting to about \$12 million.

Based on present mail and passenger rates in effect, United estimates that its net loss for 1948 will be around \$4 million. Depreciation and amortization charges are expected to reach \$13,350,000, thus indicating a cash build-up of about \$9,350,000 on this basis.

► **New Fund Need**—The answer to the current financing may be found in the necessity of the company to raise approximately \$2 million in new funds in order to be in a position to comply with the requirements of its credit

agreement under which its term bank loans are advanced and under the indenture which its debentures are issued. The current stock sale will exceed the required \$2 million by a substantial margin.

United points out, however, that it normally sustains substantial operating losses during the winter months and it will require a portion of such additional funds early in 1949 for working capital and for the same type of requirements which appear this year.

The implications are clear that means will be sought to bring additional funds into the company by one or a combination of means. An increase in passenger fares is indicated as one approach. The sale of additional preferred and common shares or the creation of additional obligations of the company also is discussed. It is evident, too, that United is looking to CAB as a source for substantial relief through an increase in mail pay.

► **Loss**—United sustained a loss after all charges of \$3,774,366 for the year ended Dec. 31, 1947. The net loss for the first quarter ended Mar. 31, 1948 reached \$3,550,534 after all tax adjustments. During the period when the DC-6s were grounded, the company made no provision for depreciation charges.

American, on the other hand, continued such charges under similar circumstances. In other words, if depreciation charges were allowed to accumulate for the DC-6s by United during the first quarter, the net loss reported would have been materially increased.

The company attributes this accumulation of losses to the failure of postwar passenger air transportation to reach levels previously expected, increased operating costs not compensated for by increases in rates, decreased airmail tonnage and the voluntary grounding of the DC-6s last November.

No mention in United's registration statement is made of the part its purchase of Route 68 (Denver-Los Angeles) from Western Air Lines played in the depletion of its capital resources. In August, 1947, CAB approved United's purchase of this route for

\$3,750,000. In addition, United assumed Western's obligation to purchase five DC-6s, which entailed a commitment of at least \$4 million.

► **Landis Prophecy**—At the time, then CAB chairman Landis wrote a strong dissent to this decision, particularly taking exception to the approximately \$1,500,000 representing the price paid by United for the "intangibles" acquired from Western. Among other things, Landis noted: "Any funds used by United in purchasing the certificate for Route 68 may very well require the raising of new capital."

It is very difficult to isolate any one action which may be held responsible for the erosion of United's capital position. The factors previously indicated are far more fundamental and it is probable that their cumulative effect is primarily responsible for the company's present condition. The fact remains, however, that had this route purchase not been made by United, it perhaps would not have been forced to do any current financing.

This is all in retrospect, however. At the time, CAB consolidation of the various transcontinental routes was not yet an accomplished fact. In effect, this gave United the direct entry into Los Angeles from the east it so assiduously sought for years and for which a short time before it paid a high price.

With the completion of the current financing, United will have added to its growing capital structure. As of Mar. 31, 1948, bank loans totaled \$24 million. Such loans will be increased to \$28 million by June 30, 1948, at which time they will be funded at a 2 percent interest rate on a five year basis payable in 20 consecutive quarterly payments. Of the \$12 million in 3½ percent debentures previously sold to insurance companies, \$11,880,000 remain and require semi-annual sinking fund payments until their maturity on Feb. 1, 1967.

► **Stock Data**—There are 94,773 shares of 4½ percent preferred stock outstanding. Previously, these shares were convertible into common at the rate of four common for each share preferred. This rate will now be increased somewhat with the issuance of additional common. This is to protect the preferred against dilution.

Giving effect to the common stock sale, there will be a total of 2,217,705 shares of this junior equity outstanding. Also to be considered in this same category are 37,650 shares of management stock which rank on a par with the common stock.

The increasing capital structure of United necessitates the need of the company to develop sufficient earning power to carry this mounting load.

—Selig Altschul

SALES & SERVICE

How To Reduce Insurance Costs

Jerome Lederer urges attack on taxiing and landing accidents which add up to 63 percent of all claims.

To the frequent complaints of plane owners about high insurance rates, Jerome Lederer, longtime safety engineer and head of the Flight Safety Foundation, gives the obvious answer: cut down accidents and the rates will come down. But he adds a not-so-obvious suggestion on how to reduce claims.

Curtail taxiing and landing accidents which together account for 63 percent of all claims for losses, Lederer says after analyzing insurance costs.

► **Responsibility**—Takeoffs and emergency landings add 26 percent, so that these four classes of accidents are responsible for 89 percent of all the operational claims. Windstorm, theft and fire in that order are causes of most of the nonoperating claims.

Lederer says:

"CAB reports that about one in every eight airplanes meets with an accident of some kind each year. Ninety percent of these accidents involve a major overhaul, or replacement of a major assembly.

"In addition there are an equal number of aircraft that have accidents that

are not reported to CAB. These are fire losses, windstorm losses and similar nonoperational losses. About one in every four or five insured airplanes is involved in an accident each year to the tune of about 30 percent of the aircraft value. This produces a pure rate of 1/15th of each plane lost each year. For a 50 percent loss ratio, this comes to 1/7.5 or a rate of 13 percent which roughly is the rate that prevails."

► **Accident Analysis**—Lederer analyzes 100 taxiing accidents, 100 landing accidents and 100 windstorm loss accidents, all of which took place in New England and upstate New York.

Average cost of the taxiing accidents was \$459, of the landing accidents, \$817, and of the windstorm accidents, \$557.

► **Taxiing**—Of taxiing accidents 37 involved running into ditches, snow or soft ground, 31 were noseovers and noseups while 34 were collisions with various objects, including nine other aircraft and 10 stationary objects. Sixty-six of the taxiing accidents involved damage requiring replacement of a ma-

jor assembly, or worse, and of this number, 22 were caused by commercial pilots, and 26 by private pilots.

Analysis of landing accidents showed that the largest group, 15, was due to spins and stalls. Overshooting or undershooting the field accounted for 14, and collision with fixed objects, 12. Of 86 accidents requiring replacement of major assembly or worse, 30 were attributed to commercial pilots, and 35 to private pilots.

► **Faulty Tiedowns**—Of the windstorm accidents, 69 resulted from tiedowns in the field, of which 15 were complete washouts, and 15 more called for complete overhauls. Only eight of the planes out of the 100 wind-damaged cases studied were in hangars, and three of these suffered only minor damage. Study shows tiedown ropes broke in 22 cases.

In 16 accidents tiedown stakes or anchors were pulled out of the ground. There were six cases of aircraft breaking loose from tiedowns, and striking other planes.

► **Suggestions**—Recommendations offered by Lederer to reduce accidents in the categories studied include:

• **Taxiing and Landing Accidents**—Discourage landings or taxiing on unfamiliar areas but, if they are necessary, study the field's suitability before operating aircraft. Mark soft spots, ditches, mud holes, etc. Do not taxi or fly light planes in strong winds, if avoidable. Taxi slowly, using S turns, keeping stick in full forward position when taxiing downwind and full back when taxiing into wind.

• **Tiedown Wind Accidents**—Use good manila rope of 3/4-in. minimum size. Wooden stakes should never be used. Tiedowns should be anchored by large heavy concrete blocks, equipped with eyebolt and floating ring, providing stable mooring and flexibility to minimize rope wear. Tiedown ropes should be kept taut. Aircraft with lift struts should have clamp-on tiedown ring permanently installed on the struts at the wing.

Lederer states that operators with accident free records or low accident frequency records are good supervisors who check their fields, students, employees, equipment and weather themselves.

He points out that while aviation insurance is showing a premium volume of \$25,000,000, approximately double what it was before the war, it does not loom large in the total insurance picture either in dollar volume or in the number of insurable risks. With high loss ratios in nearly all lines of insurance and with a premium volume that is taxing the facilities of the available surplus capital, insurance companies are watching their aviation risks and limiting them in quantity and quality.



FIRST RYAN FACTORY DEALER SESSION

Texas dealers for Ryan Navions are shown around the table at a recent sales policy conference with Les Bowman, Texas distributor, and T. Claude Ryan, president of the company, at the San Diego home plant. Left to Right: William Fate, vice-president, General Aeronautics, Inc., Ft. Worth; John H. Huett, partner

in Parker-Huett Aviation, Dallas; Leslie H. Bowman, president of General Aeronautics; Cliff Hyde, president, Cliff Hyde Flying Service, Houston; Al Taylor, Hyde sales representative; Ryan; Fred Smith, El Paso; Shelby Kritzer, president, Plains Airport Corp., Amarillo; Fred Williams, president, Williams Air Activities, Tyler.

When you're glad

you have a

Snap-on

... tightening fittings
on electric fuel pump
with a **Snap-on Speeder**

In aircraft maintenance and production, mechanics know that Snap-on tools give them extra speed ... more accuracy ... greater safety.

They know that in Snap-on's complete line of over 4000 tools are the "right" tools for every phase of service and maintenance work

... tiny Midget wrenches for delicate adjustments ... slender Ferrets for reaching

those hidden places ... Masters for the ordinary run ... Heavy Duty and Extra

Heavy Duty for the real tough jobs. No matter what the job may be, there is a Snap-on

wrench or service tool with the design,

balance, fit and toughness that enables you to turn out the kind of a job that reflects credit

on you. Snap-on tools are available

through a nation-wide, direct-to-user tool service, now in its 28th year.



Snap-on Tools
THE CHOICE OF BETTER MECHANICS

SNAP-ON TOOLS CORPORATION

8020-F 28th AVENUE • KENOSHA, WISCONSIN

INTERNATIONAL DIVISION: KENOSHA, WIS., U. S. A.

AVIATION WEEK, June 21, 1948

On the Northrop FLYING WING*



KEEPING pace with the latest innovations in airplane design and construction, Pittsburgh Plate Glass Company is continuing an aggressive policy of developing new airplane Safety Glasses and glazing techniques.

Many modern aircraft, operating successfully under conditions that subject windshields and windows to unprecedented temperatures and pressures, are equipped with safety glass, or laminated transparent plastics, or glass and plastic combinations, developed and produced by Pittsburgh Plate Glass Company.

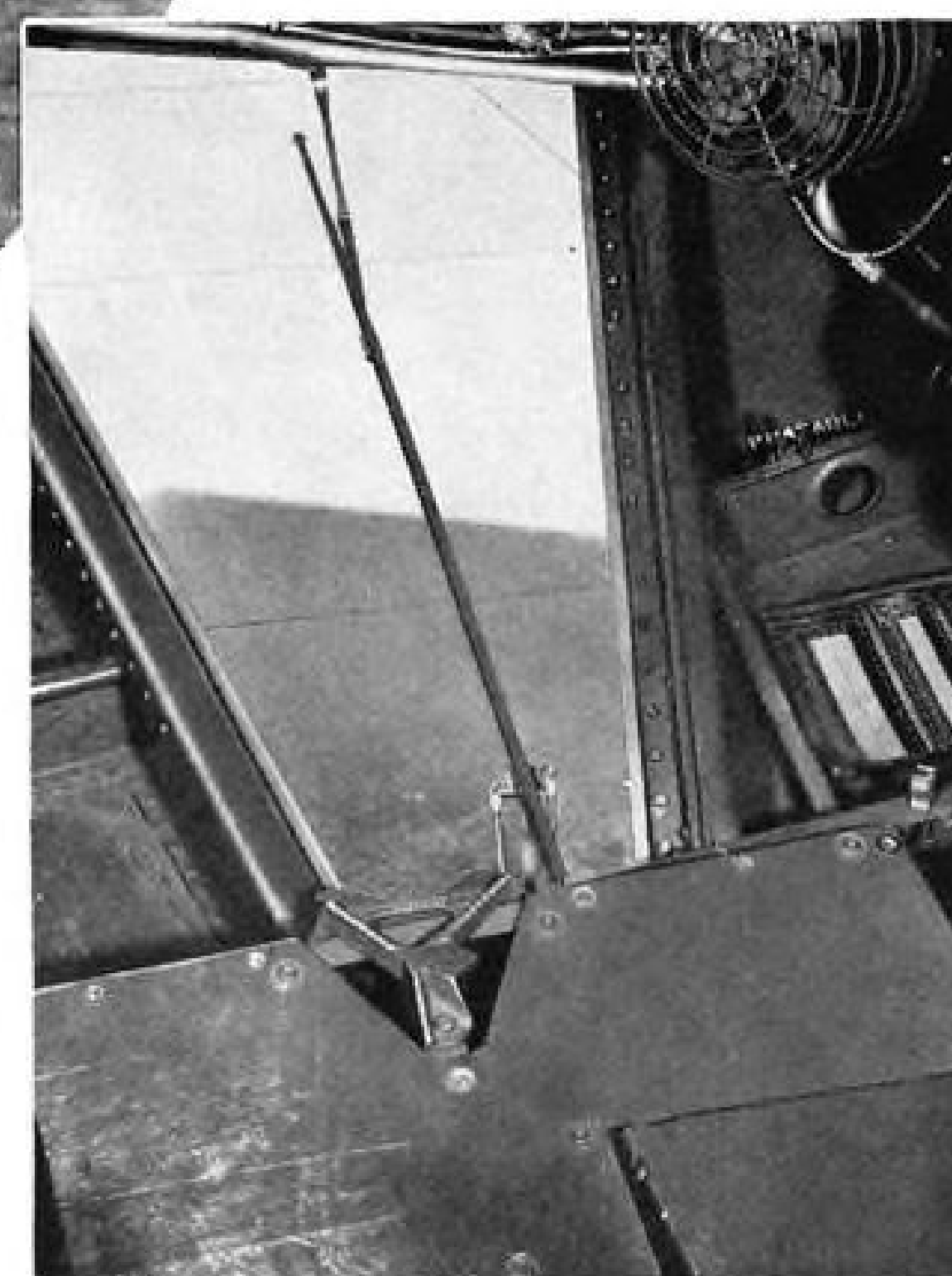
Our unexcelled research and manufacturing facilities, our long years of experience in making quality glass, are at your service. When you are facing new problems which concern airplane glass or glazing, bring them to "Pittsburgh" for solution. Pittsburgh Plate Glass Company, 2257-8 Grant Building, Pittsburgh 19, Pennsylvania.

*Reg. U. S. Pat. Off.



PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY



Through this thick, wedge-shaped window, the bombardier of a B-35 has a clear, error-free view of the terrain almost eight miles below. "Pittsburgh" manufactured this glass to exacting specifications, to meet the requirements of airplanes built to operate at altitudes up to 40,000 feet.



AERONCA SEDAN: POPULAR FOUR-PLACER

Aeronca's bid for four-place leadership, the Sedan, is shown in flight. The Continental-powered 145-hp. craft is roomy and affords wide vision from the pilot's seat. A mini-

mum of instruments on the panel and a responsive control system, in addition to the plane's ability to remain completely under control at speeds as low as 60 mph.,

appeal to prospective buyers of low-price four-place aircraft. Price is \$4795 F.A.F. Craft has a range of 445 miles and a cruising speed of 105 mph.

Flight Training

Prospects good for GI program after rescue by House amendment.

