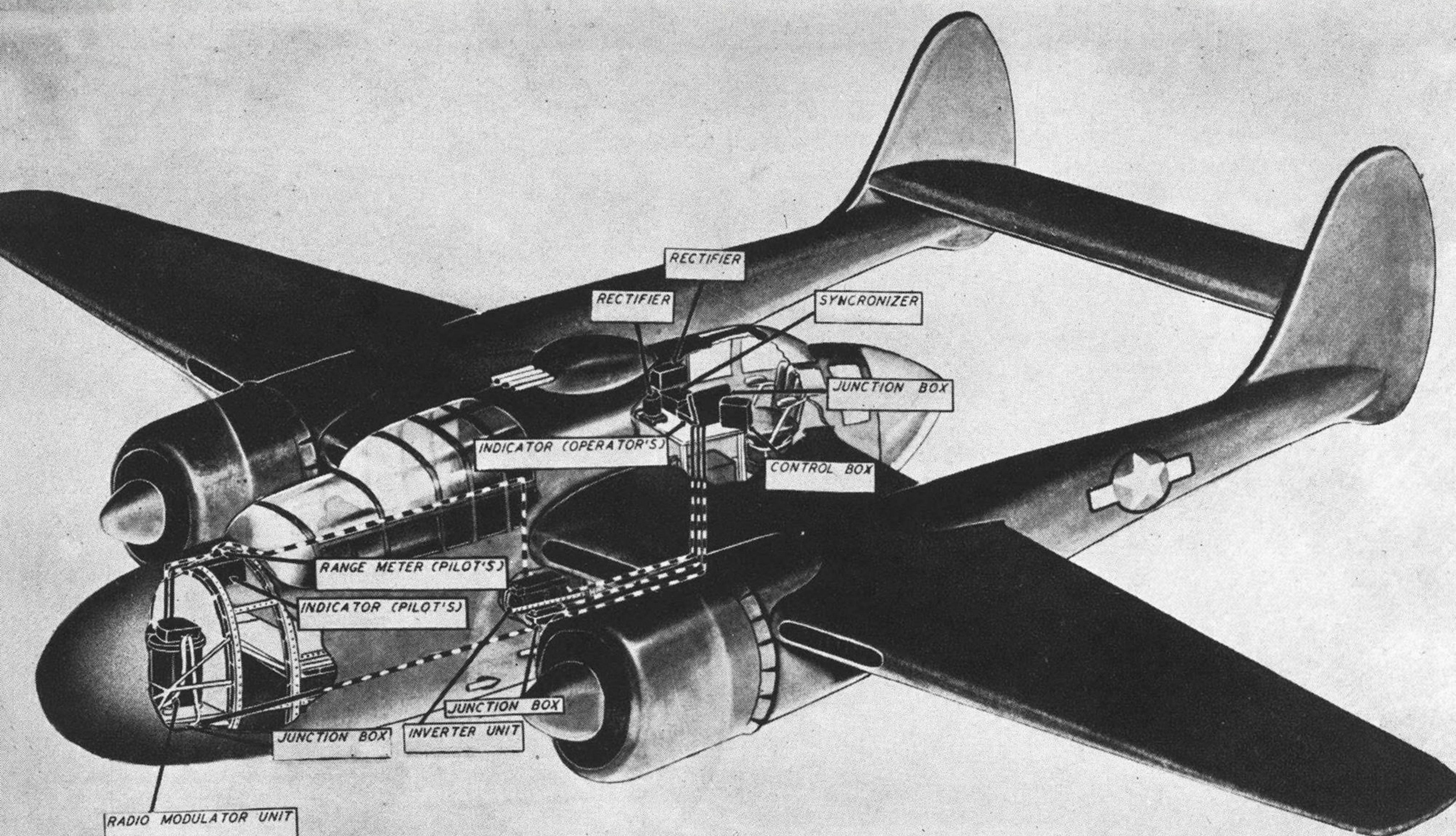


Aviation News

McGRAW-HILL PUBLISHING COMPANY, INC.

SEPT. 10, 1945



Radar Maze: End of wartime restrictions makes possible this release of a diagrammatic photo of part of the radar installations in a P-61 Black Widow. All this equipment serves only one purpose, aircraft interception. This is just one of the radar systems carried in the night fighters to enable them to fulfill missions in darkness and low visibility. Shown is the network which permits the operator to locate enemy aircraft and direct the pilot toward it.

Aircraft Component Scrapping Looms As Necessity

Shift in RFC policy seen as result of return of industry to civilian production; agency faces rapidly shrinking market.....Page 7

C-54E's Allocated As New Equipment Flow Begins

SPB announces 100 to 200 four-engine planes will reach carriers for commercial operation within ten weeks.....Page 41

Carriers Begin Readjustment To Non-Priority Travel

Belief that wartime control of service patterns may follow priority air travel out of existence on Oct. 15 also expressed.....Page 46

Small Airport Building Bans Expected To End in 60 Days

Two-month limit set for WPB restrictions on new construction; private flying will get secondary consideration until then.....Page 13

Freight Consolidation Plan Seen Boosting Air Cargo Use

New York organization, working with American Airlines on Model 39 experiment, finds load factor on mixed shipments high.....Page 44

See Prompt Approval For Single-Chief Surplus Agency

Present SPB head warns of disposal crisis within three months as no longer needed aircraft and other war stock reach "staggering amounts".....Page 9

Here's the HOW... and the WHY of TRIGGER-FINGER CONTROL

(Soon available on 10, 15 and 20-lb. Fire Extinguishers)



- 1.** Pull out non-jamming locking pin. Seating in two blind holes, it can't be turned... the ends cannot get bent over.



- 2.** Pick up easy-to-carry extinguisher. Balanced design and low center of gravity make carrying job simpler.



- 3.** Press the trigger. That's the simple, natural way to operate extinguisher — one finger does the trick.



- 4.** Get full flow at once. No half-way measures with this fast-starting valve... carbon dioxide goes right to work!



- 5.** Lock open—if desired. Just move trigger forward slightly to latch it in open position—no danger of fouling.



- 6.** Recharge without replacement parts. Merely connect carbon dioxide supply and fill extinguisher up.

Simple, safe and foolproof, this new trigger-control valve on 10, 15 and 20-lb. Kidde extinguishers speeds the attack on fires. A novice can operate it! Write for the full details today.

Walter Kidde & Company, Inc., 920 Main Street, Belleville 9, New Jersey



The word "Kidde" and the Kidde seal are trade-marks of Walter Kidde & Company, Inc.

Kidde

Washington Observer



CRYSTAL BALL—There are indications that there may be sharper reductions in aircraft production than appeared immediately after the surrender of the Japs. Balancing this, however, are equally strong indications that a temporary drop will be followed by a sizeable output of new models. In addition, President Truman has commented that it is vital to the welfare of our people that this nation maintain the development work and the nucleus of a producing aircraft industry capable of rapid expansion to keep the peace and meet any emergency. The armed forces are working on that basis.

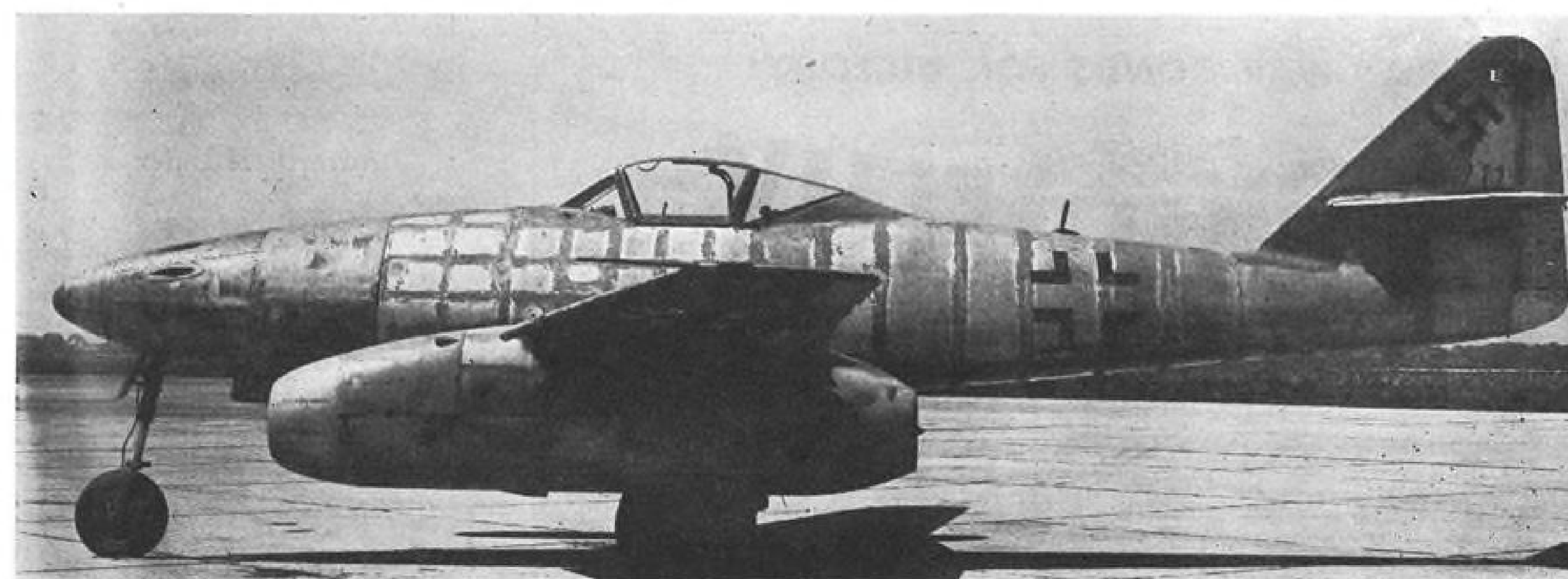
TRANSFER COSTS—The War Production Board is understood to be taking the position that the transfer of war work from plants originally used for peacetime production to specialized war plants, would be to the contractor's advantage and therefore the government should not pay the costs of transfer. It is the feeling in WPB that no legal authority exists for the government to finance such transfers except in the interest of war production. The plan is, however, to make no formal announcement of definite policy at this time.