GI flight training may be rescued from pending extinction. Passage in the House of a floor amendment exempting most classes of flight training from classification as "avocational or recreational" pulled the teeth of an earlier amendment which threatened to sink the whole program.

► **Nonrecreational** — Rep. Karl Stefan (R., Neb.) is credited with the saving amendment which stated "training for the purpose of teaching a veteran to fly in connection with his business or

occupation in which he is now engaged or for which he is training shall not be considered avocational or recreational."

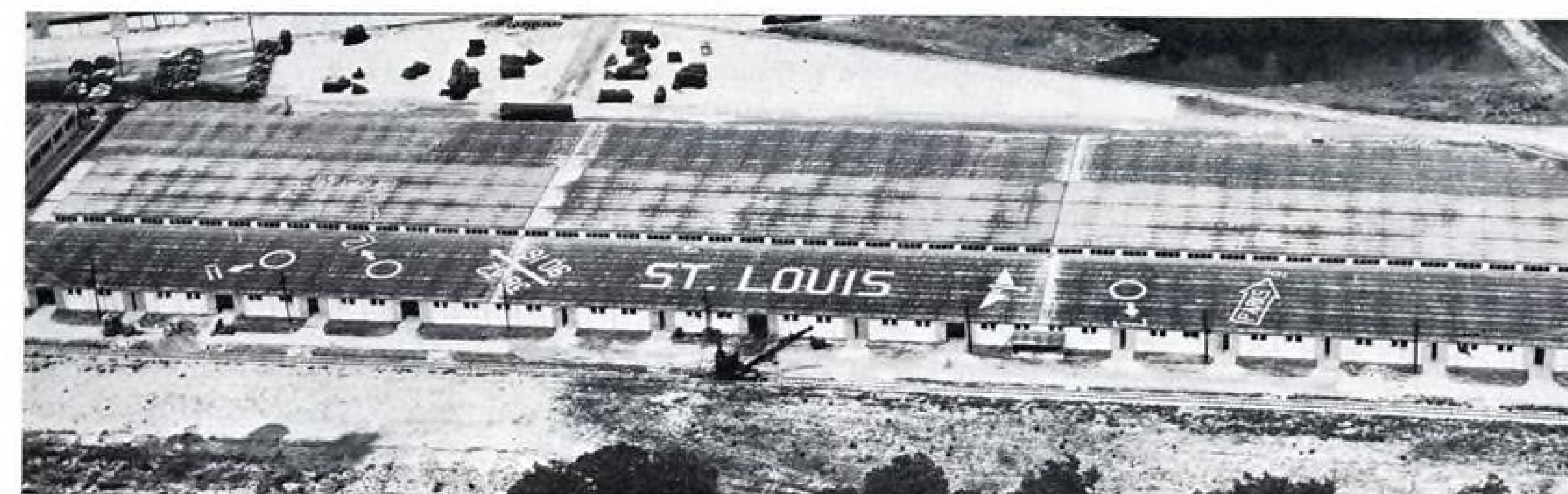
The original amendment had provided that no part of a supplemental appropriation of \$1,979,027,000 authorized for readjustment benefits to veterans "shall be expended for tuition, fees, or other charges, or for subsistence allowance, for any course elected or commenced by a veteran on or subsequent to July 1, 1948, and which is determined by the Administrator to be avocational or recreational in character."

► **Flexibility** — Stefan stated that his amendment "saves the GI flight training program but does not bind the hands of the Administrator in stopping payment of taxpayers' money to teach ballroom dancing and some other

activities."

With the supplemental appropriation bill later safely passed by the House, and due to come up for vote soon by the Senate, observers watched for any possible changes affecting GI flight training which might be made in the Senate. It appeared probable, however, that the bill as passed by the House would be enacted without drastic changes.

► **Interpretation** — Just how broad a flight training program will be possible under the Stefan amendment is a matter for future interpretation. Stefan was asked by Rep. Carl T. Curtis (R., Neb.) if his amendment would make it possible "for doctors and ranchers and others who want to learn to fly in connection with their business or occupation to do so." Stefan replied that



NATION'S LARGEST AIR MARKER?

What is claimed to be the country's largest air marker is this sprawling designation atop the War Assets Administration building in St. Louis. The letters are more than 30 ft. high. Indicative of their legibility

is fact that photograph was taken from 2000 ft. Direction of and mileage to five airports is shown, in addition to direction of true north, latitude and longitude, and name of city. The giant marker is the

work of the St. Louis Chamber of Commerce, Aviation Foundation of Metropolitan St. Louis, who supplied the labor, the Ninety-Nines, and CAA and individual contributors who furnished the paint.

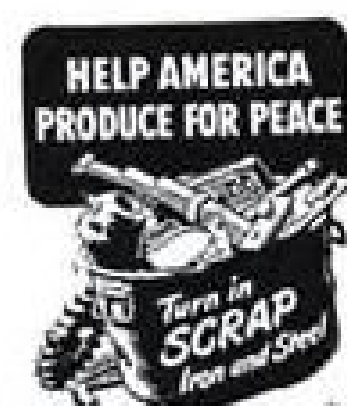
**Whether You Cruise at 85
or Hit A Hot 400 . . .**

there's more **HPR*** in
PACKARD
high-altitude aircraft
IGNITION CABLE

Under all conditions of use—in private, commercial or military planes—Packard high-altitude aircraft ignition cable assures more HPR, more *Hours Per Replacement, because the balanced characteristics of this specially designed cable provide greater resistance to heat, cold, oil, corona, moisture and abrasion. Cable life is longer, engine performance more dependable, when you use the cable of greater mechanical and dielectric strength. Specify Packard high-altitude aircraft ignition cable for more *Hours Per Replacement.

Packard
REG. U.S. PAT. OFF.
TRADE MARK

Packard Electric Division, General Motors Corporation, Warren, Ohio



under the new amendment it would.

Rep. W. J. Miller (R., Conn.) told the House: "We must stop and realize that men may be taking training and education for future work as ranch managers or farm managers and the flying of light planes is very helpful and very beneficial to them in their later work, but that is not their business or occupation today and the language proposed will not help those men, particularly in view of the fact that the [Veterans'] Administration has so clearly indicated its opposition to any kind of flight training."

"Unless this is tied down and it is made absolutely clear that we mean to permit these veterans who are legally entitled to training to take it, I am afraid we will not accomplish our purpose."

Miller offered an amendment which broadened the original Stefan amendment to its final form. It was passed after statements of endorsement by several other congressmen, and with no objection from Rep. Richard Wigglesworth (R., Mass.), chairman of the subcommittee which sponsored the original amendment, or from any other representative.

"Super-Fast" Silvirizing

New twist to Luscombe Airplane Corp.'s silvirizing process for old airplanes is an extra cost "super-fast" service which permits owner of an old airplane to turn it in at Dallas and get an all-metal plane within 48 hr.

Super-fast service, at an extra charge of \$25 per airplane, is planned for convenience of owners and operators living a considerable distance from Dallas. They can turn in the old plane and get the replacement on the same trip. It is estimated that in most cases the "super-fast" service will take less time than it would take to recover and relicense a fabric-and-tube airplane at the home base.

The "silvirizing" program as previously described provides that the owner of any flyable airplane with a Continental 65-hp. engine of dash 8 or dash 8F series can turn that airplane in at the Luscombe plant at Dallas and have its engine, wheels, tires, brakes, tailwheel, compass, altimeter and air-speed indicator removed and installed in a new all-metal Luscombe airframe. If all items named are usable, a \$1000 trade-in allowance is given on the price of the new airframe, and the old plane is scrapped.

Since the program started in March, Luscombe has taken in old Taylorcrafts, Aeroncas, Cubs, and one prewar fabric wing Luscombe. Planes have been flown in for the exchange from as far as Colorado, West Virginia, Ohio and Florida.

BRIEFING FOR DEALERS & DISTRIBUTORS

ARMOUR APPOINTMENT—Appointment of Merrill Armour as liaison officer for federal-state relation of CAB is being recognized in Washington as an important step in this uncharted field.

Armour, a one time prosecuting attorney, familiar with state court procedures, was assistant chief examiner of safety enforcement proceedings for CAB before his new appointment. He has worked with national association of state aviation officials on mutual aviation enforcement problems for the last two years, and has shown a down-to-earth approach on enforcement.

Transfer of a large portion of aviation enforcement to local government is something that appears inevitable with the growth of aviation. Only alternative would be a huge unwieldy federal enforcement octopus.

Local aviation interests watch out for conflicting and overlapping regulations in various localities, and between state and federal agencies. Armour is in the key advisory spot for policy making in this important area.

OUTSTANDING PLANE—Stinson Flying Station Wagon was named the "outstanding personal plane of 1947" of 12 planes covered in a poll taken by the U. S. Flight Instructors Association. A 32-point check list was used, including among other items, operation from small fields, family use, cruising range and speed, passenger comfort, safety, and economy. A bronze plaque from the association was presented to William H. Klenke, Jr., Stinson division sales manager, at a banquet following the recent All-Woman's Air Show at Miami, Fla.

ERCOUPE P-82—A Siamese twin Erco, which is likely to make a lot of pilots take the pledge if they see it unwarned, has been built by Millard Davis, of South-eastern Air Service, Atlanta, by bolting two 1947 model Erco's together at the wingroot and tail. The combination, which looks more like a North American Twin Mustang P-82 than anything else, is being tested by the Thrasher Brothers Air Circus for a novelty act and has an X license from CAA.

The double fuselage aircraft uses right outer wing panel of one plane, the left outer wing panel of the other, and is joined where the two inside metal wing stubs meet.

AVIATION ON THE CAPE—Provincetown, on Cape Cod, has named John C. Van Arsdale, as manager and operator of the new airport being completed at the famous summer artist colony. Van Arsdale, a World War II veteran, for the past three years has been operating Cape Cod Flying Service at Cape Cod Airport, Marston Mills, Mass., and will continue this operation in addition to his new assignment.

The Provincetown Airport, under construction under terms of the Federal Airport Act, is due to be completed about the end of June. By the combination contract as airport manager and operator, Van Arsdale hopes to hold expenses of the airport down to a point where it will be of little if any cost to the taxpayer.

AIRCRAFT RENTAL FORM—An aircraft rental form which is being circulated by NATA in connection with the Association's booklet of safe and sane operating practices for fixed base operators should have a wholesome effect on "buzz-boy" pilots who have to sign it before they can take a plane out.

The renter is asked to indicate his trip, his route, purpose of the flight, his passengers if any, and sign an agreement to use the aircraft only for the purpose and route specified, to permit nobody else to fly the plane, to fly at least 500 ft. above the ground except for landings and takeoffs, to land only at established airports, except as precaution or emergency, to ground check aircraft before takeoff, to comply with federal and state air regulations, to fly only in daylight and contact weather, to return the plane at an agreed time, weather permitting, and to pay for loss or damage to the plane caused by pilot's negligence.

Form is to be checked by a dispatcher, who attests that pilot is qualified to make the flight.

ICE DETECTOR—A carburetor ice detector for personal planes, announced by Lindberg Instrument Co., Berkeley, Calif., is designed to flash a neon light on the instrument panel of the plane when carburetor icing starts to warn the pilot to turn on carburetor heat.

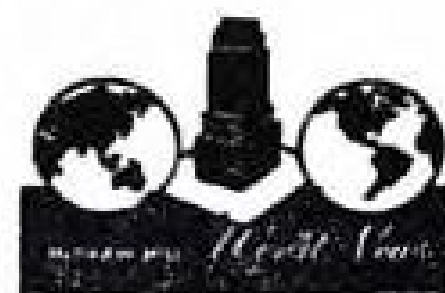
Device uses a pickup probe in the fuel induction system, and an electric circuit. When ice forms on the pickup, the circuit is unbalanced and the flashing light starts.

—ALEXANDER MCSURELY

A black and white line drawing of an airport scene. In the foreground, a small, single-engine propeller airplane is parked on a flat surface. Two men are standing next to it; one is leaning against the tail of the plane. In the background, there is a large, long hangar with a semi-circular roof and several windows. Another smaller airplane is visible inside the hangar's open bay. The sky is filled with stylized clouds.

Copyright, 1948, The Firestone Tire & Rubber Co.

**BUY WHERE YOU SEE THIS
AND SAVE YOURSELF MONEY**



Melbourne Letter:

Australia's Aviation Status Growing

Dispersal of British research means establishment of \$100 million worth of projects Down Under.

Events of the past few weeks highlight Australia's growing status as a junior partner with Britain in aviation research, aircraft production and Empire-wide defense organization.

These events followed so quickly in the wake of the announcement of President Truman's preparedness program that they must be regarded as part of a correlated move being made by the western powers.

► **Major Event**—The major event was the meeting here of the British Commonwealth Advisory Aeronautical Research Council. It was the first meeting since the Council's establishment in 1946. Delegations from the United Kingdom, Canada, South Africa, Australia and New Zealand were present.

Except for a meatless five-pound agenda, announced on the opening day, the proceedings were kept well under wraps.

► **Research Dispersal**—The Chief Scientist of the British Ministry of Supply, Sir Ben Lockspeiser, who headed the delegation of British aeronautical brains, did, however, make no bones about saying publicly that the necessity of dispersing British aeronautical research throughout the Empire had much to do with the conference.

The lid was lifted sufficiently to let out that the equivalent of \$100 million will be spent in setting up Australia and New Zealand as centers of vast aeronautical, radio and radar research.

► **"Rocket Range"**—Research for what? It is no secret that a "rocket range" is being planned at Mount Eba, in Central Australia. And tests with undisclosed radar devices have been in progress in New Zealand since 1946. They are part of the so-called Canterbury Project to which the U. S. contributed much equipment.

The question which Australians would like to have answered now is whether research projects Down Under will remain limited to work which, for geographical or meteorological reasons, cannot be carried out elsewhere. Australians hope to contribute more than their geography—their "wide-open spaces"—to the new defense projects. They want to take an active and crea-

tive part in all phases of aeronautical development.

► **Industry Shift**—The Commonwealth Minister of Defense, J. J. Dedman, has prepared a plan under which Empire aeronautical research scientists would come to Australia for one or two years. He disclosed that the Council for Scientific and Industrial Research has built up \$1,165,000 worth of facilities and is now spending \$500,000 a year on staff and experimental work.

Aircraft, the leading Australian aviation magazine, goes a step further in suggesting that a substantial part of the British aircraft industry be shifted Down Under, in a complete cross-section embracing research, design, development and production.

► **Wind Tunnel**—That British authorities are seriously toying with the idea is evident from the disclosure that a wind tunnel for speeds up to 1873 mph. will be built in Australia. Because of the immense power requirements of such an installation, estimated at 25,000 hp., Tasmania has come under consideration as its site because the island state can provide cheap hydroelectric energy.

Meanwhile, the Empire confab has put fresh steam on the rocket range project. After the publicity ballyhoo of the last eighteen months, you might fancy rockets swooshing by now across the Central Australian desert. Instead it is announced that "major progress" in the construction work is expected within the next nine months. Only a couple of weeks ago the Cabinet earmarked the first \$11-million for the project, and that is for preparatory work only.

MILITARY PLANES FIRST?

A British factory representative was sore recently about "certain interests" who tell Australians that British firms can't deliver the civilian planes they want. The Sydney Sun is authority for the statement that Britain has sent urgent confidential cables to advise that plane production for defense is again a No. 1 priority in England. That strikes a grim note for Australia's civil airlines. For almost a year they have

not been able to squeeze enough dollars out of the Commonwealth Bank to place orders for a single plane in the U. S. And it does not look as if Australia will be rolling in dollars very soon.

► **Disappointment**—American plane exporters who bank on the replenishment of the dollar pool under the Marshall program may be in for disappointment. There is no hint yet that Australia will be able to import from the U. S. at the risk of dollar overdrafts or that Britain would use Marshall dollars to cover such overdrafts.

Officials here are talking in terms of five years when discussing the probable duration of the dollar crisis. A lot of things may happen in five years, but at least for the immediate future the sales prospects are bleak. Australia will have to scrape the bottom of the barrel to pay for its imports of spares, parts and aviation fuel.

LAMS IN TROUBLE

London Aero Motor Services has had no end of trouble since its debut in Australia. Previously, the only Southern Hemisphere base of the air tramp service had been South Africa. The crew has deserted a converted Halton Halifax bomber, one of the LAMS freighters, and creditors are now trying to seize the \$50,000 craft as security for unpaid debts.

World News Briefs

LONDON—

Society of British Aircraft Constructors donated \$1600 to Britain's gliding association to send a team to compete in the 1948 F.A.I. International Gliding Contests at Switzerland in July. . . . Five British manufacturers are engaged in developmental work on eight different types of helicopters. One cop-ter is expected to go into production in October.

DUBLIN—

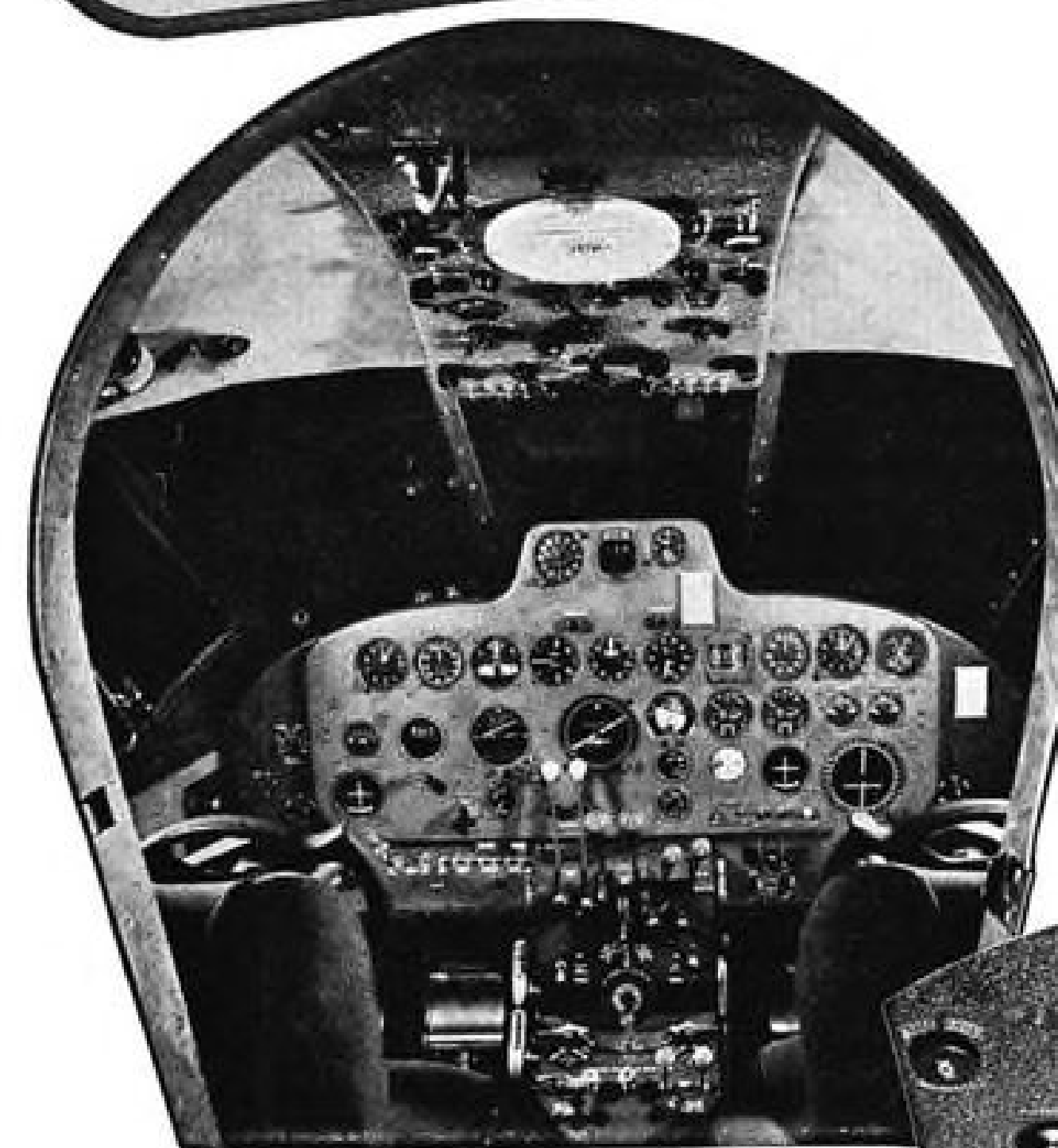
Aer Lingus passenger traffic for April numbered 13,191 or 127 percent over the same period last year. More than 50 percent of the traffic was on the London route.

STOCKHOLM—

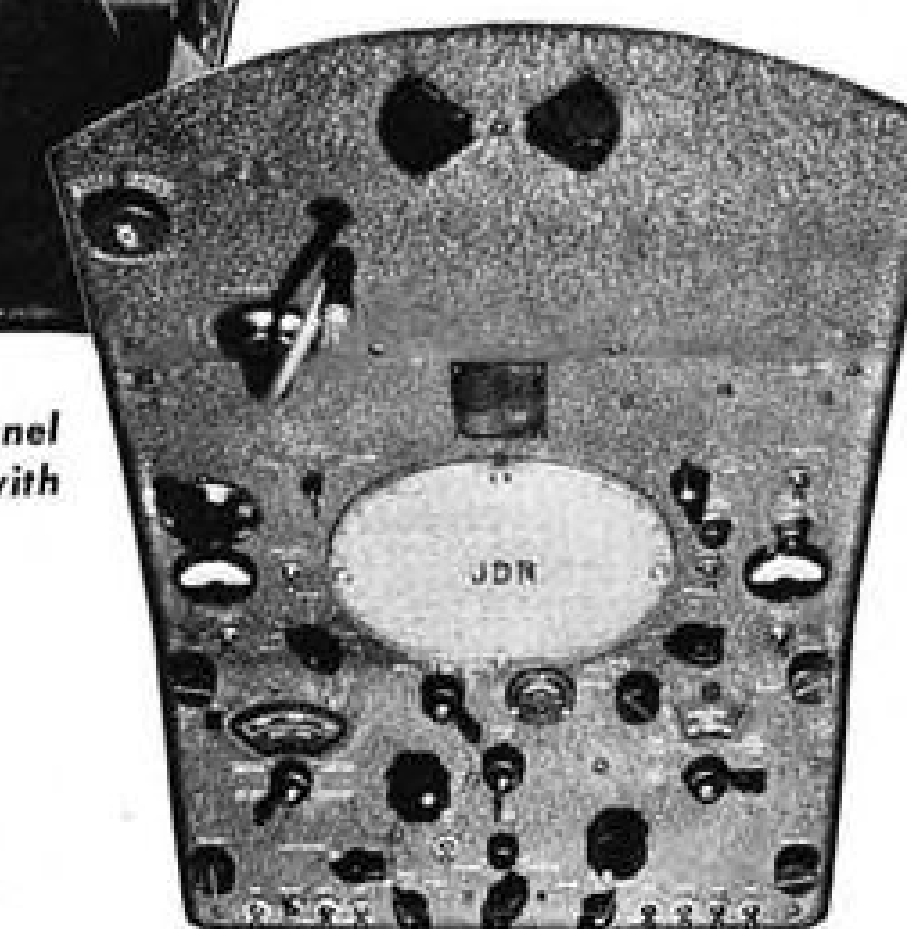
Sweden's Boliden Mining Co. plans to use airplanes to prospect for copper, lead, gold and silver ore near the Arctic Circle. . . . The Saab plant has received an order from Swedish Airlines for 10 twin-engine Scandias to be delivered in 1949. Cost will be more than \$4,000,000. The Scandia will be used on domestic and European runs.

IT MAKES THE BEST.

Airplane BETTER



J. D. Reed Custom-Built Unitized Radio Panel installed in a Beechcraft 1948 Model D18C with close-up view at right.



**A UNITIZED RADIO PANEL
CUSTOM-BUILT FOR YOUR PLANE**
With a J. D. Reed Custom-Built Unitized Radio Panel you are ready for all-weather flying with the added safety and convenience provided by such operational features as:

- ... VHF radio communications and navigation in addition to standard aircraft facilities . . .
- ... Cockpit loud speaker system to lessen pilot fatigue . . .
- ... Ship-to-shore telephone for direct communication with those on the ground . . .
- ... Cabin radio with clear reception and fine tonal qualities for passenger entertainment . . .
- ... And latest scientific instrument landing controls.

Call our nearest office for full information on a J. D. Reed Custom-Built Unitized Radio Panel designed for your present plane or any you expect to buy in the future.



The South's Finest Aircraft Service organization invites plane owners to make our offices and hangar facilities your southwestern headquarters where you will find prompt, efficient and courteous service along with full information on all Beechcraft models.

- BEECHCRAFT SALES AND SERVICE
- SUPER AIRCRAFT REPAIR STATION
- AIRCRAFT PARTS
- GASOLINE AND STORAGE
- AIRCRAFT RADIO DISTRIBUTORS AND SERVICE
- CHARTER SERVICE
- AIR AMBULANCE SERVICE
- INSTRUMENT SCHOOL — LINK TRAINER

J.D. REED CO. Inc.
SALES SERVICE
Beechcraft
DISTRIBUTOR

HOUSTON—Municipal Airport, Wy 9-1201 • DALLAS—Love Field, Dixon 4-2791 • NEW ORLEANS—New Orleans Airport, CR 2990

5,000,000 Youngsters

Need Our Help Now

THE bumper wartime crop of babies, about 5,000,000 larger than the population experts expected, is reaching school age.

At school these youngsters should find a good education awaiting them. That is their most cherished American birthright.

But unless something is done quickly, millions of these children will be cheated. They will crowd into classrooms already run on double shifts. They will move in with children who are now sitting two in a single seat. They will read germ-loaded books mangled by a generation of use by grimy hands.

I

So the continuing crisis in American education is given a new twist by unexpected pressure on school plant and equipment.

The U.S. birthrate has jumped by leaps and bounds. Instead of declining in the '40s, as the experts expected it would, the rate climbed from 17.9 per thousand in 1940 to 21.5 in 1943. It jumped to 25.9 in 1947, an increase of 45 percent since 1940. Result—by 1956 elementary school attendance in the United States is expected to jump from 18,200,000 to more than 23,400,000, an increase of about 5,200,000, or more than one-fourth.

The rush has already begun. It will pick up speed next fall.

Now, while this pressure has been building up, our public schools and their equipment have been running down—first through inevitable wartime ne-

glect, then because inflation and material and labor shortages made it difficult to catch up.

If we are to give this bumper crop of youngsters the break they deserve—and reach the educational standards the nation needs—we must speedily do a major job of educational rehabilitation and expansion.

II

Some headway has been made in overcoming the teachers' salary crisis.

Teachers' salaries are improving. Pay problems were driving good teachers away from their posts in droves not long ago. But in the year since the 57th editorial in this series emphasized that crisis, the average teacher's annual salary has increased about \$300—from \$2250 to \$2550.

True, increases vary enormously from state to state and from town to town. In a few states the average increase has been \$500; in some less than \$100. But, for the nation as a whole, last year's increase put teachers about even in the race with the cost of living. After taxes, their salaries have risen 68%, and the cost of living 67%, since 1939. In terms of pay increases, however, they are not nearly as well off as are industrial workers, whose average weekly wages after taxes have risen 108% since 1939. They are far behind farmers, whose net income is now four times what it was in 1939. And teachers had notoriously low salaries to start with.

A great deal more needs to be done in raising salary standards to put our school system on a firm footing. There are still about 100,000 teachers, nearly 12% of all public school teachers, who hold temporary or emergency credentials. They cannot meet

prevailing standards, and not very severe standards at that, for persons holding their posts.

The salary crisis, however, is easing.

III

But now comes the new crisis in school buildings and equipment.

We would have been hard put to get our schools back into shape after years of wartime neglect—even without a booming birthrate complicating the problem. Right now, 85% of all public school buildings need major remodeling to remove health and safety hazards.

And we aren't building enough new schools to keep up with current needs, to say nothing of catching up on those we were not able to build during the war years. School construction expenditures for 1948 are estimated at \$375 million—which is less than what was spent in 1939. With building costs twice as high as they were in 1939, that means we aren't even holding our own—we are falling further behind.

And now comes the rush of war babies.

IV

We must spend at least \$11 billion on new schools and equipment in the next decade.

Public and elementary schools must have \$6.6 billion. Equally important, another \$4.4 billion must be invested in buildings and equipment in our private schools, colleges and universities if they are to meet the demands which will be made upon them. The private school and the privately endowed university are doing their full share and doing it well. The need for them is increasing.

These figures cover only rockbottom needs for educational plant and equipment. But statistics are a very restricted recorder of this crisis.

You can see it better, I'm sure, in schools not very far from your home. There are schools with leaking roofs and outdoor toilets in our greatest cities. There are schools where students still use histories and geographies copyrighted before 1920—books with no

mention of World War I, the depression of the 1930's, the Russian Revolution or the rise of the dictators. There are countless schools where modern methods of visual education are completely unknown.

All of these conditions promise to get worse—promptly—as that scheduled 5 million increase in the school population gets rolling.

V

The Metropolitan Life Insurance Company does not indulge in lurid prose. It says after painstaking study of the educational crisis that:

"Unless definite measures are taken immediately . . . large numbers of American boys and girls will be deprived of an adequate education."

Currently we are deeply concerned about our military defenses. We are taking, and I think rightly, emergency measures to strengthen them. But we must regard our schools as a part of our national defense as vital as are our armed forces. This is particularly true in these times of fifth columns and ideological warfare.

If we are wise, we will raise our sights. We will give the continuing crisis in education the same urgent attention being given the more obvious but no more real crisis in national defense.

Go to the school house in your neighborhood and discover what needs to be done to provide for the rising tide of young Americans. Ask your school board and your school administrators and teachers how you can help them.

That is good citizenship.