INDUSTRIAL MOBILIZATION—Important post-war assignment of planning for industrial mobilization in the event of a future emergency—which gives an indication of Washington thinking—has been assigned to the Army and Navy Munitions Board. This means that the board will become one of the key agencies in the defense program to be adopted after the present wartime armed organization is demobilized. The assignment is part of the reconversion program

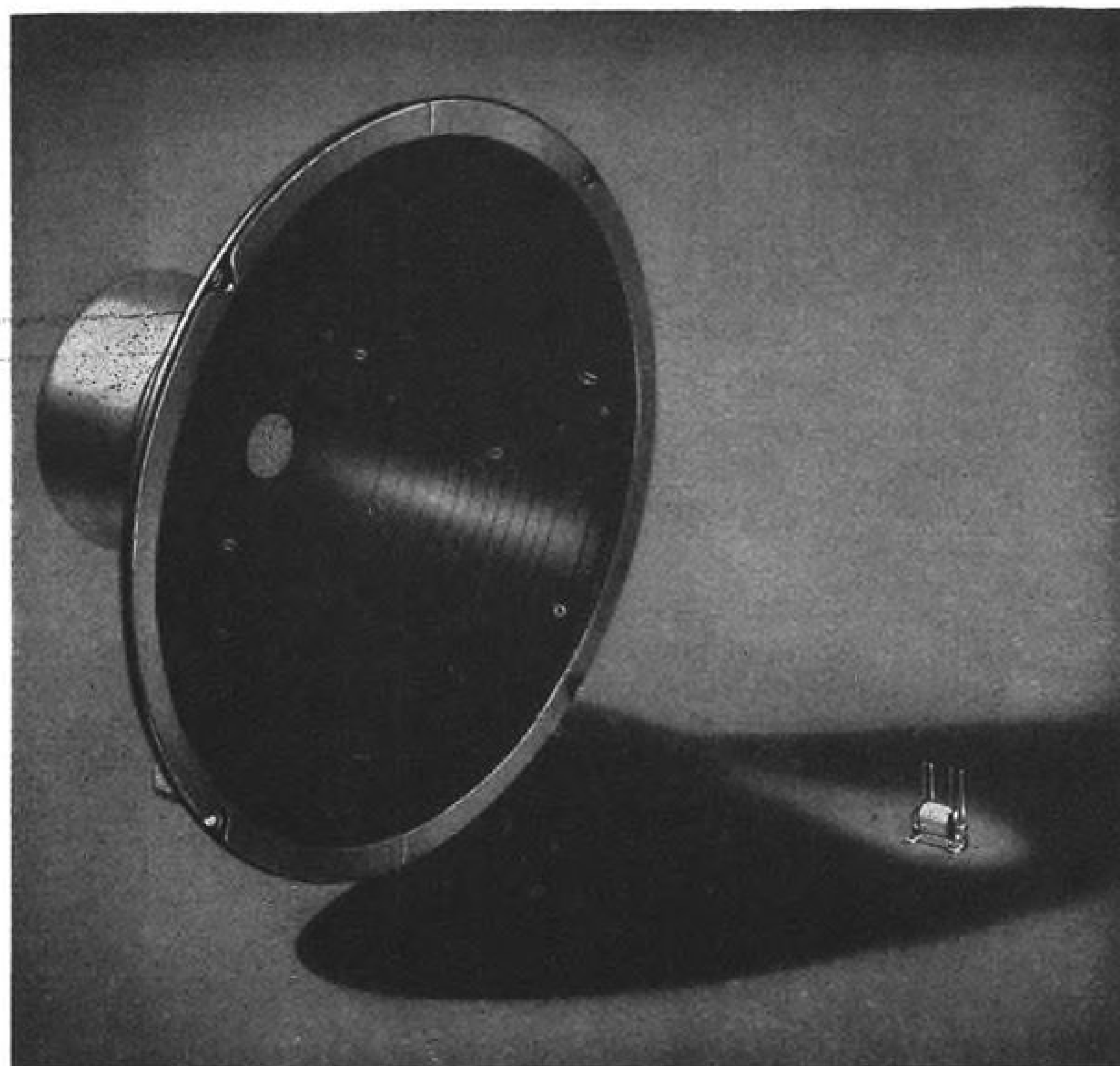
preparatory to the liquidation of wartime agencies and the shifting of their functions to regular peacetime organizations.

SERVICES PROBLEM—Difficult problem facing the AAF and Naval Aviation production and procuring divisions, at the moment, is the matter of ordering spare parts for the thousands of aircraft still in service. Procurement of spare parts was long a troublesome problem until a formula was devised, based on widely varied combat service that worked so as to conform to realities. The question now has arisen whether to continue spare production or resort to "cannibalism." The answer will be of great importance to the aircraft industry.

WARTIME SECURITY—The services, in some instances, are finding that insistence on maintaining wartime security policies can be embarrassing to their own interests now that peace has come. For example, the Curtiss facility at St. Louis has completed its war assignment. The Navy wanted to move McDonnell Aircraft into the Curtiss plant which is excellently equipped. McDonnell is working on an important Navy contract scheduled to run for many months. Security prevented the Navy from explaining to St. Louis civic authorities what the Curtiss plant was wanted for or the importance of the McDonnell project. St. Louis officials wanted to use the Curtiss facilities as part of their municipal airport expansion program. Result was that the Navy decided that its best interests would be served by releasing information in St. Louis about the jet fighter plane on which McDonnell is working.



New view of German jet-propelled fighter now under study by ATSC. (AVIATION NEWS, Aug. 27).



Permoflux Speakers and Transformers Set New Standards of Comparison!

New Permoflux speakers in a complete range of true-dimensioned sizes from 2" to 15", with power handling capacities from 1 to 20 watts, provide the finest sound reproduction for every application.

Permoflux midget transformers, with their many practical circuit applications, have literally revolutionized efficiency concepts where size and weight are determining factors.

Advanced engineering designs, improved manufacturing methods and new materials have all contributed their share in the development of Permoflux speakers, transformers, microphones and headphones. You can count on Permoflux to provide an acoustical unit to suit your exacting requirements.

BUY WAR BONDS FOR VICTORY!

TRADE MARK
PERMOFLUX
PERMOFLUX CORPORATION
4900 WEST GRAND AVE., CHICAGO 39, ILL.



PIONEER MANUFACTURERS OF PERMANENT MAGNET DYNAMIC TRANSDUCERS

AVIATION NEWS

THE STAFF

GEORGE W. PFEIL.....Publisher
ROBERT H. WOOD.....Editor
C. SCOTT HERSHEY.....Managing Editor
MERLIN H. MICKEL.....Transport Editor
RAYMOND CROSIER.....Transport
MARY PAULINE PERRY.....War Agencies
WILLIAM KROGER.....Special Assignments
BLAINE STUBBLEFIELD.....Special Assignments
MARTIN V. MERRITT.....New York Editor
SCHOLER BANGS.....Pacific Coast Editor
ALEX MCSURELY.....Private Flying Editor
KARL HESS.....Copy Editor
DALLAS MALLARD.....Art Director
ANDREW B. MARTIN.....Sales Manager

CONTENTS

	PAGE
Washington Observer	3
Industry Observer	5
Headline News Section	7
Private Flying	13
Personnel	22
Production	31
Air Forces	36
Financial	38
Transport	41
Editorial	50

THE PHOTOS

Air Technical Service Command, Cover, 3; Acme, 7; U. S. Navy, 8, 9; World Wide, 10; Otto Menge Photo, 31; Westinghouse Electric Co., 32.

Editorial Headquarters,
1357-63 National Press Building,
Washington 4, D. C.
Publication and Executive Offices,
330 W. 42nd St., N. Y. 18, N. Y.
Pacific Coast Office, 621 So. Hope St., Los Angeles

Published weekly by McGraw-Hill Publishing Co., Inc. Price 50c a copy. Allow ten days for change of address. Subscription rates — United States, Mexico and Central and South American countries, \$5 a year, \$8 for two years, \$10 for three years. Canada, \$6 a year, \$10 for two years, \$12 for three years. All other countries \$9 a year, \$14 for two years, \$18 for three years. Entered as second-class matter July 31, 1943, at the Post Office at New York, New York, under the Act of March 3, 1879. Printed in U. S. A. Cable Address "McGrawhill, New York." Please indicate position and company connection on all subscription orders.
JAMES H. MCGRAW, Jr., Founder and Honorary Chairman; JAMES H. MCGRAW, Jr., President; CURTIS W. MCGRAW, Senior Vice-President and Treasurer; HOWARD EHRICH, Vice-President (for business operations); WILLARD CHEVALIER, Vice-President (for editorial operations); JOSEPH A. GERALDI, Secretary, and J. S. BLACKBURN, Jr., Director of Circulation, 330 West 42nd Street, New York 18, N. Y. Branch offices: Chicago, 520 North Michigan Ave.; San Francisco, 68 Post Street; Los Angeles, 621 So. Hope Street; Aldwych House, Aldwych, London, W. C. 2; Washington, Philadelphia; Cleveland; Detroit; St. Louis; Boston; Atlanta. Return Postage Guaranteed. Copyright 1945. All rights reserved by McGraw-Hill Publishing Co., Inc.

Volume 4, Number 7

Advertisers Index

Aeronca Aircraft Corp.....	43
Air Associates, Inc.....	19
Bell Aircraft Corp.....	49
Borg-Warner Corp.....	3rd cover
Chance Vought Corp.....	6
Cleveland Pneumatic Tool Co., The.....	facing 23
Curtiss-Wright Corp. (Propeller Div.).....	facing 22
General Electric Co. (Electronics Div.).....	37
Hansell & Co.....	47
Hartwell Aviation Supply Co.....	34
Jack & Heintz, Inc.....	20, 21
Kelite Products, Inc.....	48
Kidde & Co., Inc., Walter.....	2nd cover
Koppers Co., Inc.....	33
McDonnell Aircraft Corp.....	49
Mercury Aircraft, Inc.....	48
Northrop Aircraft, Inc.....	40
Permoflux Corp.....	4
Sensenich Brothers.....	49
Timken Roller Bearing Co., The.....	4th cover
Titeflex, Inc.....	39

News at Deadline

New Boeing President

Election of William A. White, 45, Seattle lawyer, as president of the Boeing airplane and aircraft companies, announced last week, fills the vacancy existing since Philip G. Johnson's death Sept. 14, 1944. C. L. Egvedt, chairman of the board, has been serving both as chairman and president in the interim. A native of Montana, Allen is a graduate of the University of Montana and Harvard Law School. He has been a member of the Boeing board 14 years, and his firm has served as company counsel for 20 years. Chairman Egvedt said Allen was particularly qualified to deal with reconversion and readjustment problems and had been closely associated with many of the company's past business transactions.

DC-7 Test Flight

Douglas Aircraft Co. last week held a successful first flight of its C-74 Globemaster Army transport, which is the counterpart of the commercial DC-7.

The plane grossed its designed 145,000 pounds when Ben O. Howard, Douglas engineering test pilot and assistant to the president, lifted it off Long Beach, Calif., municipal airport after a takeoff run of less than 3500 feet, and following a single, brief taxi run.

C. G. Brown, C-74 chief project engineer, said that as tests proceed the plane will be worked up to its specification gross weight of 155,000 pounds, and if the engines develop the power expected, to a gross of 162,000 pounds. Empty weight is 85,000 pounds.

At its first flight weight the plane is rated to clear a 50-foot obstacle at 3,500 feet on takeoff and to land in 2,750 feet over a 50-foot obstacle without resorting to the braking of its reversible pitch propellers.

Should the plane go into commercial production after initial Army orders are filled it will be capable of carrying 96 seated passengers and a crew of five.

A second C-74 is nearing completion in the Douglas Long Beach factory, and a third is in early stages of assembly.

Douglas officials indicated thorough satisfaction over the test flight performance of the plane's four Pratt & Whitney "Wasp Major" (R-4360) 28-cylinder engines.