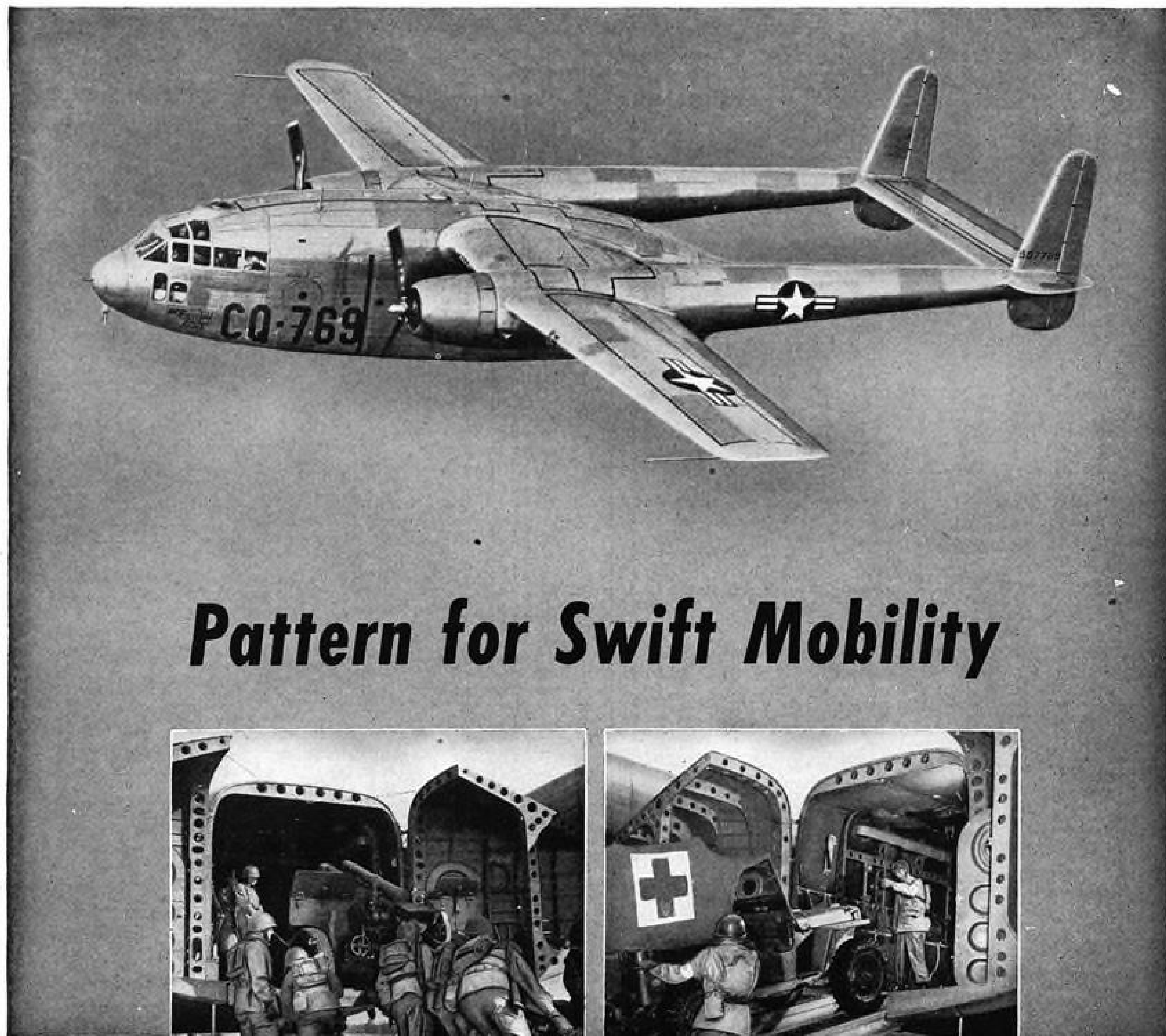
That is patriotism.

That is our duty to the oncoming generation.



President, McGraw-Hill Publishing Company, Inc.

THIS IS THE 68TH OF THE SERIES



Pattern for Swift Mobility

Speed is a prime essential in the modern concept of military maneuver. And speed, today, has to have wings.

In cooperation with the Air Forces and the Ground Forces, Fairchild research and engineering skill help provide those wings.

The rugged, hard-working C-82 Packet is now in service with the Troop Carrier Command as the standard transport for troops and guns, trucks and

supplies. Its fitness for this important assignment was demonstrated in practical maneuvers such as Operation Yukon and Exercise Snowdrop.

Now, Fairchild engineering ingenuity has created the C-119—a new Packet that flies faster and farther and carries an even greater load.

In these two airplanes our military minds have found new answers to old problems, and around them have built a new pattern for swift mobility.

Fairchild Aircraft

Division of Fairchild Engine and Airplane Corporation, Hagerstown, Maryland

AIR TRANSPORT

Land Hits at Bankers, Controls

ATA head blames military congestion over airports; urges regulation responsibility shift to airlines.

The military services, bankers and over-regulation by the government were cited as primary causes of some current airline difficulties by Vice Admiral Emery S. Land, president of the Air Transport Association. Land spoke before the recent meeting of the Society of Automotive Engineers at French Lick, Indiana.

Discussing financial difficulties of the airlines, Land said the increased costs of post-war airline operation had disrupted airline post-war financing programs that were planned in 1944.

► **Banker Troubles**—“Something that isn’t so evident are the difficulties caused by some of our banking institutions,” he said. “Carried to the extreme some evidence occasionally arises to the surface wherein our banks appear to be wanting to buy an expensive coffin for the price of the screws in the lid. They believe in the future of air transportation so strongly they want to be in control of it.”

Land cited records from Washington National Airport that showed 40 percent of all instrument landings there were made by military aircraft and asserted that “much of the so-called stacking at congested airports is due to our beloved brethren in the military services.”

He suggested that military aircraft be required to land at airports far removed from regular commercial terminals “rather than delay from 30 to

several hundred civilian passengers.”

► **Reduce Regulations**—Land recommended a reduction, simplification and clarification in present government regulation of the air transport industry to ease the present burden of over-regulation.

He also urged a shift in responsibility for regulation from the government to the airlines.

Land took a dim view of any increase over the current size of airline transports, noting that “we might well learn a lesson from the railroads and buses noting that they chose a multiplicity of units rather than great increases in unit size.”

► **Route Survey**—“The fools school of experience is a costly way to become educated, so long as our eyes and ears are working,” Land noted. “Both from an economic point of view and from the standpoint of safety it appears to me that the air transport industry might carefully consider these matters before putting too many eggs in one basket.”

Both domestic and international airline route structures could be improved by a survey of the situation as proposed by the President’s Air Policy Commission, Land said. Some stepping on toes would be inevitable in such a survey, he believes, but the improvement in efficiency and airline economics in a route realignment would be worth the trouble.

► **Weather Hazard**—Land said weather

is still the biggest obstacle in achieving the airlines goal of “dependability with safety” but that substantial progress was being made toward all-weather flying. From the airlines point of view, Land said the implementation of the all-weather airways system recommended by the Radio Technical Commission for Aeronautics and endorsed by the Congressional Air Policy Board was the most important recommendation to come from the Board.

Defending the scheduled airlines against charges that they are a monopoly, Land said:

“With 33 scheduled airlines in the picture how can there be a monopoly? If that’s a monopoly then I’m an aborigine. The truth of the matter is that there is too much competition, not too little.”

Foreign Traffic Analyzed

Three-to-one preference by trans-Atlantic passengers for U. S. airlines over foreign air carriers, is shown in a recent Civil Aeronautics Board study on Atlantic air traffic competition.

In 1947 there were 194,236 airborne trans-Atlantic passengers of which 141,703 or 73 percent traveled via the three U. S. lines and the other 52,533 or 27 percent traveled on the five foreign airlines.

The figures are more significant when it is recalled that it shows a reversal of the ocean travel trend that prevailed for many years when foreign steamship lines carried approximately 90 percent of trans-Atlantic passengers.

► **Majority Foreign**—Analysis shows that the majority of Atlantic air passengers were foreign citizens, 105,704 in 1947 out of the 194,236 total, and that more than 67 percent of these traveled on the U. S. airlines, while of American citizens, nearly 80 percent chose the U. S. air carriers.

These statistics also show a reversal in travel trend, M. F. Redfern, vice president of the Air Transport Association, and secretary of Air Traffic Conference, points out.

Ten years earlier, U. S. residents contributed 72 percent of the total revenue for waterborne trans-Atlantic passenger travel.

A breakdown of trans-Atlantic air passengers between New York and nine major competitive foreign stations during September, 1947, reveals two important new names in international travel, Prestwick, Scotland, and Shannon, Ireland.

These six stations had a total of 15,457 passengers. London was first with 6154 passengers; Paris was second with 2401 passengers; Shannon, one of the new ports, was third with 2024. In fourth place were three cities—Stockholm, Oslo and Copenhagen.



STRATOCRUISER TESTS SHIFT TO WICHITA

When strikes halted work at Boeing Airplane Co.’s Seattle plant these three Stratocruisers were flown to Wichita, Kans., for completion of their accelerated flight test

program. The double-deck, 75-passenger craft dwarf the B-29s in the background which are undergoing modernization by the Boeing Company at Wichita.

Flying Boats

Nonsked finds greater passenger capacity is advantageous.

The veteran 42-ton Boeing 314 flying boats formerly operated by Pan American Airways and British Overseas Airways have refused to leave the limelight despite their retirement by the scheduled air carriers.

One of the huge four-engine craft obtained front-page publicity last October when American International Airways' "Bermuda Sky Queen" with 69 persons aboard was forced down and abandoned in mid-Atlantic after running short of gasoline. A sister ship made news late last month when it effected an emergency landing at the head of Chesapeake Bay with 82 Puerto Rican passengers and a 12-man crew aboard.

► **New Carrier**—The latest incident focused attention on World Airways, Inc., Baltimore, which has acquired seven of the 12 Boeing 314s built just prior to World War II. President of World Airways is J. Stewart Robertson, who was head of American International Airways when that carrier lost the Bermuda Sky Queen.

Robertson's new company reportedly is an entirely different organization with different capital. It purchased American International's four remaining Boeing 314s and recently acquired the three planes formerly used by BOAC on its Baltimore-Bermuda run.

World Airways began nonscheduled and charter operations on the New York-Baltimore-Puerto Rico run in May. Ability of the Boeing 314s to carry upwards of 80 passengers may give the company a tremendous advantage over other uncertificated carriers on the route.

► **Operating Restrictions** — Operating under CAB's nonscheduled exemption, irregular air carriers are forced to keep their flights between any two points at a minimum in order to avoid the possibility of establishing a regular pattern of service. Thus an irregular operator conceivably could violate the nonscheduled exemption by flying more than one trip weekly between New York and Puerto Rico.

With its Boeing 314s, World Airways can carry nearly twice as many passengers as a DC-4 operator and more than three times as many as a DC-3 operator in making the maximum number of trips permissible under the nonscheduled exemption.

► **Odom Is Pilot**—Piloting the flying boat which made the emergency landing in upper Chesapeake Bay was Wil-

liam Odom, round-the-world speed flyer, who had been working for World Airways about three weeks. The plane was bound from Puerto Rico to New York, but bad weather prevented landings either there or at Baltimore, to which the craft returned.

After landing in the bay, Odom attempted to taxi about 60 miles to Baltimore, but the plane struck a mudbank. After being pulled off by a tug, the craft was flown to Baltimore and then took off for New York with its 82 passengers.

TWA Changes In Personnel

Resignation of Col. Leonard M. Rose, director of TWA's Overseas Region, has been announced by Board Chairman Warren Lee Pierson. Col. Rose, who was based in Paris, will enter private business.

TWA also announced appointment of John E. Harlin as superintendent of flying for overseas operations with headquarters at New Castle, Del. Harry E. Campbell, formerly assistant superintendent of flying at Kansas City, has been named chief pilot for the Atlantic region of TWA's overseas operations.

► **Other personnel developments:**

American Overseas—Jacques de Sibour has been appointed European sales manager with headquarters in London. Formerly regional traffic manager for AOA in Paris, de Sibour replaces William F. Muller, who resigned to become president of Air Express International, Inc.



AIR TRAFFIC PROMOTION

Airmail and international air parcel post promotional activities are the main topics of discussion at this meeting between Harold Cray (left), vice president in charge of traffic and sales for United Air Lines and Paul Aiken, second assistant postmaster general. Cray acted as chairman of the Air Traffic Conference advertising committee when it met in Washington, D. C., at the Carlton Hotel.

Civil Aeronautics Board—Kay Alger has become confidential assistant to Chairman Joseph J. O'Connell, Jr., and Robert E. Redding will become confidential assistant to Member Russell B. Adams on July 1.

Challenger—William R. Crismon, acting operations manager, has been named operations manager. Company also announced that Capt. L. Scott Keller was appointed chief pilot in Denver. O. A. Byrne, former public relations director, has been named assistant to the president.

Delta—Robert L. Griffith, formerly assistant secretary of American Airlines, has been appointed assistant to President C. E. Woolman.

Eastern—Samuel H. Newbill has become director of the research department succeeding Alex Hart, who resigned to become director of research for the Port of New York Authority.

National—Rita M. Bundy has been named chief stewardess.

Northeast—Eugene Ostheimer has resigned as assistant general sales manager.

Panagra—named George F. Sorgatz, Jr., advertising manager.

Charles A. Rheinstrom, Inc.—G. W. Lup-ton, Jr., formerly vice president and general manager of Santa Fe Skyway, has become associated with the New York consulting firm.

Emergency Potential Air Lift Noted by ATA

Scheduled U. S. airlines now are able to make available to military services more than 10 times the emergency air lift they had at the beginning of World War II, Robert Ramspeck, Air Transport Association executive vice-president reported recently. Emergency potential would be 351,000,000 ton miles a month, or 2,500,000,000 passenger miles a month from the current fleet of 976 planes including Constellations, DC-6s, DC-4s, Martin 202s, Convair-Liners and DC-3s. This compares with 1941, when the scheduled airlines fleet of 359 planes, mostly DC-3s, provided an air lift of 34,000,000 ton miles a month.

Pallet Loading Standardized

United Airlines has announced plans to standardize pallet cargo loading throughout the system, following extensive tests at high volume freight points along the 10,700 mile airway. Pallets used are 30 by 36 in. magnesium metal bases on top of which bundles and packages are secured, and similar bases complete with metal cages.

Glyn Johns, superintendent of cargo equipment, says about 90 percent of cargo traffic can be palletized, and it is particularly adaptable to high value shipments under seal.

Test loadings in the past year indicate that an hour can be cut off loading time on a transcontinental cargoliner flight by using the pallet system, with impressive resultant savings in manpower and revenue.



FROM IMPERIAL ROBES TO CALCULATORS

Air express shipments emphasize the gamut of commodities. SABENA Belgian Airlines' all cargo plane (left) is being loaded at La Guardia Field with a complete new wardrobe for Emperor Haile Selassie I of



Ethiopia. Somewhat on the heavier side are the all-electric calculators (right) which are shown being checked in prior to loading aboard an eastbound freighter operated by Slick Airways.