The plane has a wingspan of 173 feet 3 inches, a length of 124 feet 11½ inches, a height of 43 feet 9 inches, and a tread of 34 feet 2 inches. It will carry 11,000 gallons of fuel and 340 gallons of oil.



► Further curtailment of the Martin *Mars* program has been decreed by Navy officials, reducing the entire procurement of the JRM-1 to five aircraft. The initial cancellation of 9 has been increased to 15. One has been delivered.

► Orders for 100 *Lincoln* super-bombers to have been built by Victory Aircraft, Ltd., Toronto, have been canceled. Five now on the line may be completed. Victory was recently purchased by Hawker-Siddeley Aircraft Ltd. of England but no plans have been announced by the new owners . . . Rumors in Toronto point to sale to private industry of government-owned plant of DeHavilland Aircraft, which was manufacturing *Mosquito* bombers until a fortnight ago.

► Northrop may be a strong bidder for airline modification orders in the immediate future. Easing of military production leaves the company with available space and manpower, and experience already gained in modification of C-47 interiors for United Air Lines.

► Harlow Aircraft Co. at Alhambra, Cal., will be in full production of Harlow *Cadet* lightplanes this fall. Demonstrator deliveries are set to start this month. The firm is organizing a customer service department under John Beach, formerly of the customer department of Lockheed.

► Stinson Division of Convair holds orders for 1600 *Voyager* 125 personal aircraft. Deliveries are scheduled to begin next month. These advance sales represent \$8,000,000 in consumer valuation based on the ship's approximate \$5000 cost to the owner.

► Aero Services, Inc., of Van Nuys, Cal., until now holding a major position among so-called independent companies contracting for modification of Douglas military transports, has withdrawn from the venture after completing contracts with United, KLM, Pan American, TACA, and Northeast Airlines. The company is switching to purchase of used aircraft, chiefly Lockheed *Lodestar*, and their modification and sale as executive transports.

► Northwest Airlines officials are confident CAB will rush through a decision on the North Pacific route because of the immediate need for short-cut service to Tokyo. A recent examiners report recommended NWA for the commercial route to Tokyo, Shanghai, Hong Kong and Manila. NWA wonders who will install the radio equipment on this route—NWA, the Army, a joint deal with the various governments concerned, or a joint airline group.

► Development is reported well underway on the new Martin torpedo bomber for the Navy, the BTM-1. The plane may be in production by December.

► Airways in Mexico, Colombia, and Costa Rica have been purchasing Canadian war surplus planes. Compania Mexicana Aerofoto, Mexico, and Lamsa Limitada of Colombia acquired 4 Anson IV twin-engined transports averaging \$4800 per plane. Four Hudson III's went to TACA Airways, and Frank Ambrose Aviation Co. of Costa Rica, at an average unit price of \$6000. The Royal Canadian Flying Clubs Assn. and two individuals purchased 192 DeHavilland *Tiger Moths* in July, at an average cost of \$850. Canadian surplus planes and engine sales in July were \$402,972.

► Use of DC-3s on short inter-city runs is to be started shortly by Trans-Canada, beginning with Toronto-New York, Toronto-Windsor. They will replace *Lodestars*. TCA recently obtained 3 Douglasses from U. S. surplus, and has ordered 7 more direct from Douglas. New Toronto-Cleveland and Toronto-Chicago services will be opened when new equipment is available.

► Edward P. Warner's election as head of PICAQ was planned by high officials of the international aviation group as long ago as February, and CAA Deputy Administrator Stanton was the main contender to replace Dr. Warner on CAB up until several weeks ago. It is now known that he is no longer being considered for the position. Several Army officers and civilians are being considered but no decision has been made for the appointment.



A New Corsair...

...Joins the Fleet

The Navy has a powerful new aerial weapon — the F4U-4 Vought Corsair.

Even faster than the famous F4U-1, this deadly fighter-bomber is bringing new power to the Navy's carrier-force.

CHANCE VOUGHT AIRCRAFT

STRATFORD, CONNECTICUT

ONE OF THE FOUR DIVISIONS OF UNITED AIRCRAFT CORPORATION

Aircraft Components Scrapping Believed Looming As Necessity

Shift in RFC policy seen as result of return of industry to civilian production; agency faces rapidly shrinking market for millions of dollars worth of surplus parts and materials.

By WILLIAM KROGER

The possibility that millions of dollars worth of surplus aircraft components will have to be scrapped as unsaleable has been greatly increased by the rapidity of contract cancellations and the consequent return of the aircraft industry to civilian production.

Shortly before the end of the war, Reconstruction Finance Corp. officials held the opinion that the bulk of components and parts had to be disposed of before V-J Day. A few months later, it was stated, the market would shrink to about one percent of what it was at that time.

► **Vanishing Demand**—Today, RFC is face to face with the situation it feared, and the time remaining for most productive disposal is running short. After the industry gets production into high gear, the aviation market for surplus parts and components will be practically non-existent.

Meanwhile, RFC is handicapped, in effecting rapid disposal, by lack of precise knowledge of what must be disposed of, what quantities, where the material is located and

its condition. Efforts to round out information have yielded poor results.

Indicative of the magnitude of the task is an estimate that there are approximately one million items totally unrelated to each other that fall within the classification of aircraft components and parts.

► **Outlets Gone** — With the two greatest outlets for sale—aircraft war production, and non-aircraft war production—now eliminated, RFC officials are giving closer attention to recurring suggestions that much of the surplus components and parts be scrapped. Col. A. E. R. Peterka, chief of the components disposal section has recommended that RFC and Surplus Property Board reverse the present policy and require complete justification when materials are not scrapped, but stored.

Authoritative feeling is that owning agencies should be directed to scrap nominal quantities of identical items which cost \$100 or less. These, it is estimated, constitute about 80 percent of surplus

"Record" Speeds

For the record:

► A Boeing B-29 was flown from Honolulu to Washington, non-stop, in 17 hours and 21 minutes.

► A Douglas C-54 was flown from Tokyo to Washington in 31 hours and 25 minutes. The plane, piloted by Maj. G. E. Cain, flew the northern route, making two stops—at Adak in the Aleutians and at Seattle.

The *Superfortress* was stripped of armor plating, special equipment, and armament to increase its speed; average being 285-mph. The flight was made at 20,000-ft. altitude. Pilot was Maj. Otto W. Buenting and airplane commander was Lieut. Col. Charles J. Miller.

components, but at the same time represent only about 20 percent of the dollar value.

If there is not some determination along that line, RFC has been warned, the disposal organization will be completely cluttered with paper work. Recommended is that owning agencies scrap such items without declaring them surplus, and that RFC likewise purge its records of them.

► **Flexible Rule**—It is pointed out that in any event, all such items would not become surplus at once and consequently could not all be scrapped at once. Should a later use be found for components in



IMPROVED P-61 BRAKES:

The P-61C, improved model of the Black Widow, introduces "picket fence" brakes and "high-activity" propellers, which absorb the added thrust of the R-2800C engines.



RADAR EQUIPPED MARTIN MARINER:

Housed in the "radome" atop this Navy craft, the radar antenna guides the plane toward its target or destination.

that category, the policy could be changed.

In disposing of components and parts that are saleable, normal channels of trade should be used, Col. Peterka believes. RFC does not have sufficient experienced personnel, and cannot obtain it, to set up a merchandising organization capable of competing with established business firms.

To widen the existing basis of utilizing normal channels of trade, RFC has framed a fixed-price agreement for agents, which an agent can substitute for the cost-plus-fixed-fee arrangement which has been used. The new contract allows the agent a 40 percent service fee to cover his shipping and other expenses.

CAA, CAB Future Pends In Congress

Two committees of Congress opened consideration of the President's request for sweeping powers to reorganize the executive branch of the government last week, but it is too early to tell what may be in store for the Civil Aeronautics Administration and the Civil Aeronautics Board.

The House Committee on Expenditures in Executive Departments started hearings on legislation introduced by its chairman, Rep. Carter Manasco (D-Ala.), while the Senate Judiciary Committee, headed by Sen. Pat McCarran (D-Nev.), began hearings on a companion bill.

The bills give the President only a minimum of powers necessary to realign Washington agencies from a war to a reconversion organization.

Under the bill, however—
▶ The President could re-create the

CAA and CAB as an independent authority, giving Congress a sixty-day period in which to veto the reorganization.

▶ The President could transfer the CAA and CAB to the Interstate Commerce Commission, but Congress would still have a sixty-day period in which to veto the transfer.

▶ A Department of Transportation under a Cabinet Secretary and including the 100 and the CAB, could not be created, because of prohibitions against the creation of new executive departments and against abolition or transfer of powers of the ICC.

Meanwhile, Judiciary's chairman McCarran told AVIATION NEWS that he planned to confer with the President "in the not distant future" concerning the reorganization legislation and would, at that time, recommend to the chief executive the creation of an independent CAA.

The President, however, is known to favor transfer of CAA and CAB to the ICC.

Airmail Pickup Aids Considered By Senator

The introduction of legislation to promote the development of a nationwide system of pickup airmail feeder services is now being considered by Sen. Pat McCarran (D-Nev.).

Although the senator has not decided upon provisions to include in the contemplated legislation, he believes that a formula should be established for granting subsidies to feeder pickup operators, which would encourage the inauguration of such services and prevent the necessity of each new operator presenting an individual case to the government in order to obtain

a subsidy, but which would not, at the same time, "milk" the government in supporting basically uneconomic services.

Pacific Coast Ban On Flying Lifted

Major General H. C. Pratt, commanding general of the Western Defense Command, has lifted all military restriction on civilian flying beginning at midnight (PWT), Sept. 5, 1945, according to an announcement issued in San Francisco.

The proclamation, which removes restrictions imposed by Public Proclamation No. 22 issued February 3, 1945, abolishes restricted flying zones and returns the entire control of civil aircraft operations on the Pacific Coast to civil agencies.

A spokesman for the Western Defense Command pointed out that many regulations have been put into effect by the Civil Aeronautics Administration and that civilian fliers should not assume that such regulations have been altered until specific announcement is made by the C.A.A. Regulations imposed by statutory laws and executive orders are also still in effect. These include those prohibiting the making of photographs or sketches of vital military and naval installations or equipment unless prior permission has been obtained from the proper authorities.

AIA Export Parley

Export committee of the Aircraft Industries Association held a two-day meeting last weekend to discuss export problems which have arisen with the end of the war. Financing, foreign market possibilities and sales and service for American aircraft abroad were on the agenda. Irving Taylor, Douglas Aircraft, is chairman of the committee.