Floor Under Airfreight Rates

CAB sets July 1 as effective date for minimum rates in order overruling certificated line objections.

Minimum airfreight rates—generally favored by all-cargo lines and opposed by the certificated carriers—will go into effect July 1.

In setting the date for placing a floor under airfreight tariffs, CAB reaffirmed its tentative opinion of last April, which held that current charges are in many instances so low as to endanger the sound development of the industry (AVIATION WEEK, May 3).

The Board prescribed minimum rates of 16 cents a ton mile (airport-to-airport) for the first 1000 ton miles and 13 cents for all ton miles in excess of 1000 in any one shipment.

► **Opposition Arguments**—Certificated carriers, in opposing issuance of CAB's final order, contended that the scale of minimum rates would place freight forwarders in a dominant position, that savings on volume shipments do not warrant the three-cent differential, that freight will be driven into all-cargo planes (at the expense of combination passenger/cargo planes) and that the 16-cent minimum will discourage volume shipments on short distances. The Board said these arguments and others were to a large degree restatements of issues previously brought up and ruled upon.

Slick Airways, largest of the independent airfreighters, has indicated belief that the minimum rates set by CAB

are reasonable and workable. But it emphasized the need for Board approval of specific commodity rates lower than the 13 cent minimum in order to build up traffic on the backhaul. CAB has recognized that such specific commodity rates may be required and will approve them where they are found desirable.

► **Light Eastbound Loads** — During 1947, Slick had an overall 78.9 percent load factor, but this included a 95 percent load on east-west hauls contrasted with only about 65 percent on west to east and southwest to midwest and east flights. The all-cargo carrier does not believe the new minimum rates will greatly affect westbound traffic but that they would seriously reduce eastbound loads.

Now operating with 11 C-46s, Slick plans to add 10 more shortly. Without low specific commodity rates to attract extensive backhaul traffic, the company does not believe the extra equipment can be utilized profitably.

► **Past Experience**—About 17 percent of Slick's traffic was handled at low specific commodity or deferred rates during the first four months of 1948. Specific commodity rates desired by Slick after July 1 would range from 50 to 85 percent of the general commodity rates (under which CAB has now set a floor) and would apply only to shipments of

300 lb. or more. Items covered under the special rates would include vegetables, fruits, aircraft parts, furniture, seafood, sheepskins, phonograph records, rugs, drugs, meat, chemicals and other products.

Setting of the minimum general commodity rates coincided with a Slick announcement that it had flown more than 3,000,000 ton miles of freight in May—a new domestic record. Previous high—also set by Slick—was 2,519,871 ton miles last October.

Taca Files Salary Report

Taca Airways, S. A., Mobile, Ala., disclosed in its annual report filed with the Securities and Exchange Commission that Jack A. Thornburg, president and executive vice president of the company and its subsidiary, Taca Airways Agency, Inc., received a salary of \$14,554.60 last year.

Covering the fiscal year ended Dec. 31, 1947, the report also listed the following officers and their salaries: Benjamin M. Watson, executive vice president of the company and its subsidiary, \$8541.59; and Philip M. Wilcox, vice president of the company and its subsidiary, \$8333.30.

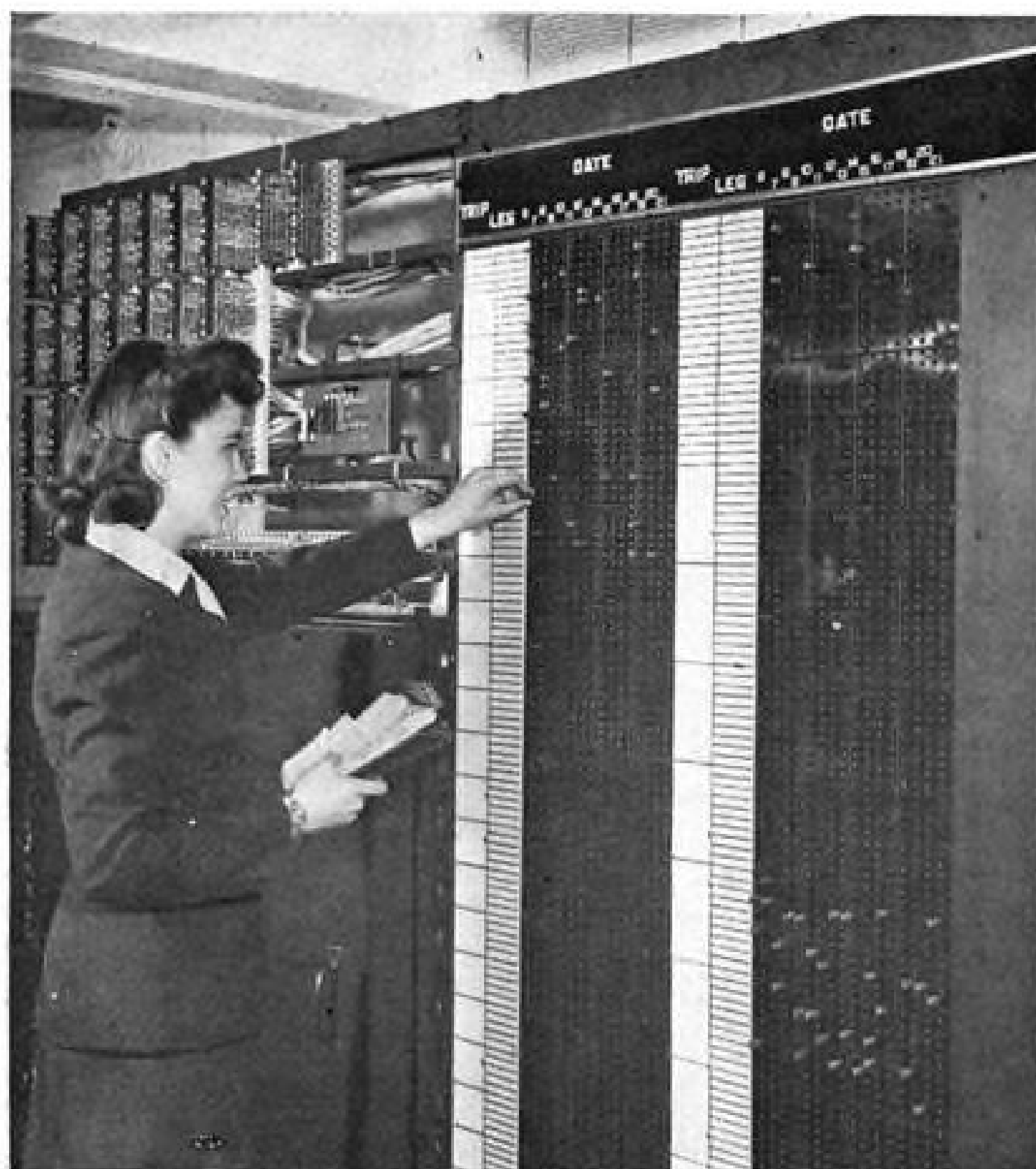
Aggregate remuneration of the company's twenty-one officers was \$72,387.81. There was no mention of any financial remuneration for Paul E. Richter who was named president of the company last September.

The report disclosed that Transcontinental & Western Air, Inc., as of April 1, 1948, held 335,000 shares of Taca's \$5 par value capital stock, or 22.19 per cent of that class of stock. Taca has been authorized to issue 2,000,000 shares of capital stock. It has 1,509,914 shares outstanding.

The following holdings also were disclosed: Robert L. Reed, director of the company, 700 shares beneficially owned; Samuel J. Solomon, director, 1000 shares beneficially owned; Frederick M. Peyser, director, 46,028 shares of record and 20,498 shares beneficially owned; John D. Warren, director, 11,180 shares of record. Peyser and Warren are partners, respectively, in the firms of Hallgarten & Co. and G. H. Walker & Co.

Eastern Sued

Two suits totaling \$400,000 have been filed against Eastern Air Lines in U. S. District Court, Greenville, S. C. One is for \$250,000 in the death of William A. Moorehead, Goldsville, S. C., textile executive. The other asks \$150,000 for the death of Shelburn M. Warner of Clinton. Both men were killed in an airplane crash near Washington, D. C.



THE "RESERVISOR," American Airlines' electronic device, was developed by AA personnel after the war. Operated by push-button, the unit gives space availability on any one of 1000 flights for 16 days in advance.



THE INTELEX, International Telephone & Telegraph Corp.'s electromechanical "brain," is a streamlined unit designed to handle requests for space in a matter of seconds. Bookings are recorded and reserved automatically.

Untangling Reservation Red Tape

The "Intelix," I T & T's electromechanical unit, is newest device to be used for speeding airline reservations.

Airlines are trying to keep pace with the steady climb in passenger traffic by maintaining reservation services geared to the growing demand for space.

Speedy operations and minimization of error are what they strive for. Most lines feel their present systems meet those aims under present traffic conditions. But they are always on the lookout for possibly better methods to handle what they hope will be a traffic increase in the future.

► "Intelix"—International Telephone and Telegraph Corp. claims to have such a better method in a complex electromechanical unit called the "Intelix." Put together from standard telephone parts, the device is located at the center of an airline's reservation system. It records and reserves space automatically. Ticket offices throughout the airline's network are connected to it by teleprinting machines, which feed requests for space to the unit. When a booking (out-going or round-trip) is requested, the Intelix automatically checks available space and sends back an answer, offering booking on an alternative flight if space on the

desired flight is closed. Off-line requests may also be teletyped to the Intelix. Code-symbols inform the machine to turn the message over to a special operator who handles off-line space.

It is also possible for any person within the system to learn from the Intelix the number of seats sold or available on any leg of any flight at any time. Provision is made, too, for a "broadcast circuit," whereby the machine warns all stations periodically and automatically that a given flight has been sold out or is approaching that stage.

► "Reservisor" — As a contrast to IT&T's intricate mechanism is American Airlines' "reservisor," an electronic device operated directly by push button. Upon a request for space, the reservations agent presses a series of buttons, representing the date and flight number on a reservisor keyboard. A master control board determines the correct answer, transmits it back to the keyboard, and the agent reads the answer by means of the flashing lights on the board.

American has a reservisor in its Bos-

ton office, and plans to make similar installations throughout its network.

► "One Call Does It All"—Eastern Air Lines' "one-call-does-it-all" set-up involves no electromechanical devices. The entire system is made up of a series of manual operations. A space advisory board lists the availability of space and indicates whether or not a ticket agent will have to request that space from the terminal control offices located at either New York, Miami, Atlanta, or Chicago. These offices control space on a predetermined number of flights that go through their territory.

► "Speed Reservations"—Under United Air Lines' "speed reservations system" (AVIATION WEEK, May 24), ticket agents sell space on given trips until flights are completely booked, at which time, the Denver center—where all stops on United's system are controlled—sends out a "stop-sales" message. As soon as seat sales are made in the various cities, they are reported to Denver by private telephone or teletype lines.

► "Teleflite" — Trans World Airlines' "Teleflite" system hinges upon the main control point at Kansas City, where master charts on all flights are maintained. Kansas City feeds out the status of flights to control boards located in each of TWA's local offices. Flashing lights on the control board indicate space availability to a reservations agent. If a white light is signaled, the agent may confirm space imme-

diately. Red indicates that a flight is sold out.

Most of these systems have been developed by trial and error methods and have expanded as the airlines themselves expanded. IT&T, however, claims to offer a uniform system which is usable by all airlines. The Intelix is so devised that any number of airlines using it could plan to have their separate networks inter-operate.

Certificate Extension Sought by Feeders

The feeder lines are pressing bids for a longer lease on life.

Pioneer Air Lines, the oldest short-haul carrier, is seeking a permanent operating certificate to replace the temporary franchise which expires in November, 1949. And CAB has instituted investigations to determine whether two Rocky Mountain feeder lines' certificates should be extended for about a year.

► Subsidy Factor—Active since August, 1945, Pioneer told CAB it is providing an efficient service contributing to the sound development of domestic air transportation and that it has demonstrated a "lessening tendency" to rely on the government for mail pay subsidy.

"Continued operation under a temporary certificate presents many difficulties, and they become more numerous and more critical as the period of the temporary franchise draws to a close," Pioneer declared. "The problem and cost of providing capital, the high rate of charges of amortizing capital expenditures, the difficulty of attracting and holding competent personnel, the question of the scale of future advertising and promotional programs are but a few of the more imperative issues confronting us. And all lend themselves to a simple solution under a permanent certificate."

Pioneer said the 24 cities it serves have spent considerable money improving their airport facilities and are entitled to know as soon as possible if PAL operations are to be continued or abandoned. Other feeders are expected to apply for permanent certificates in the near future.

► Certificate Extensions — Challenger Airlines and Monarch Air Lines are the carriers whose certificates may be extended for a year through a pending CAB investigation. Without revision, both certificates would expire Mar. 31, 1949.

Actual operations by Challenger did not begin until May, 1947, although its certificate (like Monarch's) was issued in March, 1946. Thus, without an extension, Challenger would be

active only a year and ten months under its present three-year franchise. Monarch began service in November, 1946.

Meanwhile, CAB members are making personal informal inspections of feeder operations. A trip by Board Member Harold A. Jones last month covered Monarch, Challenger, Pioneer and Trans-Texas Airways, as well as Los Angeles Airways' helicopter operation.

PICTURE CREDITS

International News — 58; Ross-Pix — 37 (top); USN—12 (top).

CAB SCHEDULE

June 22—Hearing on PCA-National equipment interchange agreement. (Docket 3291.)

June 23—Arguments, additional service to Florida by Florida Airways, Inc. (Docket 1668.)

June 25—Pre-hearing conference, suspension of Trans-Atlantic Airways, Inc., letter of registration. (Docket 3358.)

June 28—Hearing on Pan American Airways' Pacific certificate amendment case. (Docket 2953, et al)

June 30—Hearing on Board's investigation of Pan American Airways' Miami-St. Thomas tariffs. (Docket 3274.)

July 12—Hearing on National Airlines route consolidation case. (Docket 2967.)

where precision counts...

B H

MANUFACTURERS OF SHEET METAL AND TUBULAR COMPONENTS FOR LEADING ENGINE AND PROPELLER MANUFACTURERS

- Gas Turbine Components
- Intake Pipes
- Propeller Cuffs
- Cowls
- Collector Rings
- Engine Mounts
- Aluminum Tanks
- Sheet Metal Fabrication
- Sheet Metal Stampings

Today, as proven in the past, you can expect the finest in aircraft components from B. H. —specialists in a field where precision requirements leave no margin for error. Our new, modern factory is dedicated to constant research and development toward perfection in the production of aircraft parts. That we have made rapid strides in this direction is evidenced by the fact that we serve many of American's leading engine and propeller manufacturers. The experience and skills of our personnel are at your disposal.

LET US KNOW
YOUR REQUIREMENTS

B. H. AIRCRAFT COMPANY, Inc.
Metal Fabrication to Aircraft Precision Standards
FARMINGDALE 2, NEW YORK



GOOD FLYING Demands Accurate Timing

The "Aero Compax" is indispensable for instrument flying and all air operations. It tells ground speed automatically... gives time in flight to 12 hours in split seconds... totals time on each leg of flight. "Reminder" dial shows ETA. And of course, it's a dependable timekeeper as your everyday watch.