AVIATION CALENDAR

- Oct. 1-3—National Association of State Aviation Officials, Annual Meeting, St. Louis, Mo.
- Oct. 2—Air Navigation Committee, Provisional International Civil Aviation Organization (PICA), at Montreal.
- Oct. 3—Air Transport Committee, PICA, at Montreal.
- Oct. 4—SAE Southern California Section, Aeronautic Meeting, Los Angeles.
- Oct. 4-5—Institute of Aeronautical Sciences, Light Aircraft Meeting, Detroit.
- Oct. 9-13—Detroit International Air Show and Fourth Michigan Aviation Week.
- Oct. 12-13—Soaring Society of America, Annual Conference, Polytechnic Institute, Brooklyn, N. Y.
- Oct. 15—Interim Council, PICA, at Montreal.
- Oct. 16—International Air Transport Association, Annual Meeting, Montreal.
- Oct. 25—Institute of Aeronautical Sciences, Meeting, Washington, D. C.
- Oct. 31-Nov. 3—Tentative depending on ODT regulations, 1945 National Aviation Clinic, Oklahoma City.
- Nov. 1—SAE Southern California Section, Aeronautical Meeting, Los Angeles.
- Dec. 17—Institute of Aeronautical Sciences, Wright Brothers Lecture, Washington.

Single-Chief Surplus Agency Seen Getting Prompt Approval

Present SPB head warns of disposal crisis within three months as no longer needed aircraft and other war stocks reach "staggering amounts"; Congress appears ready to pass legislation for new organization.

Congress appears ready to pass, promptly, legislation creating a Surplus Property Administration, headed by a single administrator, and to postpone action on other proposed changes in the 1944 Surplus Property Act for two or three months.

Meanwhile, W. Stuart Symington, chairman of the Surplus Property Board, warned members of Congress that war surpluses, including aircraft, are reaching "staggering amounts," and predicted a crisis in surplus disposal within three months. He suggested that the over-riding consideration in government disposition should be speed instead of what he termed the laudable economic and social objective laid down in the present act.

▶ **Scrap List**—In this connection it appears that between 75 and 80 percent of all Army Air Forces planes in Europe when hostilities ceased there and in the Pacific when the Japs surrendered, will be scrapped. An AAF spokesman estimated that some 26,000 airplanes for which the Army has no further use will be scrapped or abandoned. The exact amount, of course, is subject to change by the Surplus Property Board, but officials there are known to be working on an extensive scrapping program, parts of which already are in effect.

In Congress, bills creating a Surplus Property Administration under a single head were drafted by Rep. Carter Menasco (D-Ala.) chairman of the House Committee on Expenditures in Executive Departments, and Senator Elbert Thomas (D-Utah) chairman of the Senate Military Affairs Committee. Thomas personally favors the three-man board set-up, but introduced the other measure for Senator O'Mahoney (D-Wyo.) who was absent from Washington.

Plans of the two committees which handle surplus disposal legislation to draw up comprehensive bills making extensive changes in the present Surplus Property Act, were dropped last week after Symington told congressmen that:

▶ A single administrator who could make sharp decisions on the administration of surplus disposals should be established immediately.

▶ Large-scale post-war dispositions have not advanced far enough and that he has not been associated long enough with the Surplus Property Board to know precisely what changes should be effected to improve the disposal machinery.

Symington informed both Manasco and Thomas that he would recommend changes in disposal, and the governing policies of the 1944 act, within sixty to ninety days. The two Congressmen agreed to postpone consideration of surplus property act amendments until Symington's recommendations have been drawn up.

Symington's call for a single administrator was echoed by board members Robert Hurley and Lt. Col. Edward Heller, the two men who probably will make their exodus from SPB when the single administrator is established. The appointment of Symington to the post is assumed in Congressional circles.

▶ **Job Ahead**—In asking for the immediate creation of a single administrator, Symington told members of Congress that "the board has now laid down the general outline of the policies which in its

judgment should be followed in disposing of surplus property. The immediate task is not primarily one of declaring policy but one of administration. The board believes that the change to a single administrator will make possible the kind of decisive administrative action that will be necessary to deal promptly and efficiently with the large amounts of property now being declared surplus."

The fact is, however, that the SPB has not submitted one of the numerous policy-making plant disposal reports to Congress, which, under the 1944 act, were due last January.

The Board's report on aircraft plant disposals, being drawn up under the direction of Frank Shallenberger, is not expected to be completed for several weeks.

▶ **Speed Favored** — Meanwhile, there appears to be strong support on Capitol Hill for Symington's suggestion that speed should be the primary consideration in government dispositions so that surplus properties can be placed in the hands of private operators as quickly as possible and put to work creating additional industrial activity and employment opportunities. Many members of Congress favor eliminating some of the "slowing up" provisions of the 1944 act, designed to achieve long-range economic objectives, such as priorities for sale of property, preference to small business instead of large concerns, and the like.

DeHavilland Lightplanes

DeHavilland Aircraft of Canada, Ltd., is expected to start production, some time in the future, of lightplanes and perhaps a pas-



NEW USE FOR PONTOONS:

A head-on view of a seaplane repair platform utilizing multi-purpose pontoons. Shown transporting a Martin PBM patrol bomber, the platform is used to bring damaged and unpowered planes to repair bases. The propulsion barge is built of the same five-by-seven steel boxes which Seabees use in construction of causeways and supply barges.

senger version of the *Mosquito*, as is the parent company in England.

Contracts cancelled at the Canadian plant cut *Mosquito* production from 1,500 to 1,153. G. A. C. Bear, general manager, said 40 *Mosquitos* remain to be completed and test flown. The plant is expected to close down production in about eight weeks with some 3,700 workers let out at that time. No plans have been announced as yet regarding reconversion of the big plant which is government-owned.

Non-Schedule Group Nears Airline Fares

Los Angeles-San Francisco service anticipates eventual undercutting of established carriers; new planes sought.

A new non-scheduled service between Los Angeles and San Francisco is looking toward an operation that can compete with, and undercut, the fares of established scheduled airlines.

Whether this can be accomplished probably will be tested within the coming year and the operation is being closely watched by aviation men in other sections as a possible yard-stick for similar services between other cities.

► **Fare**—The Pacific Coast Airways, of which K. W. Decker, Los Angeles manufacturer, is the head, inaugurated service recently with

a one-way fare of \$30 which has just been reduced to \$20, and a trip time of three hours.

The present scheduled airline fare is \$17.43, including tax, and the flying time is two hours at a block to block speed of 165-mph.

Decker hopes to be able to cut fares under airline rates and has set a one-way fare of \$12 as a goal. The company operates several types of single engine planes carrying three passengers and a pilot; 14 planes and 12 instrument certificated pilots are employed.

► **Rate Belief** — Experience gained in having carried 300 passengers during the first month of operation has convinced Decker that his proposal of a \$12 fare is entirely reasonable, though he concedes that it cannot be done with an in-flight fleet of 12 planes or at speeds provided by his present equipment.

His low fare forecast is predicated upon the possession of new planes carrying four passengers and pilot and matching or increasing scheduled airline cruising speed. He believes that such an operation will require a minimum fleet of 20 planes; 15 making one round-trip each, and five held in reserve as maintenance and overhaul replacements.

How soon the scheduled airlines operating between Los Angeles and San Francisco—United Airlines, TWA, and Western Air Lines—will have to begin concerning

themselves with this wholly unexpected threat of competition will depend upon how soon Pacific Coast can obtain equipment approximating Decker's requirements.

► **Fleet Standard** — The company may be expected to continue operations under fares slightly higher than those of scheduled airlines, until their plane requirements are filled. As rapidly as possible its fleet will be standardized by purchases of YKS Waco airplanes. And, it may experiment with adding new routes on the West Coast if post-war air travel justifies the move.

The operation of Pacific Coast Airways should provide in coming months considerable operating information both to other operators who contemplate inaugurating such service and to the Civil Aeronautics Board.

Operations began between Grand Central Airport, Glendale, midway between the Los Angeles downtown area and Lockheed Air Terminal, and San Carlos Airport, south of San Francisco's Mills Field municipal airport. Subsequently the company shifted its northern terminal to Mills Field, which also is the San Francisco terminal for scheduled airlines. Negotiations are under way at the present time to move the southern terminal to Lockheed Air Terminal, also a center of scheduled airline operations.

► **Safety Rules** — Decker's flight personnel adhere to CAA scheduled airline safety procedures and, if a flight is canceled or interrupted by weather, follows scheduled airline procedure in paying the hotel, meals, and train or bus bills of passengers.

Pilots of the company are uniformed, and for passengers who are interested provide a running account of the trip's procedures and navigation.

Rating Withdrawals Demanded By WPB

The War Production Board has warned that prime contractors and subcontractors, whose military orders have been cut back or cancelled, must promptly withdraw the ratings they have extended to their suppliers.

WPB pointed out that the contractor must immediately withdraw any extensions of the rating he has made, to orders placed by him with his suppliers for more

than \$25 worth of material. If the order is partly cancelled, the ratings must be reduced accordingly. ► **Material Halt**—This requirement does not permit a contractor to allow the extended ratings to re-

main in effect until his suppliers have delivered the materials for which the rating was extended and which are no longer needed to fill the cutback or terminated contract.

Aircraft Procurement Rule Revisions Asked By Builders

Seattle session of Mead War Investigating Committee hears spokesmen for leading airframe concerns attack 13 plane limit on government orders for new types; combat group-size output requested.

Large-scale government orders for new aircraft types, for the two-fold purpose of linking aircraft experimentation with production and enabling manufacturers to sustain their working teams during the peacetime period, was urged by spokesmen for leading airframe concerns at recent Seattle hearings of the aviation subcommittee of the Senate's Mead War Investigating Committee.

Pointing out that present procurement regulation sets 13 as the fixed number of new type planes which can be ordered from manufacturers, aircraft men called the regulation "outmoded" and "inadequate."

► **Group Test**—A sufficient number of new-type planes should be ordered, they stated, to enable the military services to test the type as an actual operational group. Thus, if a service test order for B-29's were now to be placed, W. E. Beall, vice-president of Boeing Aircraft, suggested, instead of ordering 13 planes as required by peacetime procurement regulation, the military services should order 45 planes, since a B-29 group is composed of that number.

For a service test order of fighters, Beall proposed that 90 planes be ordered, since a fighter group is normally comprised of that strength.

Satisfactory maneuver testing of new military plane types can be achieved, during peacetime, only by procurement of a complete operation group, aircraft men told the senators.

► **Production Problem** — Furthermore, under the 13-plane order, it was pointed out, the manufacturer does not plan his model for production, nor design tools for the mass production of the plane—two factors which, in the case of an emergency, would be as vital as the

existence of the advanced type plane itself.

Witnesses who appeared before the Mead subcommittee, headed by Sen. Hugh Mitchell (D-Wash.) were: Beall; C. L. Egtvdt, chairman, Boeing; Harry Woodhead, president, Consolidated - Vultee; Ward Beeman, chief of aeronautical research, Lockheed Aircraft.

J. H. Kindelberger, president, North American Aviation; John K. Northrop, president, Northrop Aircraft; Arthur Raymond, vice-president, Douglas Aircraft; Lucian W. Shaw, assistant to the president of Lockheed; H. C. Thomas, president, the Aircraft Parts Manufacturers Association.

► **Research Time** — Reporting that

time spent on aircraft research at Boeing jumped 740 percent between 1941 and 1944, Boeing witnesses called attention to the increasing complexity of aircraft development and the pyramiding costs which must be allocated to engineering and designing research.

Recommendations made by the aircraft men, as methods of keeping American aviation in world leadership during peacetime were:

► That the government at all time have a minimum of two preliminary design study contracts for each type or category of aircraft placed with the industry.