UNIVERSAL GENÈVE

At leading Jewelers everywhere

Write for Booklet A-2

THE HENRI STERN WATCH AGENCY, INC.
587 Fifth Avenue • New York 17, N. Y.

Next time you're east
try the finest service
in the east. ATLANTIC
assures you of prompt
attention, courteous
treatment and com-
plete facilities at
these points:

- BALTIMORE Municipal Airport
- WILMINGTON Dupont Airport and
New Castle County Airport
- NEW YORK Teterboro Airport
(25 minutes from Times Square)
- BOSTON Bedford Airport

ON THE ATLANTIC COAST IT'S

NEW YORK WILMINGTON
BALTIMORE BOSTON

Atlantic
Aviation

Air Facilities

President gets bill for expansion of Army-Navy works; more to come.

A multi-million dollar construction program of new naval and military aviation facilities is scheduled to get under-way over the coming year.

Congress last week completed action on legislation authorizing \$207,930,350 in new works for the Army and Air Force—including major expansions of USAF Arctic installations, Muroc Airfield, White Sands Proving Ground, Wright Field—and \$209,689,500 in new Naval public works.

The naval measures authorizes a \$30,000,000 expansion at the Point Mugu Air Missile Test Center, a \$22,750,000 expansion of the Trenton (N. J.) Aeronautical Turbine Laboratory, and \$12,000,000 for aviation facilities at Annapolis.

► **Funds Expected**—Both houses appeared set to approve funds to get the constructions started promptly. The President requested \$181,000,000 (\$121,000,000 cash and \$60,000,000 contract authorization) to initiate the Army-Air Force program and \$116,500,000 (\$50,000,000 cash and \$66,500,000 contract authorization) for the Navy program.

Major continental projects authorized in the Army-Air Force public measure now at the White House include:

Muroc Army Airfield—Rocket static test facilities, control tower, all-altitude speed course, \$2,746,500. (USAF requested \$4,057,300.)

White Sands (N. Mex.) Proving Ground—Laboratory, testing facilities for rocket development, \$3,887,430.

Rapid City (S. D.) Army Airfield—Very heavy bomber facilities, \$5,000,000. (USAF asked \$6,501,970.)

Fort Worth Army Airfield—Testing facilities, \$2,394,770.

Wright Field—Rotor wing testing facilities, armament laboratory test facilities, and scavenging building for wind tunnels, \$1,887,000. (USAF requested \$2,038,500.)

Airways Improvements—For removal of flight hazards, construction of night lighting systems, low approach instrument landing systems, high frequency direction finding systems, and radio range stations at various USAF installations, \$5,085,500.

► **Additional Projects**—Others included in the measure are: Almagordo (N. Mex.) Army Airfield, \$1,622,720; California Institute of Technology, for completion of a supersonic wind tunnel, \$410,700; Kearney (Nebr.) Army Airfield, \$1,511,840; Kelly Field (Tex.), for helicopter engine testing facilities, \$152,000; Marietta (Ga.) Army Airfield, \$54,000; Mountain Home (Ida.) Army Airfield, \$940,000; Randolph Field (Tex.), \$1,465,300; San Antonio Army Airfield, \$1,310,800; Tinker Field (Okla.), for jet engine test facilities, \$362,000.

The \$30,000,000 authorized in the measure for new aviation facilities in Alaska, Iceland, and Newfoundland are evidence of USAF's emphasis on the Arctic area in national defense. Alaska projects provided for include: Army airfield at Mile 26 near Fairbanks, \$2,021,118; Fort Yukon Army Airfield (to establish a fighter field), \$4,160,950; USAF classified installation, \$5,000,000; Nenana Army Airfield, \$505,000. ► **Still More**—Other expansions authorized outside the continent include: Adak Army base and airfield, Aleutian Islands, \$4,334,600; Keflavik (Iceland) Airport, \$10,352,100; two USAF classified installations in Newfoundland, \$3,500,000; Mariana air bases, \$5,376,708.

In addition to major expansions at Point Mugu and the Trenton aeronautical turbine laboratory, Naval public works legislation authorizes funds for:

White Sands (N. M.) Proving Ground—The Senate approved \$8,936,630; the House, \$6,194,730.

White Oak (Md.) Ordnance Laboratory—For completion of supersonic wind tunnels and Aerodynamics range, \$2,275,000 (approved by both houses).

Inyokern (Calif.) Ordnance Test Station—For aerodynamics field laboratory, ground range, and external ballistics and electronics experimental installation. The Senate approved \$5,303,000; the House, \$3,670,500.

Chincoteague (Va.) Aviation Ordnance Test Station—For range test facilities. The Senate approved \$1,648,800; the House rejected the project.

Both Houses approved \$309,000 for bombing target facilities at the Patuxent River (Md.) Air Station and \$230,000 for turbine engine test cells at the Alameda (Calif.) air station.

Nonsked Flies DPs To South America

Transocean Air Lines has landed another contract to carry passengers across the Atlantic in large numbers.

On Apr. 1, TAL's arrangement with Trans-Canada Air Lines to fly immigrants from Great Britain to Ontario was terminated after running since last summer. But the uncertificated operator is now carrying European displaced persons to Venezuela in its DC-4s.

► **June Migration**—The refugees are being flown to South America under sponsorship of the International Refugee Organization. Surface transportation generally is unavailable. The aerial migration was expected to be in full swing by the middle of June.

Possibly 2800 of the colonists will be flown to Venezuela within the next four months. And 25,000 persons may be transported to South American by air under IRO sponsorship in the next three years. Transocean's first flights originated at Munich, Germany, and were routed via Shannon, Eire, and Gander, Newfoundland.

SHORTLINES

► **Alaska Airlines**—Has a one-yr. \$680,330 contract to fly Navy personnel into northern Alaska in search for Arctic oil fields. Regular flights from Fairbanks to Point Barrow and Umiat starting July 1 will be supplemented by "bush flights" to isolated regions of the Navy's petroleum reserve above the Arctic Circle. Contract is for an estimated 10,000 flight hr.

► **Air Express**—Domestic airline shipments numbered 332,821 for April, 1948, compared with 304,905 for the same period last year. Off-airline traffic amounted to 19.3 percent of the total shipments handled in April.

► **Continental**—Reported passenger revenue of \$616,248 for the first quarter of 1948, as compared with \$563,318 for the first three months of 1947.

► **Eastern**—Claims speeds record with Constellation between Louisville, Ky., and Washington, D. C., of 1 hr. 27 min. 8 sec. Average speed was 324 mph. . . . According to a tariff filed by EAL with CAB, tour conductors in cities served by Eastern will get free passage to and from San Juan, P. R., as a bonus for every ten roundtrip reservations they book between their city and San Juan.

► **Florida Airways**—Disclosed that completed flights during May maintained high percentage of 99.89. This was a rise of 20 percent more than the completion factor for May, 1947, and .03 percent higher than April of this year.

► **Mid-Continent**—Was cited for operating 184 consecutive on-time departures from Wold-Chamberlain field.

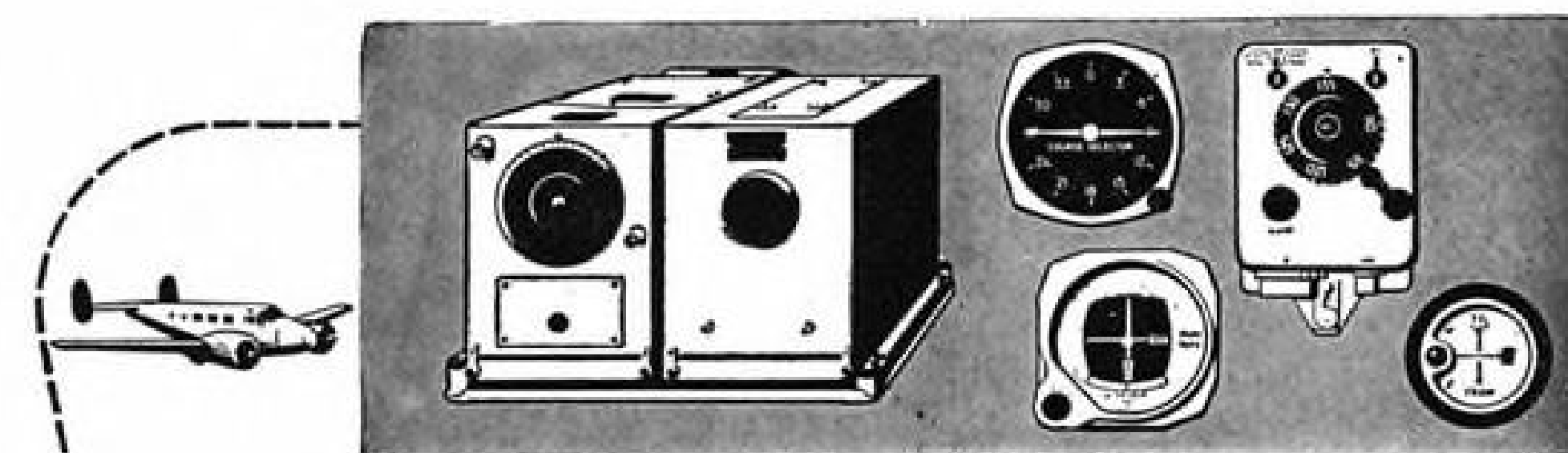
► **National**—Has completed arrangements with Mid-Continent and Capital (PCA) Airlines whereby through automatic reservations systems will provide improved air service between 33 eastern and southern cities and 18 key mid-western centers.

► **Northwest**—Scheduled to increase its international service starting June 14 with the addition of a fourth flight each week through Anchorage, Alaska, to the Orient.

► **Pan American**—Opened its new air-conditioned passenger terminal at Miami International Airport, Fla.

► **Scandinavian Airlines**—Reported passenger traffic from May 16—June 6, 1948, increased 76 percent over the corresponding period last year.

► **TWA**—Is scheduled to increase its trans-Atlantic runs from 34 to 44 flights per week. . . . Additional sleeper service between N. Y. and Paris will be available when the first of its twelve new Constellations goes into overseas service this month.



The Magic of VHF

Airborne Equipment for:
OMNI-DIRECTIONAL RANGES
RUNWAY LOCALIZERS
VISUAL-AURAL RANGES
SIMULTANEOUS VOICE
GCA VOICE RECEPTION

The Type 15A VHF Navigational Receiving Equipment (illustrated) provides for reception on the new Omni-Directional Ranges as well as operation on both types of VHF Runway Localizers, and the VHF Visual-Aural Airways Ranges. Simultaneous voice feature is included on these ranges. The *tunable* A.R.C. Receiver permits selection of any VHF aircraft frequency.

The A.R.C. Type 17 or A.R.C. Type 18 is the companion communication equipment normally associated with the Type 15A. The Type 17 VHF Communication Equipment adds independent two-way VHF communication facilities. The Type 18 adds VHF Transmitting Equipment only. All Type 17 and 18 units are type-certificated by the CAA.

The dependability and performance of these VHF Communication and Navigation Systems spells increased safety in flight. Specify A.R.C. for your next installation.



Aircraft Radio Corporation
BOONTON, NEW JERSEY

DEPENDABLE ELECTRONIC EQUIPMENT SINCE 1928

available now!

25 EXCELLENT LOW-TIME C-46 AIRCRAFT

These Aircraft are owned by USair and are at our Palm Beach International Airport and Niagara Falls Municipal Airport bases. They are now ready for Modification and Licensing under USair's Engineering Specifications in CAA Type Certificate #789.

Our modification which includes CAA licensing of the aircraft is thorough and complete, incorporating all engineering and operational improvements, bringing the aircraft up to current safe CAA Standards.

NC'd for 45,000 lb. maximum gross weight. Weight stripped to lowest empty weight to assure the greatest useful load.

We have in stock more than 100 R-2800 engines, as well as airframe parts, components, accessories, and new C-46 parts currently being manufactured by USair.

... Write Today for Detailed Information ...

United Services For Air, Inc.

P. O. BOX 409, Niagara Falls Municipal Airport, Niagara Falls, N. Y.

CABLE: USair

PHONE: N.Y. 3721

BRANCH BASES:

Buffalo Municipal Airport, Buffalo, New York
Palm Beach International Airport, West Palm Beach, Florida

SEARCHLIGHT SECTION

(Classified Advertising)

EMPLOYMENT : " : EQUIPMENT
BUSINESS : " : OPPORTUNITIES : USE OR RESALE

MASTER PLANNERS — INDUSTRIAL ENGINEERS

With aircraft experience for work on Company Master Planning & Industrial Mobilization Planning Programs.

Salary Open

Submit Experience Summary & Photograph to
Mr. C. L. Windsor, Employment Dept.,

McDONNELL AIRCRAFT CORPORATION

Lambert-St. Louis Municipal Airport

Box 516, St. Louis (3) Missouri

DRAFTSMEN

DESIGNERS
LAYOUT MEN
DETAILERS

Must be mechanically experienced and interested in the modern expanding field of aircraft engines.

ALSO

ENGINEERS

TEST
ELECTRONIC
TEST EQUIPMENT

Excellent opportunities, interesting work in all phases of development in the aircraft propulsion field.

Apply in person or write:

WRIGHT AERONAUTICAL CORPORATION

(A Division of Curtiss-Wright Corp.)
Main & Passaic St.
Wood-Ridge, New Jersey

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (18)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

ASSISTANT AIRPORT Manager wanted: Mid-West Class 5 Airline Airport. Accounting background required. State training and experience in detail. Enclose photograph. Beginning salary \$2400-2500. Address replies to LFA, 7337 Churchill Ave., Detroit 6, Michigan.

CHIEF INDUSTRIAL Engineer—Supervision of industrial engineering group in layout and planning of plant facilities and flow of work, aircraft manufacture and assembly type plant. Time and production studies required, however not from wage incentive or structure viewpoint. Give details of experience and salary expected to P-5166, Aviation Week.

WANTED A & E Mechanics: With at least 5 years Douglas DC-3 General Maintenance experience. Also need Hydraulic Electrical and Instrument specialists. Top pay for the right man. Piedmont Airlines, Winston-Salem, N. C.

POSITION WANTED

FORMER AIRLINE pilot with five years foreign and domestic service desires position with progressive company. Airline Transport rating. 4000 hours, multi-engine experience. Mechanical and engineering background. PW-5227, Aviation Week.

EXECUTIVE—AIRLINE OPERATIONS

Ten years experience in national and international airline operation. Expert in station operation and passenger service. Airline pilot experience, wide background in committee work and trouble shooting. Capable assuming any responsible operations position. Presently employed. Age 39. Married. U. S. Citizen.

PW-5210, Aviation Week
68 Post St., San Francisco 4, Calif.