► That the government let experimental contracts for three planes on models which preliminary design studies indicate feasibility of development.

► That experimental plane models which are proven be ordered in sufficient quantities to enable the development of production techniques and permit complete proving through operation group maneuvers.

Aircraft men called for a "far-sighted attitude" on the part of the government with respect to inclusion of costs for special tooling on future aircraft orders.

In the disposal of surplus aircraft plants, West Coast aircraft manufacturers debunked the school of thought favoring establishment of an inland aircraft industry for

Army-Navy Air Procurement

Clearer determination of Army and Navy aircraft procurement policies is expected shortly, possibly this week, with the submission to Congress of a report drafted at the direction of President Truman.

Although its exact nature is still kept confidential, it is understood to follow broad lines generally approved by various agencies to keep alive a nucleus of the industry that could quickly be expanded in case of need.

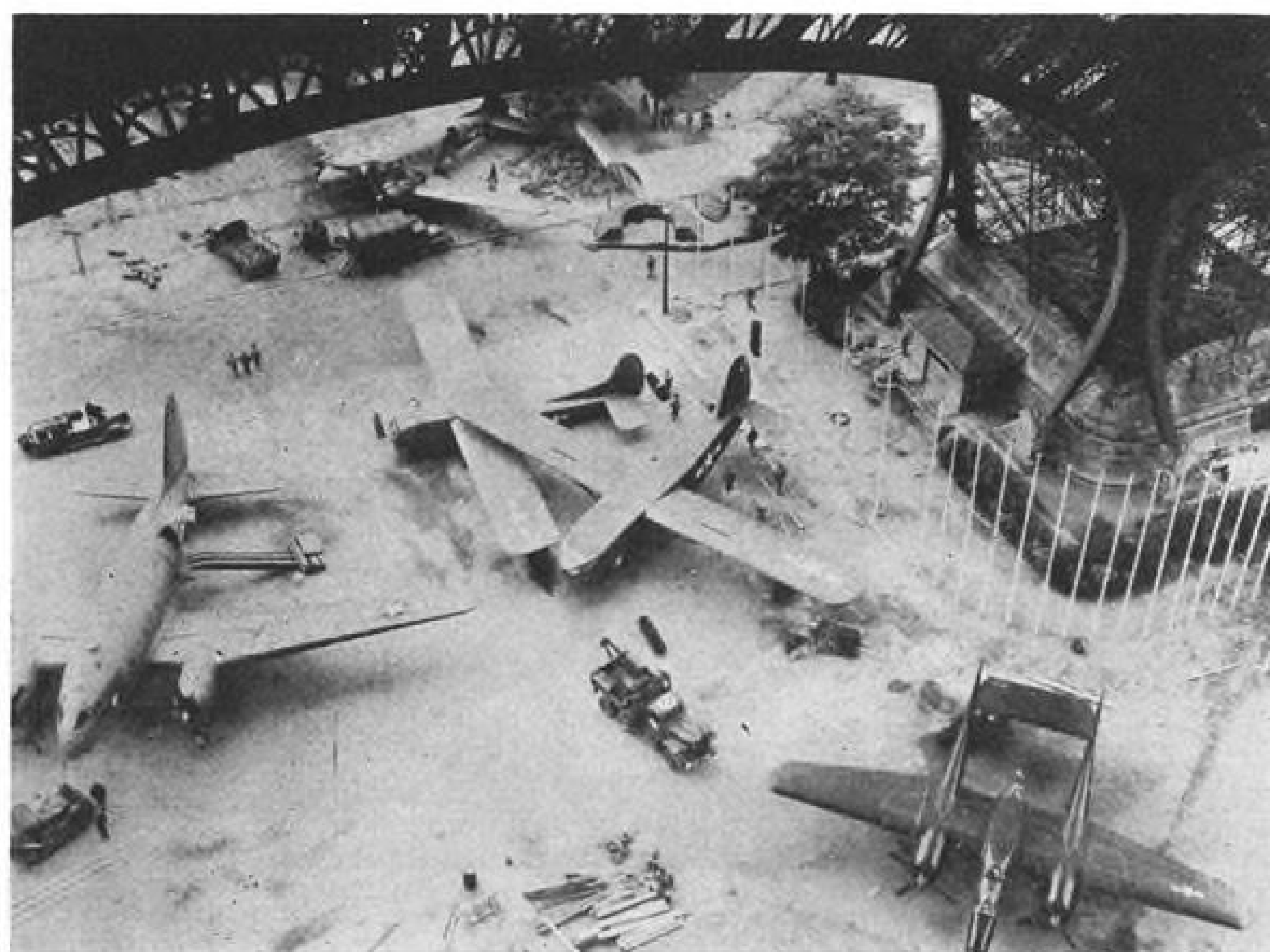
The report has been formulated under the supervision of the Secretaries of War and Navy, John W. Snyder, director of reconversion, and Harold Smith, director of the Budget Bureau. Budget was brought in to work out the fiscal aspects of the recommendations, with Snyder's office coordinating the views of all agencies concerned.

With the procurement recommendations probably will go the Budget Bureau's requests to Congress to repeal wartime appropri-

ations. However, it is believed Budget will ask that sufficient funds be left with War and Navy to cover expenditures envisioned by the procurement policies.

It is considered likely that the recommendations will ask for considerable amounts for research and development, and outline in general terms the projects to be undertaken. It will leave undecided—or at least up to Congressional decision—whether the research will be undertaken by AAF facilities at Wright Field, the National Advisory Committee for Aeronautics, or by the aircraft industry.

This latter is a point which is causing increasing concern to the industry. Spokesmen emphasize that there must be a delineation of where government research work stops and the industry job begins. Otherwise, there is a risk that industrial research facilities will deteriorate from lack of sufficient use, and that industry's research in general will suffer.



EIFFEL TOWER SHELTERS AAF SHOW:

Ground crewmen assemble transport planes, gliders and a Northrop Black Widow night fighter at an outdoor show, in Paris, of the AAF planes which helped knock out the Germans.

strategic purposes. The West Coasters pointed out that with planes now flying the Great Circle route, the West Coast is one of the least vulnerable locations in the country.

► **Bomb Protection**—Consolidated's Woodhead pointed, however, to the desirability for "dispersal" of "integrated" aircraft plants in different parts of the country so that the nation's plane manufacturing industry could not be wiped out in a few bombings.

If there are sufficient military orders, Woodhead reported, this can be accomplished. He said that Consolidated-Vultee has offered to keep both its large San Diego and Fort Worth plants going, if there is sufficient government work to warrant their operations, but that if a choice must be made, the firm will abandon the Fort Worth location.

Woodhead took an emphatic stand against retaining surplus aircraft plants in standby condition for operations during a future emergency. They should be sold for whatever purposes they can be used, he declared, and make a contribution toward national prosperity and employment opportunities. Plants maintained in idle standby, Woodhead said, "would not be of any appreciable value in the case of future war."

Commercial Radar Planned On Coast

Equipment that can land planes every 30 seconds, regardless of weather, announced by Gilfillan.

Ground Control Approach radar equipment that can land an airplane every 30 seconds, regardless of weather conditions, is being developed for peacetime commercial aviation use by Gilfillan Bros., Inc., Los Angeles, it was announced last week.

The equipment, which has already been put to severe service tests at Army Air Force bases in the European and Pacific war theaters, was first developed in 1942 and put into service in 1943. It has been held secret until released recently by the War Department.

► **Portable Unit**—Operated as a portable unit which includes a truck and trailer, the GCA equipment may be stationed at any point and may be used in connection with, and supplementary to, present airport control equipment.

For the past two months the GCA units have been under test at the Civil Aeronautics Administration experimental station at Indianapolis municipal airport. Equipment there was loaned by the War Department to CAA, and

requires five operators. Cost to the army was reportedly about \$370,000, per set.

A recent demonstration at Lockheed Air Terminal, by the Army, required three operators. The manufacturer has disclosed that his engineers are working on a "peacetime" model of the landing control, which perhaps may be less costly, and require less personnel.

Gilfillan engineers estimate that their sets have a waiting market at 35 major continental airports. The equipment is entirely a ground installation, with no device required in the plane. The operator detects the approaching plane on the radar screen and then "talks the plane down" by voice radio, to a proper landing.

In describing the system, a company announcement says:

"It's use on our air fields will mean great savings of life, planes, cargoes and equipment in the expanded air traffic that is ahead of us. It can save large sums and much time by preventing the cancellation of flight schedules."

Among GCA's other attributes, the manufacturer reports, it will: ► Bring planes onto any air field safely through fog, storm, darkness and other flying hazards. ► Guide planes safely around buildings, mountains, or other aircraft in all weather conditions. ► Control many planes at one time, keeping them circling if necessary at different elevations to prevent collision.

The 30 second landing rate compares with a three-minute interval required for instrument landings in a recent CAA experimental demonstration at Indianapolis, in which the Gilfillan equipment was not used.

Separation of CAA-CAB From Commerce Urged

Separation of the federal aviation agencies, both Civil Aeronautics Administration and Civil Aeronautics Board, from their present connection with the Department of Commerce, and restoration to the independent status is again being strongly advocated on Capitol Hill. It was reported that one group of Republicans was offering to block the federal airport bill, until the separation could be affected. If the CAA-sponsored airport bill gets by this obstacle it is still headed for trouble at the hands of Congressmen who have returned to Washington with economy lectures from their constituents ringing in their ears.

PRIVATE FLYING

Small Airport Building Bans Expected To End In 60 Days

Two-month limit set for WPB restrictions on new construction; officials assert private flying facilities will get secondary consideration until then; most materials already available.

By ALEXANDER McSURELY

All WPB construction restrictions, which have been holding back new work on small airports, are expected to be discarded within 60 days, AVIATION NEWS learned last week.

A WPB spokesman disclosed, however, that until whatever time the controls are lifted, the small airports for private flyers will not receive as much consideration as "main-line" airports in release of projects.

► **Plants First** — And, generally speaking, all airport construction is regarded as secondary along with many other types of construction, to any construction of manufacturing plants which will give continuing employment to large numbers of displaced war workers.

Considerable airport construction, particularly grading and runway construction, is getting underway already, however.

WPB recently gave clearance for some construction projects at 31 airports under a federal aid program authorized by Congress several years ago but delayed by wartime priorities. The projects, widely scattered throughout the country, involve expenditure of \$9,907,890 for paving, grading, clearing, drainage, lighting and similar work.

► **No Priorities**—The clearance did not give priority assistance, and CAA airways engineering division reports some difficulty in letting contracts because of this. However, the contracts are being re-advertised and better results are anticipated.

Investigation of material sources indicates that WPB controls are now largely a matter of policy, since most construction materials, with a few exceptions, are readily available.

Lumber, cast iron pipe, and brick are still regarded as critical materials, but shortages in all

three are attributed to insufficient labor, at production points, rather than to any lack of materials themselves.

► **Lumber Lag**—The lumber shortage may continue several months, but the labor turnover now in progress is expected eventually to provide the additional manpower with shortages eased probably by the first of the year.

Other basic materials such as concrete, asphalt, gravel, and sand are in good supply, with the transportation problem the main difficulty. Airport lighting equipment, previously tied up by Army-Navy orders is now open to civilians, as is radio equipment.

A considerable stock of supplies useful in airport construction currently is in inventory for the Army and Navy, and much of it eventually will be surplus, and available for civilian purchases.

► **Field Lights**—Airport boundary lights, and other lighting equipment is among this, although the condition of the equipment varies. Some portable field lighting systems used by the Army, now are in surplus, and might be used by some fields for a temporary system, pending a more suitable permanent installation.

Until WPB does lift construction controls, airport projects are still subject to WPB clearance. Local government units or individuals contemplating new airport construction or improvements on their existing fields, must fill out WPB Form 617, obtainable at local WPB offices, and file this as a request for authorization.

Sheet steel, which is being favored as a lightplane hangar material, is, or soon will be, in plentiful supply, since it was largely used for Quonset hut construction for the military forces; similar to the type of hangar construction which is being projected. It is likely the brick and lumber shortage

Michigan Base

Expansion of the Pontiac (Mich.) City Airport to provide servicing and hangar facilities for 300-400 private planes is now in the planning stage.

M. W. Cochran, chief airport engineer for the Detroit engineering firm of Giffels & Vallet, Inc., is in charge of a study for the planning and design of the expanded field. The study has been recommended by the Michigan state board of aeronautics because of the airport's proximity to Detroit and to several high income suburban communities makes it a logical future base for personal planes in the area.

► **Builder Record**—The Pontiac contract makes the 86th airport in North, South and Central America which has been engineered, in whole or in part by Giffels & Vallet.

will mean that sheet steel, concrete, concrete block, and cinder block will probably be the leading hangar materials in the immediate future.

► **Pleasure 'Ports** — WPB officials appear to view small airports for the private flyer, not used for air transport as "pleasure airports" and, as such, less essential than other types of industry.

The planners of private airports may proceed with grading and preparing the field, with expectation that by the time this part of the job is completed, the WPB lid will be off and they will be able to place contracts for building construction without taking second place to some other builder who has been designated by WPB as "more essential."

Lockheed Air Terminal Probes Peacetime Uses

Expansion of field and hangar facilities at Lockheed Air Terminal, Burbank, Calif., are contemplated, with an engineering survey of peacetime uses of the airport already started.

The Lockheed terminal today is overcrowded, and R. V. Burns, acting manager since the recent resignation of Dudley M. Steele, has been forced to reject requests of non-scheduled operators to lease space.

► **Flight Frequency**—While a forthcoming shift of airline terminal

U. S.-Britain Air License Exchange

Pending acceptance by the Provisional International Civil Aviation Organization of technical annexes based on those drafted last November at Chicago, the U. S. is expected shortly to arrange with Great Britain for reciprocity in the granting of pilots' licenses.

Annex E, proposed to be attached to the permanent convention on civil aviation, sets forth pilot requirements which will be binding on all signatory nations when approved. From this is expected to come some form of international license which would make unnecessary such reciprocity as now being discussed.

► **Date Indefinite**—However, it is not known when Annex E will be taken up by the technical committee of PICAQ in Montreal. First of the 12 draft annexes is to be studied beginning October 2. Upon its approval, either in present or in amended form, Annex E will become part of the permanent convention which will

become operative when ratified by 26 nations.

Meanwhile, the U. S. has agreements with 17 countries under which foreign pilots can fly planes of their own nationality in the U. S. However, foreign pilots must have U. S. licenses to fly aircraft registered in this country.

The reciprocity discussions between the U. S. and Great Britain were instigated by Peter Masefield, new British civil air attache in this country. He intends to do a great deal of flying both in a British Miles M-28, and in U. S. planes. Similarly, there are a number of U. S. pilots in Great Britain who desire to fly and will use British planes.

► **'Exam' Plan**—Foreign pilots in the U. S. must pass both written and flight examinations to obtain CAA certificates. Masefield has proposed eliminating the flight test. Written exams would be required in both countries, and Great Britain would amend its requirements to conform to U.S.



"Swift" Revs Up: Newest photo of the two-place Globe Swift prototype shows the plane revving up in preparation for takeoff. Wing-slots, hydraulic retractable landing gear, and sliding cockpit enclosure are shown clearly.

operations from Lockheed to Los Angeles municipal airport is expected to affect the Lockheed field's present income, there appears a strong possibility that the number of flights to and out of the Burbank field will not be materially reduced, since its location, at least for supplemental service, is well suited to a large portion of the Los Angeles metropolitan area.

High School Flight Program Succeeds

Approximately 300 Tennessee students from 41 high schools were given flight experience under a recent experimental program conducted by the Tennessee Bureau of Aeronautics with 13 flight operators participating, with a perfect safety record, a report by the state division of aeronautics education discloses.

A questionnaire answered by 72 of the students, showed the following opinions:

►Aviation has equal value with mathematics and science as a high school subject.

►Thirty-one students said they learned more geography from aviation studies than from geography courses in school.

►Sixty-three believed that the high school student should pay part of the cost of flight training. (In the program the students paid half the cost.)

Parents of the students were also requested to answer a questionnaire, in which all replies indicated that class work in aviation and flight experience should be a part of the high school curriculum.

Operators reported a general increase in flight training as a result of the course. Of the 72 students replying to the survey, 49 were continuing to take flying les-

sons after completing the four hour flight experience course, while 8 had entered the armed forces and the remainder were working or could not finance flight instruction.

►Reports from operators included: Wood's Flying Service, Knoxville, 9 students continued to fly, 7 have already soloed; Milan Flying Service, private business has doubled since beginning flight experience program;

Bandy Flying Service, Union City, 2 girls and 3 boys have gone on to solo, and three other local citizens have enrolled for private courses;

Knapp Flying Service, Clarksville, 4 students continued, and 8 others not in the classes, took 60 additional hours; Buck's Flight School Chattanooga, 15 new students and 3 private courses are attributed to the school course.

"AI" Cards Halted

Removal of the requirement for an "airman's identification card," ordered last week by the Civil Aeronautics Board, further simplifies the steps toward becoming a private pilot.

Under temporary wartime restrictions all pilots had been required to carry an identification card, signed by the Administrator of Civil Aeronautics and containing the pilot's photograph, fingerprints, and signature, or a document identifying the pilot as a member of the Army, Navy, Marine Corps or Coast Guard.

►License Only—The CAB last week repealed Section 43.401 of the Civil Air Regulations, which had required this identification. Hereafter pilots will need to carry only their pilot certificate and medical certificate.

Swift Powerplant Raised To 115-Hp.

Globe two-place lightplane plans drop optional engine feature to raise speed, climb, range.

Increased power for the Globe Swift will be provided by the use of a 115-hp. engine in the two-place plane instead of the optional 85 or 100-hp. powerplants previously announced.

John Kennedy, president and general manager of Globe Aircraft Corp., Ft. Worth, Tex., has announced that the Swift's new powerplant will be a six-cylinder horizontal opposed Continental engine, expected to step cruising speed of the airplane up to from 135 to 140-mph. using 75 percent of power.

►Same Structure—The new engine will not increase weight or size of the present engine nacelle, but will insure a 600-ft. takeoff run, 850-ft. per minute rate of climb, and lift the service ceiling to more than 16,000-ft.

Earlier performance figures announced with the standard 85-hp. engine, had included 125-mph. cruise, 700-ft. climb, and 14,200-ft. ceiling.

Globe has also announced that the production Swift will be an all-metal plane, with metal-skin wing, instead of the plastic-bonded plywood wing originally planned.

Prices of \$3,295 for the 85-hp. Swift, and \$3,450 for the 100-hp. version which were tentatively quoted, presumably will be revised upward to cover the additional cost of the higher-horsepower engine.

►Production Date—First of the production Swifts is expected to appear "after Oct. 1," although quantity production and deliveries to customers may be delayed until around the end of the year.

Hydraulic mechanism for retracting the Swift's landing gear, is connected with red and green indicator lights on the instrument panel showing whether or not the wheels are down. Spring-loaded pins automatically lock wheels in down position as soon as the gear is fully extended. An auxiliary manual device for lowering wheels is provided as insurance against failure of the hydraulic mechanism.

Slots and flaps and the dihedral angle of the wing and of the horizontal stabilizer give the plane exceptional directional and longi-

tudinal stability, under all flight conditions, the company reports.

►More Features—Additional "in-

novations" are to be incorporated on the Swift within the next few months, Kennedy said.

Southwest Private Flight Boom Previews Vast Peace Expansion

Sixth Region CAA officials swamped by pilot license, aircraft certification requests in record breaking numbers; 1,000 new planes in area during year; written examinations increase 240 percent.

Optimistic preview of the potential peacetime expansion of private flying is found in the report of a boom which has already started among private flyers in the Sixth CAA Region, including California, Utah, Nevada and New Mexico.

Small airport operators, flying schools and private flyers are producing a volume of work which is taxing the staff of H. A. Hook, Sixth Region CAA administrator, to capacity.

Within the last six months:

►Student certificates granted have increased 160 percent.

►Identification cards granted have increased 140 percent.

►Written examinations given have increased 240 percent.

►Pilot certificates and ratings issued have increased 160 percent.

►Aircraft certificated have increased 170 percent.

The region's staff of 26 inspectors one-half the pre-war number, is 30 days behind in aircraft certification and unable to keep up with the demand for pilot tickets, Harold Bromley, regional inspection chief, reports. Designation of private pilot flight examiners is expected to relieve part of the congestion.

At Phoenix, Ariz., 501 applications for private licenses were made in a single day, most of them for ex-Army pilots; more than 400 qualified. At Oakland, Calif., CAA is receiving an average of 150 pilot applications a week.

►Mechanics' Reaction — Appointment of civilian aircraft and engine mechanics to make inspections for aircraft licensing, as an attempt to speed this process, has not been too well received by the mechanics, since they are not permitted to charge for the service. CAA assumes they will profit ultimately by thus attracting maintenance and overhaul work. Major complaint is about the two-to-five

hours of paper work for each inspection. A new CAA form 309, now printing, is expected to reduce paper work to from one-half to one-third present volume.

In Los Angeles alone, the General Inspection division gave 830 examinations in June and 1,650 in July. The region is issuing pilot certificates to military pilots at the rate of 1,000 a month, and an increase is expected.

In the last nine months, 1,000 surplus aircraft have been sold in the region, and more aircraft are ready to be certificated than can be handled at the present time. A recent visit to one airport in San Diego disclosed more aircraft there than were located in the entire San Diego area before the war.

►Field Rush—One small airport exclusively for private flying, reported 90 takeoffs and landings an hour at peak periods on Sundays.

On Jan. 1, 1945, there were 34 designated airports in California, whereas today there are 115 of which 96 are approved for flight training.

Still further increase in all kinds of flying is expected with final lifting of all flight restrictions on the west coast by military authorities.

Industry Air Club Sets New Pattern

The six-months old Rac-Aero Flying Club, 100-member organization formed by employees of Republic Aviation Corp., offers a pattern which may be emulated by employees of many other industrial organizations as more lightplanes become available.