BUSINESS OPPORTUNITY

Profitable Flying Business

For Sale! Non-scheduled operation, three years old, flying for large industrial firms on yearly contract basis. Plus profitable sky-banner advertising business. Now operating 5 twin-engine Cessnas and two 300 H.P. Stearman. Large supply of parts and fine sky-banners and launching equipment. Wonderful opportunity for group of flyers. This business is showing a substantial operating profit annually! Books open for full inspection. Inactive, non-flying owner wishes to sell or trade for property not requiring active management. BO-5235, Aviation Week.

FOR SALE

Aerial Camera—Fairchild K20 with 6 1/2" Kodak lens, case and filters. 4 x 5 pictures. Ideal for hand use. \$139.50. William C. Cullen, Inc., 12 Maiden Lane, New York 7, N. Y.

Your chance to save money. Beechcraft Bonanza. Latest model. Steerable nosewheel. 25 hours total time. Standard panel. Always hangared. Change of status necessitates sale. No trades. Make offer. R. G. Oestreicher, 447 East Main St., Columbus, Ohio. Phone Main 5353.

WANTED

ANYTHING within reason that is wanted in the field served by Aviation Week can be quickly located through bringing it to the attention of thousands of men whose interest is assured because this is the business paper they read.

LOCKHEED

LOCKHEED LODESTAR, 9 passenger (plus pilot, co-pilot) Model C-60, Executive transportation. Seating equipment — lounge, luggage rack, clothes closet, five reclining chairs. Radio equipment—Bendix RTA, 1B transmitter and receiver, auxiliary receiver, beam receiver 200-400 Kilocycles, ADF direction finder. Complete with quantity spare parts and spare engine. Recently completely overhauled by Wright Aeronautical. Excellent condition. Has been hangared and serviced by American Airlines and used solely for chief executive transportation, Chicago Tribune. Price \$45,000.00.

CHAS. B. JAMES

Purchasing Agent
Chicago Tribune, Chicago
Superior 0100



ELECTRONIC ALTIMETER

ONLY \$45.00

Brand new APN-1 14 tube electronic altimeter in original factory packing. This famous 18x9x7 unit, which weighs only 25 lbs. without plugs or cables, cost the gov't \$2000 and includes a transmitter, a receiver, all tubes, an altitude meter, an altitude limit switch, and two easily installed 11" antennas. Working on the radar principle, the receiver measures the absolute altitude from 3 to 4000 feet, with precision enough for blind landings. In addition the altitude limit switch gives an alarm if the plane's height varies by more than 10 feet from a preadjusted value. Fills recent C.A.A. requirements effective Feb. 15, 1948, that all scheduled airlines must have terrain clearance indicators capable of giving warnings at 500, 1000 and 2000 ft. Another outstanding feature is that connections are provided to control an electronic automatic pilot. Send for our aircraft radio equipment catalog. Export inquiries invited.

Model for 12 to 14 volts D. C. \$75.00
Model for 24 to 28 volts D. C. \$45.00

BUFFALO RADIO SUPPLY

Dept. T-1, 219-221 Genesee St., Buffalo 3, N. Y.

Rising Sun SCHOOL OF AERONAUTICS

ESTABLISHED 1930
"Built Upon the Success of Its Graduates"
GOVT. C.A.A. and VETERANS APPROVED
ENROLL NOW FOR NEXT CLASS
Write for Illustrated Catalog
2206-16 E. HUNTINGDON ST., PHILA., PA.

We Specialize in PATENT SEARCHES

domestic and foreign
write for information

PATENT INTELLIGENCE CO.
954 Warner Bldg. Washington 4, D. C.

WE SPECIALIZE IN BUYING & SELLING used TWIN ENGINE BEECHCRAFTS

Other makes available for sale
NEW YORK AVIATION CORP.
Aircraft brokers and appraisers
H. WARREN HOLLADAY, PRES.
5 W. 46th St., N.Y.C. L.O. 3-6843

SPECIALS IN STOCK CRANES

From
1-5 ton Whiting 20'5" DC Cab
To
1-150 Ton SHEPARD-NILES 64'
N. B. PAYNE & CO., Inc.
105 W. 55th St., New York 19, N. Y.
Tel. Circle 7-6730

LODESTAR CARGO

Low time on engines, airframe etc. Fully licensed. Any reasonable firm offer.

FS-5026, Aviation Week
330 West 42nd Street, New York 18, N. Y.

SEARCHLIGHT SECTION

SAVE ON AIRCRAFT PARTS!

STANDARD A/N PARTS, SMALL TOOLS, HARDWARE AND EQUIPMENT FOR REPUBLIC SEABEES AND OTHER AIRCRAFT. ALL MATERIAL IN PRIME CONDITION.

109 GOODRICH AIRCRAFT TIRES AND TUBES

Factory new, nylon,
4 ply, 7.00 x 8.

TIRE AND TUBE **\$13.75**

AIRCRAFT CARPET \$5.00 yard

1560 yards (80 rolls), factory new, curled mohair, rust color #4259, 54" wide, 1/4" thick, 39 oz. per square yard. Manufactured by Collins & Aikmann Corp.

765 yards (20 rolls), factory new, grey color #1739, 54" wide, 3/16" thick, waterproof-treated backing. Manufactured by Goodall-Sanford, Inc.



447 AUTOLITE BATTERIES

Factory new, #CF 129, 12 volt, 6 cell, amp. hours capacity: 5 hours rate 54, 20 hours rate 68.

\$16.00 EACH

● SEND US YOUR SPECIFIC INQUIRIES ON PARTS, HARDWARE AND EQUIPMENT! LARGE STOCKS AVAILABLE FOR YOUR REQUIREMENTS.

COMMERCIAL SURPLUS SALES CO., INC. 2401 FREDERICK AVENUE
BALTIMORE 23, MD. PHONE: GILMOR 3665

AIRCRAFT SUPPLIES

FOR SALE

- \$2,600,000 DOUGLAS DC-3, DC-4, A-20, CONSTELLATION, RYAN & OTHER AIRPLANE PARTS.
- \$2,000,000 P&W, WRIGHT, SCINTILLA, ECLIPSE, BENDIX, PESCO, HAMILTON, THOMPSON & OTHER ACCESSORIES & PARTS.

REPRESENTATION

—also—

COMPLETE AIRCRAFT PROVISIONING PROGRAMS

TECHNICAL SERVICE

FOR SALE

- \$200,000 C-54 TO DC-4 CONVERSION MATERIAL
- \$400,000 AN HARDWARE.
- ★ OUR DISCOUNTS EXCEED MANUFACTURER'S MAXIMUM



Industrial Associates

PROMPT ATTENTION TO REQUESTS FOR QUOTATIONS, CATALOGS & INFORMATION

ADDRESS INQUIRIES: Suite 205
357 South Robertson Boulevard
Beverly Hills, California
CABLE: INDASSO

SURPLUS HANGARS

New all-metal hangar buildings 147' x 162' packed for shipment complete with bolts and assembly instructions. This is military type clear span arch roof building and meets uniform building code. \$30,000. each F.O.B. Los Angeles.

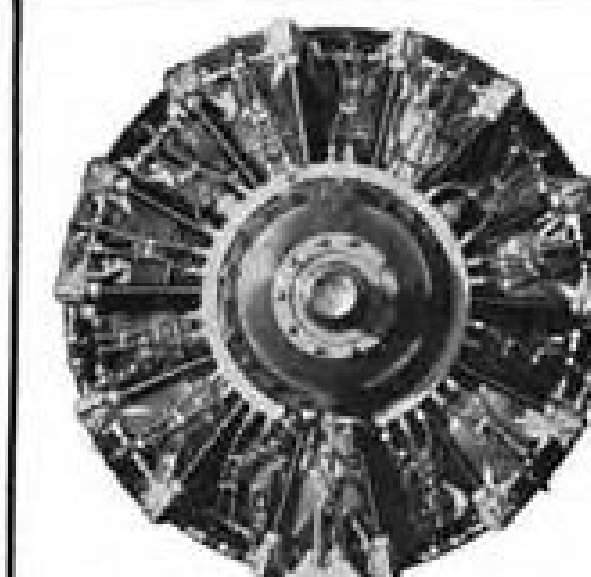
ANDERSON AIRCRAFT CO.

1700 Sawtelle Blvd.
Los Angeles, Cal.

STINSON VOYAGER 150

We have one of the finest used Stinson buys available. 150 HP Voyager, NC 97214, Maroon and Gray, exceptionally clean. Directional giro, G-E two-way radio; rate of climb, manifold pressure. 489 hours total; no time since 100-hour check. Flown only by meticulous, well-experienced private owner. 30-day warranty. \$3250.

Atlantic Aviation CORPORATION TETERBORO AIRPORT
TETERBORO, N. J.
PHONE: HASBROUCK HEIGHTS 8-1740



the steward-davis
100-hour warranted
R-1830-92
Conversion...
\$1795 f.o.b. Los Angeles
STEWART-DAVIS • 13501 SOUTH WESTERN
GARDENA, CALIFORNIA • Cable: STEDAV

GENERAL MAGNESIUM FOUNDRIES, INC.

612 South Third Street Belleville, Illinois
MAGNESIUM CASTINGS
"AIRCRAFT SPECIALISTS"
U. S. A. F. CERTIFIED HEAT TREAT FACILITIES



Boxed Quality

Only a box . . . but symbolic of the Quality and Service rendered by Aircraft Components Corporation to our many customers the world over.

Look for the flying A. C. C. label on every package, it is your assurance of the finest quality aircraft parts. Parts that have been thoroughly inspected in our own shops to meet exacting CAA standards.

Contact us for immediate shipment from our fully-stocked warehouses.

Now Available for immediate shipment AT GREAT SAVINGS: Propellers, Propeller Blades, Propeller Tools, Governors, Generators, Regulators, Relays, Electrical Accessory Parts, Carburetors and Parts, Magnets and Parts, Fuel Pumps, Switches, Inverters, Engine Parts, and many other related items.

Catalogue Gladly Sent on Request
All Parts New and Unused—Guaranteed Quality

Aircraft Components



ALEXANDRIA, VIRGINIA, U. S. A.

Cable Address: ACCAIR

AGENT FOR WAR ASSETS ADMINISTRATION

Representatives for:
LEECE-NEVILLE, U. S. RUBBER CO., KELL-STROM TOOL CO.

AVIATION WEEK, June 21, 1948

ADVERTISERS IN THIS ISSUE

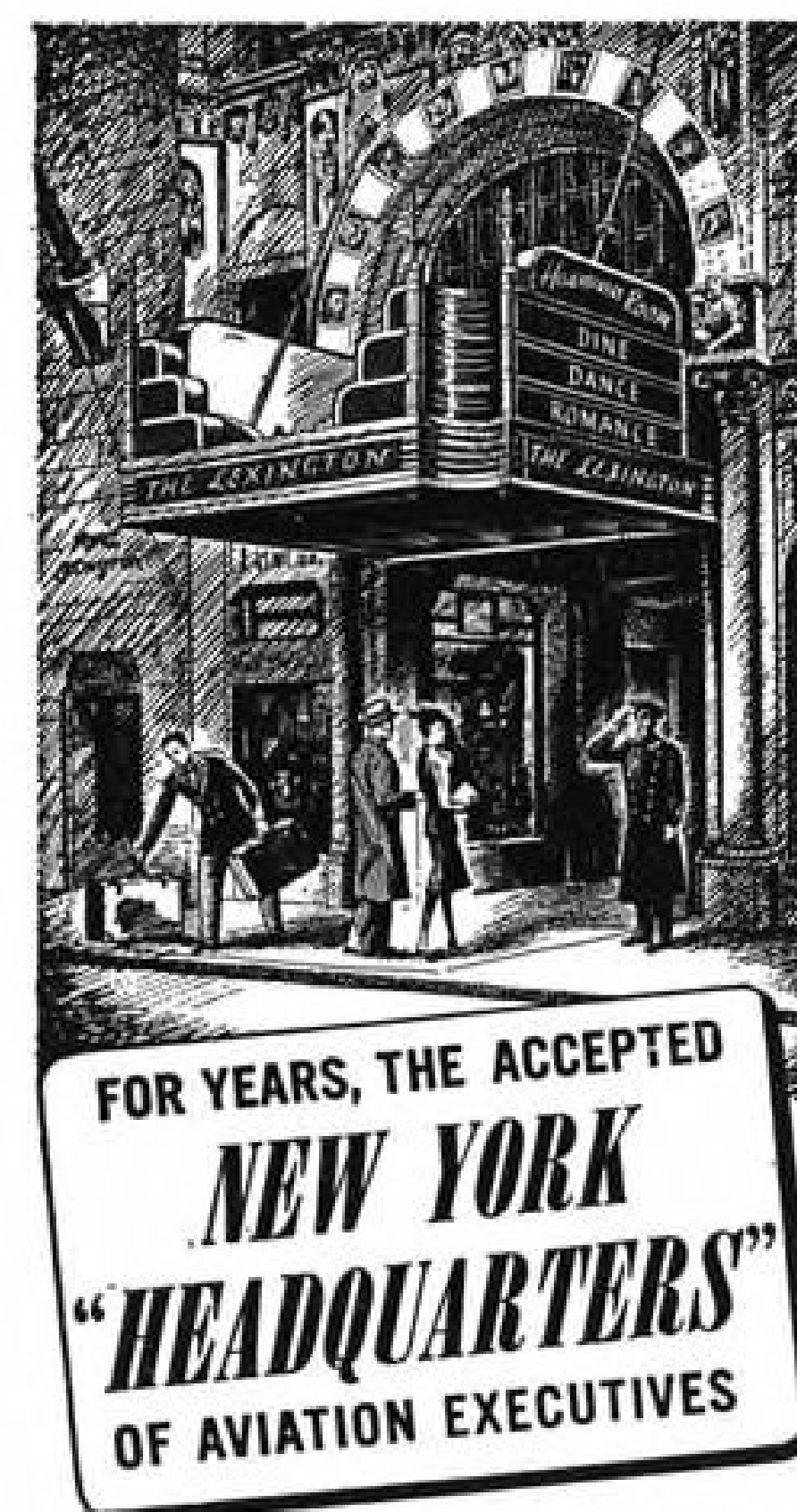
AVIATION WEEK—JUNE 21, 1948

Aircraft Components Corp. 56	General Electric Co. Fourth Cover	Stern Watch Agency, Inc., The Henri. 52
Agency—Henry J. Kaufman & Assoc.	Agency—G. M. Basford Co.	Agency—Kelly-Nason, Inc.
Aircraft Radio Corp. 53	Gulf Oil Corporation. 9	United Aircraft Corp. Front Cover
Agency—Burke Dowling Adams Adv.	Agency—Young & Rubicam Inc.	Agency—Platt-Forbes, Inc.
Aluminum Co. of America. 23	Hotel Lexington, Inc. 57	United Service For Air, Inc. 53
Agency—Fuller & Smith & Ross, Inc.	Agency—Elmo Ecker Advertising	Agency—Gaskill-Oertel Adv.
Armstrong Siddeley Motors, Ltd. 20	Koppers Co., Inc. 24	Weston Electrical Instrument Corp. 19
Agency—Godbolds, Ltd.	Agency—Vansant, Dugdale & Co., Inc.	Agency—G. M. Basford Co.
Atlantic Aviation Corp. 52	Laminated Shim Co., Inc. 8	Wyman Gordon. 6
Agency—Strohmeier Associates	Agency—G. E. Hatch Adv.	Agency—John W. Odlin Co., Inc.
Aviation Distributors & Mfgs. Association. 28	MacWhyte Company. 3	PROFESSIONAL SERVICES
Agency—Belden & Hickox Advertising	Agency—Needham, Louis & Brorby, Inc.	See first issue of month
B. H. Aircraft Co., Inc. 51	Packard Electric Div. G.M.C. 38	
Agency—Harold Marshall Adv. Co.	Agency—Campbell-Ewald Co.	
Bridgeport Fabrics, Inc. 27	Pittsburgh Plate Glass Co. 36	
Agency—Henry A. Loudon Adv.	Agency—Batten, Barton, Durstine & Osborn, Inc.	
Clifford Manufacturing Co. Second Cover	Reed Co., Inc., J. D. 43	
Agency—James Thomas Chirurg Co.	Agency—Wallace Davis & Co.	
Dill Mfg. Co., The. 57	Reeves Brothers, Inc. 32	
Agency—McDaniel, Fisher & Spelman Co.	Agency—Goold & Tierney, Inc.	
DuPont de Nemours & Co., Inc., E. I. Third Cover	Safe Flight Instrument Corp. 4	
Agency—Batten, Barton, Durstine & Osborn, Inc.	Agency—Strohmeier Associates	
Fafnir Bearing Co., The. 5	Searchlight Section. 54, 55	
Agency—Horton-Noyes Co.	Snap-On-Tools Corp. 35	
Fairchild Engine & Airplane Corp. 46	Agency—Scott-Telander Adv. Agency	
Agency—Cecil & Presbrey, Inc.	Standard Pressed Steel Co. 10	
Firestone Tire & Rubber Co., The. 40, 41	Agency—R. E. Lovekin Corp.	
Agency—Sweeney & James Co.		