The club owns five light trainers, purchased with proceeds of a \$75 initiation fee charged each member. The membership is frozen at 100, with new applicants accepted only as replacements.

►More Planes—The club plans to

buy additional planes, some with higher horsepower rating, and a number of Republic Seabee amphibians.

Members pay \$6 an hour for dual instruction and \$3 an hour for solo time. Thirty-two fledgling club members have soloed and are completing time for private licenses. Ground school courses are conducted each Thursday night, when licensed instructors discuss navigation, meteorology, plane maintenance, parachutes, civil air regulations and the theory of flight. Films are used in connection with the lectures.

The club's flying operations are conducted at Republic Field, Farmingdale, L. I. Officers include Phil Dorrier, president; Hans Nordman, vice-president; Hugh Burke, treasurer; George Wheat, secretary.

War-Used Airports Readied For Release

The armed forces are making plans to return to civil control many civil airports which have been leased or otherwise acquired by them during the war as soon as determination can be made that no further military or naval need for their retention exists.

The Army and Navy reported that final determination is dependent on a number of currently "indeterminate" factors such as the future international situation, the extent of participation in any international organization, the size and deployment of the armed forces as required by these factors and the status of aeronautical development at the home base.

►Interim Use—Pending final decision, fields will be made available by permit for joint civil and military use so long as this does not interfere with essential military and naval operations. Fields retained by the armed forces will be available to civilian craft for emergency landings only.

One of the factors currently holding up disposition of the fields is that both Army and CAA believe they should pass to municipalities by government grant, but the Surplus Property Disposal law forbids the giving away of property. George Borsari, formerly of the legal staff of CAA's airport services, has been loaned to SPB to assist in writing the airport disposal regulation, and it is believed the grant proposition is one of the matters he is tackling.

Warning Sounded On Wire Collisions

Six safety rules outlined by CAB after lightplane accident probes reveal increasing toll of unseen obstructions.

Accidents resulting from collision with wires has prompted the Civil Aeronautics Board Safety Bureau to outline six safety suggestions:

- ▶ Avoid unnecessary low flying—there are no wires up above.
- ▶ Wires are extremely difficult to see when flying into the sun.
- ▶ Wires are sometimes invisible against a water or green foliage background.
- ▶ Poles are frequently obscured by trees.
- ▶ Wires often span rivers and small lakes.
- ▶ Wires often cross open fields as well as parallel roads.

Emphasizing the acute need for caution by pilots against this type mishap, the Safety Bureau points out that over the period of a year there were 122 wire collisions by

planes in full flight, resulting in ten fatalities and 40 injuries; 35 occurred during landings, 33 during simulated forced landing practice, 21 during low flying, 11 during forced landings, ten during precautionary landings, seven during takeoffs, and five while crop dusting.

Briefs of six recently investigated accidents, two of which are wire collision cases, with the board's decision, follow:

PHOENIX, ARIZ.: Private Pilot Frederick W. Lucas, 36 (262 flight hours), was seriously injured when his S-1A Interstate "Cadet" collided with power lines while dragging a field, about 40 miles south of Phoenix, Mar. 6, 1945. His passenger, Miss Mickey Stauffer, was uninjured. Lucas and his passenger, after watching operations, decided to land on the crop dusting strip. He made an approach toward the south, intent on dragging the strip prior to landing. The aircraft struck two wires about 25 feet high which were at right angles to the flight path near the north boundary of the strip. The plane then went out of control and crashed about 125 feet beyond. Lucas stated that he was so intent on watching the landing area that he failed to see the wires until too late and then attempted to go under them.

CAB FINDING: Probable cause of accident was failure of pilot to see and avoid wires in the flight path.

WHITEFORD TOWNSHIP, MICH. Student Pilot George Vernon Cowdrey, 33 (17 solo hours), was fatally injured when the BL-65 Taylorcraft he was flying collided with high-tension lines during a practice flight, Mar. 13, 1945. Cowdrey took off from the National Airport, Toledo, Ohio, for a local practice flight. The plane was seen flying near Whiteford

Township for about 20 minutes at 200 to 300 feet altitude. One simulated forced landing was made to within 20 feet of the ground following which the plane was flown at a low altitude for a half mile. At this point it struck high-tension lines 30 feet high and plunged to the ground. Investigation revealed no evidence of malfunctioning of the aircraft.

CAB FINDING: Probable cause of accident was pilot's failure to see and avoid a high-tension line while flying at a recklessly low altitude.

WAVERLY, LA.: Commercial Pilot Chester John Montgomery, 28 (2,000 hours flight time), Tallulah, was fatally injured when he lost control of a "Travellaire" 4000 during a turn while crop dusting, Mar. 24, 1945. Montgomery took off to resume dusting crops, flying at an altitude of about 50 feet. The wind was south 25-mph. and gusty. At the end of a southbound run a steep turn was started to the right. This turn had progressed nearly through 130 degrees when the aircraft fell off to the right and crashed. There was no indication of failure of the aircraft prior to impact. Fuel was ample and weight and c.g. limitations were not exceeded.

CAB FINDING: Probable cause of accident was failure to maintain control of the aircraft during a steeply banked downwind turn near the ground. A contributing factor was the strong gusty wind.

BOARDMAN, WIS.: Student Pilot Gordon Arthur Dittman, 18, New Richmond (six solo hours), was seriously injured and a Piper J3L-65 demolished when he crashed following low flying over his father's rural home, Dec. 24, 1944. Dittman took off from Northport Airport for a local one hour practice flight, performed maneuvers for awhile, and then flew to his father's home 20 miles from the airport. While flying close to the farm buildings at a very low altitude the right wing struck a silo, and the plane plunged through a nearby barn roof coming to rest in an inverted position inside the barn.

CAB FINDING: Probable cause of accident was reckless low flying which resulted in collision with a silo and barn.

TERRE HAUTE, IND.: Student Pilot Frank Leonard Fulke, Jr., 17 (140 hours flying time), was fatally injured, and Student Pilot William Thomas Hunter, 17 (37 hours), injured critically when the Piper J3F-65 they were flying crashed during an unauthorized flight at low altitude, Jan. 27, 1945. An hour after takeoff from Paul Cox Airport the plane, flying very low, was seen to enter a turn and then descend behind trees out of view. It struck a 60-foot tree about 10 feet from the top and plunged to the ground coming to rest about 300 feet away. Investigation revealed no malfunctioning of the aircraft. The airport manager reported that he had grounded Fulke twice within the preceding year for low flying.

CAB FINDING: Probable cause of accident was extremely low flying which resulted in collision with a tree.

SPRINGFIELD, MO.: Instructor George B. Yates, Jr. (437 flight hours and holder of a commercial certificate), and Student Pilot William Burdick (three solo hours), were killed when the Porterfield CP-65 in which they were flying spun and crashed following a low altitude stall, Jan. 11, 1945. Yates and Burdick took off from the Springfield Municipal Airport for a local instruction flight. Witness stated that he observed the aircraft in a glide at about 200 feet with the engine running irregularly. Following one spurt of engine noise the plane went down right wing first and crashed in a timbered region. Examination indicated no failure of any part of the plane. It appears that a simulated forced landing was being practiced.

CAB FINDING: Probable cause of accident was failure to maintain sufficient gliding speed while practicing a simulated forced landing.

Canadian Training Base Becomes Private Field

"Little Norway," one of two flight training bases used in Canada, for training flyers of the Royal Norwegian Air Force, has been sold for conversion to a civilian flight center.

The field, located at Gravenhurst, Ont., will be operated by RCAF Flight Officer Bill Doherty, prewar commercial pilot, and son of the purchaser, W. H. Doherty.

▶ **Base Buildings**—The 350 acre

"camp" and buildings originally were valued at \$250,000 including a standard RCAF hangar which houses, under one roof, workshops, offices and classrooms. Other buildings are four barracks, recreation hall, hospital, and several small shops.

Doherty will retain the name "Little Norway" for his civilian operation which will include a flight training school together with air transport service.

Lightplane Engine Output Set By GM

Much-discussed powerplant announced officially for first time; seen as means to new personal plane standard.

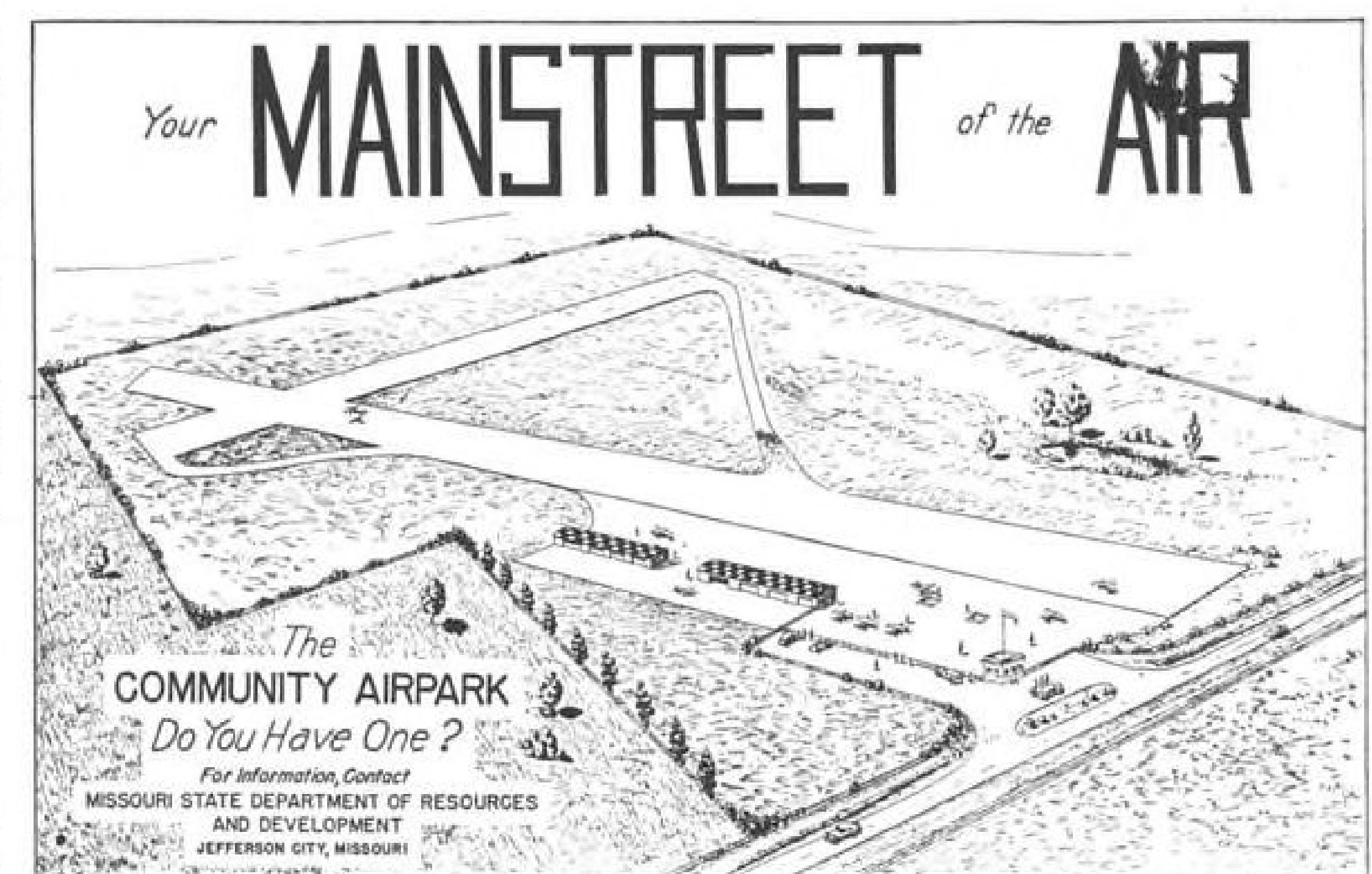
Indication that the much-discussed General Motors 200-hp., two-cycle, four-cylinder liquid cooled lightplane engine, is now ready for production and marketing, is found in the first official announcement of the powerplant by GM President C. E. Wilson, last week.