SEARCHLIGHT SECTION

(Classified Advertising)

EMPLOYMENT	
Positions Vacant. 54	
Positions Wanted. 54	
SPECIAL SERVICES	
Contract Work. 55	
EDUCATIONAL	
Schools. 54	
BUSINESS OPPORTUNITIES	
Offered. 54	
PLANES—EQUIPMENT	
(Used or Surplus New)	
For Sale. 54-55	



Hotel Lexington
LEXINGTON AVENUE AT 48th ST., N. Y. C. 17
HOME OF THE *Hawaiian Room*

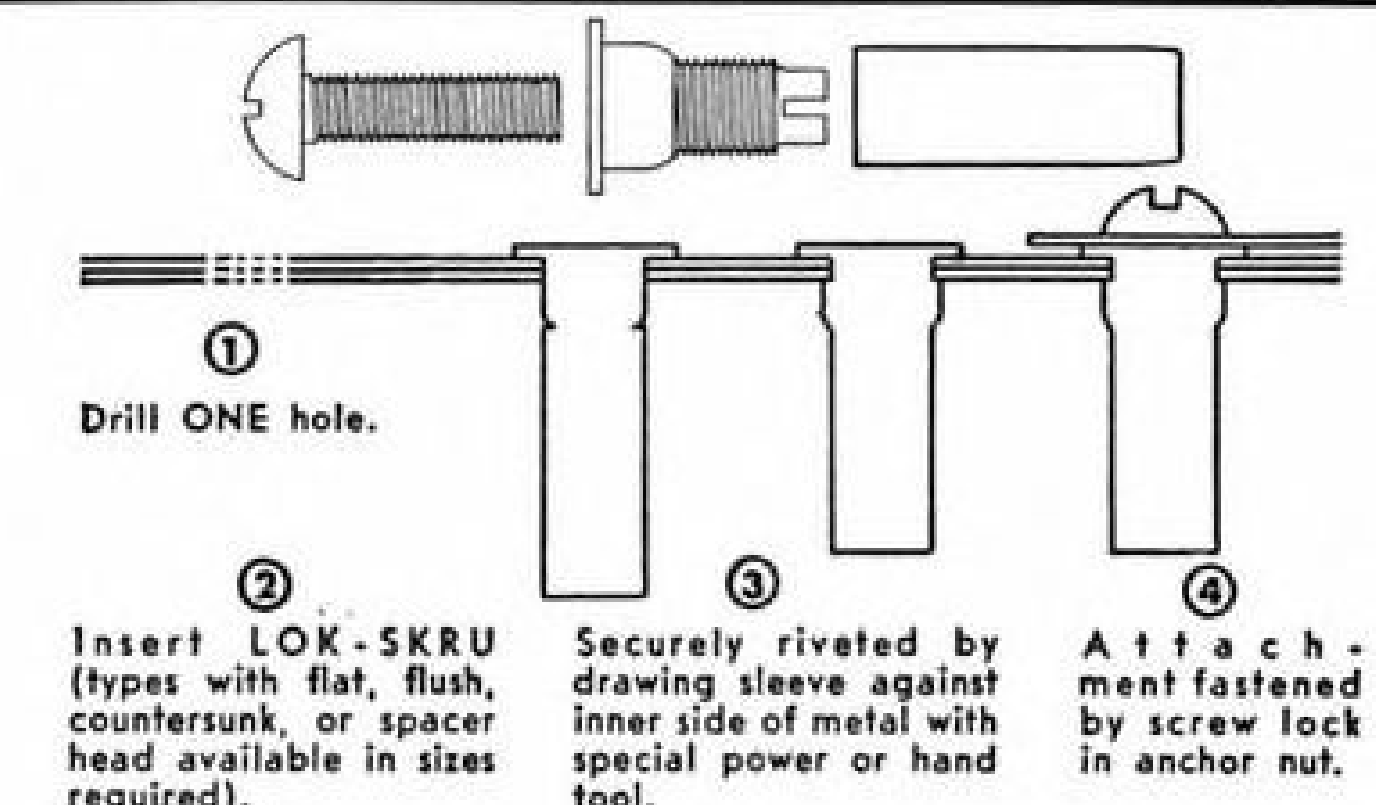
AVIATION WEEK, June 21, 1948

THE AVIATION STANDARD

DILL Lok-Skru

Triple Duty Fasteners

RIVET • ANCHOR NUT • SCREW LOCK



Write for Folder

Handy information on the many uses and application of Lok-Skru in airplane construction with complete data on types and sizes.

THE DILL MANUFACTURING CO.

FACTORY BRANCH
700 East 82nd St. 1011 S. Flower St.
Cleveland 8, Ohio Los Angeles, Calif.



EDITORIAL

Congressional Medal for Yeager

Air Force Captain Charles E. Yeager was the first American—probably the first man anywhere—to exceed the speed of sound in flight and live to be able to tell about it.

We believe it was the greatest achievement in aviation since the Wright's first flight.

Not even our most distinguished scientists could foretell the effects on plane or pilot of the first sonic flights. One of Britain's greatest pilots was killed when his high speed plane disintegrated at what may have been sonic speed.



Yeager

Pilot risk was considered so high that another research pilot, well heeled and well publicized from his prolific writings about earlier flights, had demanded fantastic remuneration for the critical stages of the Bell XS-1 speed tests.

So a twenty-five year old Air Force pilot, on a captain's regular flight pay, volunteered. He already had behind him 15 months as a fighter pilot in the Eighth Air Force. He had been shot down and then smuggled out of France by the underground.

His continual appeals to be permitted to fly again in the European Theater finally were granted. As Frederick Graham reported in the New York Times, it had been an inflexible rule that pilots shot down over enemy territory and smuggled out would not be permitted to fly again in the same theater. This was to prevent the Germans from learning secrets of the underground from pilots they captured. Yet Yeager persisted until he was permitted to rejoin the Eighth and wound up his combat career with 13 German planes to his credit.

So this man's war was over, and he had earned a peaceful life with his family. That is the background of the man who took on the biggest flying job his country had, and he licked it. No special bonus demands, no writing waivers, no movie rights, no talk—before or afterward.

Captain Yeager already has been awarded the Mackay Trophy and an Oak Leaf Cluster to his DFC. Well and good. He deserves every special aviation award he will and should receive.

But we join others in aviation in urging nothing less than the Congressional Medal of Honor for Charles Yeager. It is the least the United States can do in recognition of an achievement whose importance will continue to increase with the years.

Preserve the Original XS-1

The original Bell XS-1 which first conquered supersonic flight with Capt. Charles Yeager at the controls should be preserved for posterity in the country's haven for its relics of history, the Smithsonian in Washington.

Wilbur and Orville Wright's original flying machine will be returned soon to this country with appropriate ceremonies, and placed on permanent display. The XS-1 marks the end of a brilliant era of flight opened by the Wrights. It is an historic symbol of America's technological accomplishment and a forebearer of limitless speeds to come.

Since modified models of the XS-1 are on order, we hope the Air Force will spare this particular ship from further tests, and risk of irreparable damage. How about it Secretary Symington?

Closed Book

Air Force Secretary Symington has verified AVIATION WEEK's story of last December that the Bell XS-1 had exceeded the speed of sound. The story was proven accurate right down to the names of the first three pilots who accomplished the feat.

More important, the American people know that supersonic flight is a reality; no more mystery, no more beating about the bush. And our British friends who were skeptical of AVIATION WEEK's original story now must concede that the Americans have "done it." As for the Russians, we doubt if the feat lessened any their respect for American genius and power. What else do they respect more?

So, after months of tapped phones, interviews with Military intelligence, Naval intelligence, and FBI agents, we close the book on the XS-1 supersonic story with no hard feelings. No publication worth its salt will shy from fighting for what it thinks is right. But after the fight is over, pouting is pretty small.

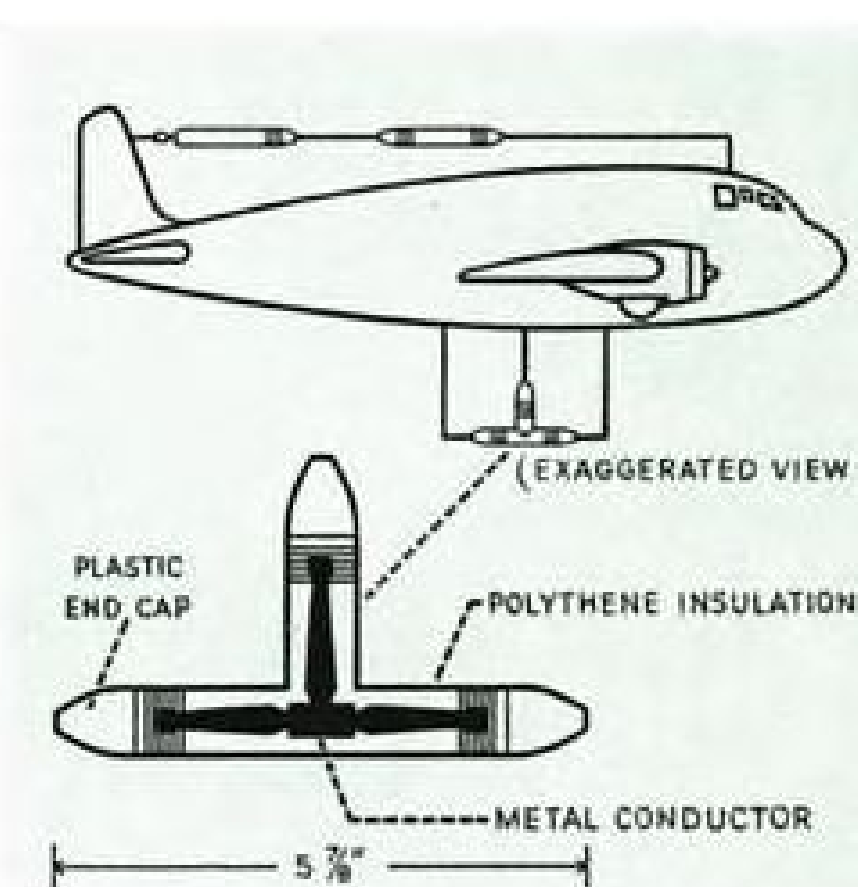
We shook hands with Mr. Symington weeks ago and Air Force-AVIATION WEEK relations were never better. The XS-1 controversy is over.

ROBERT H. WOOD



CEILING ZERO...RECEPTION UNLIMITED

Antenna fittings insulated with Du Pont polythene cut precipitation static as much as 90%



Above is a typical example of how polythene-insulated fittings are installed in an Anstat Safety Antenna System. Simple design makes these fittings easy to handle, quick to install, with no special training required. Because of their rugged qualities, maintenance costs stay low, replacements are minimized. And as further indication of the versatility of polythene, polythene-insulated wire is recommended for use with this system.

Even in the worst of weather, pilots now can count on fair-weather radio reception, thanks to antenna fittings insulated with injection-molded Du Pont polythene. With these fittings, new antenna systems control up to 90% of static from such sources as charged thunder clouds, rain, dust, and snow and thus help to minimize a serious hazard to safety.

High dielectric strength and moisture-resistance make Du Pont polythene an excellent material for the job. These polythene-insulated antenna fittings resist a 200-kilovolt stress even after repeated aging cycles over a temperature range of -50° to 130°F. And tough, resilient polythene withstands mechanical vibration and rough treatment. Light in weight, capable of being molded with precision, Du Pont polythene is right from every angle.

Perhaps your aircraft can profit

from parts made of polythene, "Lucite," or other Du Pont plastics. Write for data. They may help you improve your product. E. I. du Pont de Nemours & Co. (Inc.), Plastics Dept., Room 226, Arlington, N. J.

Anstat Antenna Systems manufactured by Fredric Flader, Inc., North Tonawanda, N. Y. Polythene installation injection molded by Trimold, Inc., Kenmore, N. Y.

Tune into Du Pont "CAVALCADE OF AMERICA," Monday nights—NBC coast to coast





- GENERATORS AND POWER SYSTEMS
- MOTORS AND CONTROL
- INSTRUMENTS
- TRANSFORMERS
- AUTOMATIC PILOTS
- IGNITION SYSTEMS
- ARMAMENT SYSTEMS
- CAPACITORS
- TURBOSUPERCHARGERS
- CABIN SUPERCHARGERS
- GAS TURBINES FOR JET PROPULSION

Skyhook

These two General Electric technicians are preparing the "Skyhook" for a whirl. The Skyhook is a jet-propelled helicopter blade—a project for the U.S. Air Force that has been underway for more than a year at the G-E Flight Test Center in Schenectady, in co-operation with our Aircraft Gas Turbine Divisions in Lynn, Mass. The all-steel blade is located, for testing purposes, in the center of a bowl-pit, 150 feet in diameter and 13 feet deep.

This jet-helicopter development is one of the first of its kind, and unique in size and design . . . another "first" for General Electric.

We invite you to take advantage of our background and experience. Let our design and production engineers help you with your aircraft equipment problems. In research, development and production of components for aircraft, G.E. leads the way. For more information on General Electric products and their applications, call our nearest sales office, or write Apparatus Department, General Electric Company, Schenectady 5, N. Y.



*Precision products
and
engineered systems
for aircraft*

GENERAL  ELECTRIC