Seen as a likely powerplant for four-to-five-place family planes, the engine, previously described and pictured in AVIATION NEWS, has simplified design features which should enable the huge manufacturing organization to produce it at low cost if marketing potential justifies its output by the mass production methods of automotive industry.

▶ **Long Labor**—Developed by the GM research division at Detroit over a period of eight years, during which numerous models were built and test flown, the two-cycle engine is only 35 inches in diameter and weighs 275 pounds dry. Its piston displacement is only 250 cubic inches, about the same as that of an automobile engine, yet it normally develops 200-hp. with a high safety factor, the company reports.

It uses a supercharging blower to increase performance and power reserve for takeoff and altitude flight, and it is believed to be the only small engine currently manufactured which is liquid cooled and which may be installed for the same weight as an air-cooled engine. There are no valves, the valve function being performed by the pistons themselves.

Oil consumption is described as low, with a quart of oil serving for six hours running. Fuel consump-



AIRPARK CAMPAIGNING:

Gene Fryhoff, aviation representative of the Missouri State Department of Resources and Control, is using this poster, liberally spread about the state, to make the Ozark state's communities more conscious of the need for additional airparks. It's another part of his campaign which also includes the model airpark at Eldon, Mo., now sponsored by several national aviation organizations.

tion is comparable to that of other engines of similar power, about 13 gallons an hour, using 91 octane gasoline.

▶ **Buick Testing**—Wilson said that market potential and production studies are now being conducted by Buick motor division. This appears to confirm earlier reports that the lightplane engine would not be included in Allison engine division projects, because of the vast difference between the huge, high horsepower Allison powerplants and this junior-size engine.

Wilson disclosed that part of the engine's development had been under military contracts in connection with development of robot planes.

While high engine costs have been a major barrier to reduction of personal plane prices to a point where they can be mass-marketed, the GM engine offers new hopes for the private flyer. There is a good possibility, too, that the 200-hp. GM engine may create a trend toward manufacturing of larger personal planes, and away from the two-place personal plane which is currently standard.

▶ **Transition** — Marketing experts believe that a four-to-five place plane is the ultimate design for personal use and, if GM can sell its engine for a low enough price, the transition from two-place planes may take place sooner than has been expected.

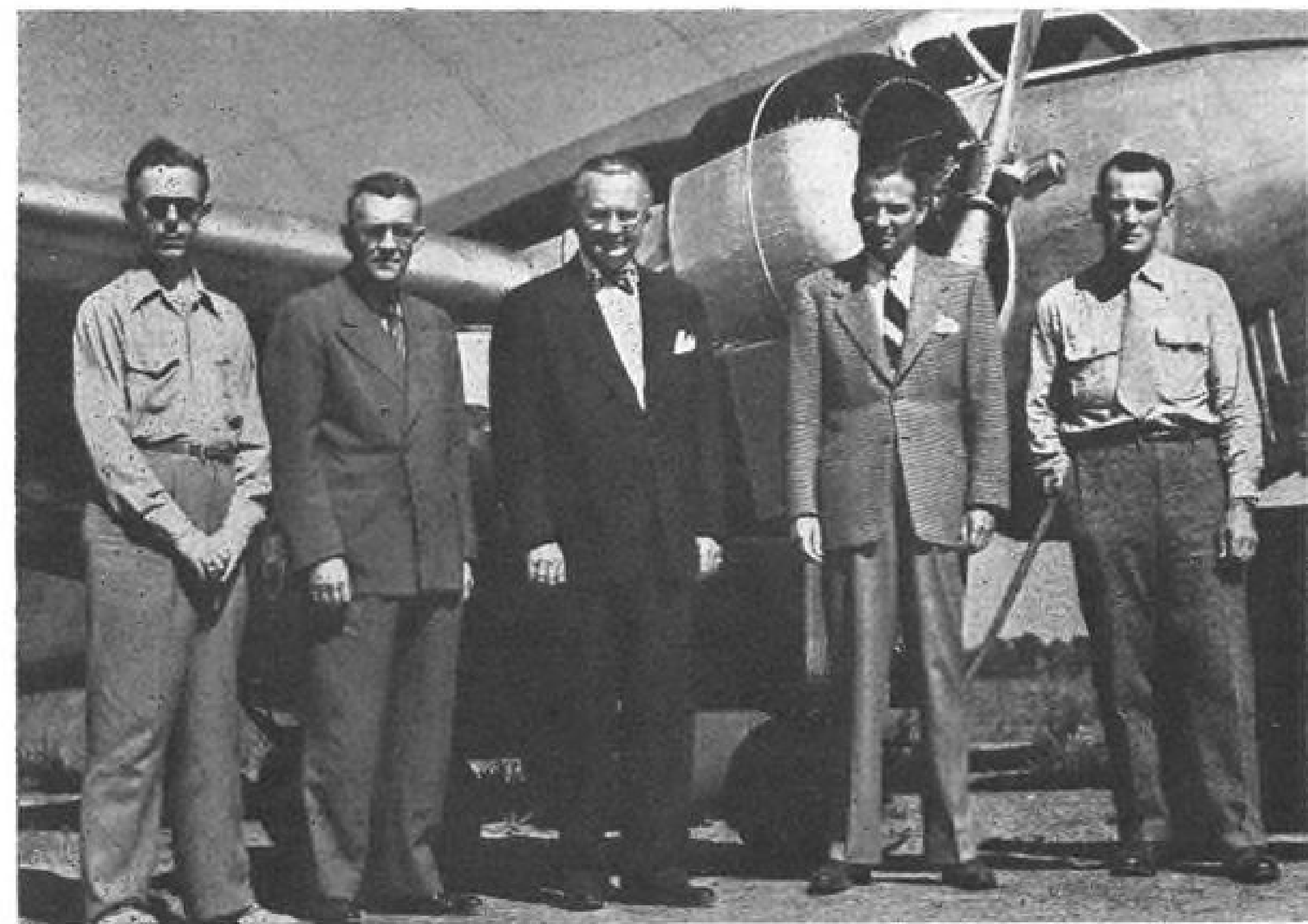
Cadet Parts Pool Formed By Harlow

Establishment of a complete "parts service" department for Cadet planes is the first step of Harlow Aircraft Company, following acquisition of exclusive manufacturing rights to the Interstate Cadet.

At Harlow's Alhambra (Calif.) airport, recently purchased from TWA, the company is stocking replacement ribs, spars, engine mounts, landing gears, small assemblies and complete fuselages, to assure Cadet owners and service operators of an immediate source of factory-built replacements, made on the same jigs and fixtures as the original components.

▶ **Unit Head**—H. F. Keenan, Harlow president, has announced appointment of John A. Beach, as head of this department. Beach was formerly with the customer service division of Lockheed Aircraft Corp., also serving in Great Britain with Lockheed Overseas Corp.

First demonstrator deliveries of Harlow-built Cadets will be made in September, Keenan said, with Tools and jigs have been transferred and production is now in progress. First planes to come from the Harlow production line are Cadet S-1-A's, similar to



AIR SALES TOUR:

Using a chartered Lockheed Electra, sales and advertising executives of Olympic division, Hamilton Radio Corp., New York, have just completed a 7,000 mile tour of the firm's major distributors, to demonstrate new radio models and present advertising and merchandising programs. The group made the tour in 43 hours flying time, starting from LaGuardia field, July 29 and returning Aug. 17. Jack Crossin (center), sales director, reported the group made every meeting "exactly on schedule" and called the chartered plane "the ideal transportation medium" for such a sales tour. The plane carried 1,100 pounds of demonstrator models and merchandising materials. Left to right: Ralph Morse, pilot; Sam C. Mitchell, sales and promotion manager; Crossin; C. E. Stauffer, executive vice-president of Sherman K. Ellis & Co., advertising agency, and Sam Zelkon, co-pilot.

those used in Civilian Pilot Training and War Training Service programs. There are now more than 600 Cadet S-1-A's and S-1-B's in service.

Harlow is receiving estimates of dealer requirements for the first six months of 1946 from former Cadet dealers, and is naming additional dealers in areas where Cadets formerly were without representation.

CAA Approves 30 Lightplane Licenses

The Civil Aeronautics Administration has issued 30 new airworthiness certificates for lightplanes purchased from military surplus by individuals and firms.

List of the aircraft numbers, buyers, make and model of plane, engine, and date of manufacture follows:

- NC 50166—Arnold Beck, 3509 N. Grand, St. Louis, Mo. Boeing, Continental W6706N, Mfd. Jan. 1941.
- NC 53128—James N. Dean, 6556 El Cajon Blvd., San Diego, Calif. Boeing, Continental W6706A, Mfd. Mar. 1941.
- NC 53178—Fred L. Truxa, 15418 South Central, Compton, Calif. Boeing, Continental W6706A, Mfd. June 1942.
- NC 46370—Genesee Aviation Sales Co., East Henrietta Rd., Henrietta, N. Y. Fairchild, Ranger 6440C2, Mfd. Aug. 1943.
- NC 46376—F. W. McCormack, 1616 Walnut St., Philadelphia, Penna. Fairchild, Ranger 6440C2, Mfd. Apr. 1943.
- NC 46380—Russell T. Latshaw, R.D. 1, Spring City, Penna. Fairchild, Ranger 6440C2, Mfd. July 1943.
- NC 46381—John C. Steiff, 550 W. Oak St., Frackville, Penna. Fairchild, Ranger 6440C2, Mfd. Aug. 1942.
- NC 46383—Wesley B. Nyce, Pottstown Airport, Pottstown, Penna. Fairchild, Ranger 6440C2, Mfd. July 1943.
- NC 46387—F. Wells McCormack, 1616 Walnut St., Philadelphia, Penna. Fairchild, Ranger 6440C2, Mfd. May 1943.
- NC 46402—Harold D. Swank, Scranton Airport, Clarks Summit, Penna. Fairchild, Ranger 6440C2, Mfd. Aug. 1943.
- NC 46469—Charles J. Belotte, 2317 15th St., Troy, N. Y. Fairchild, Ranger 6440C2, Mfd. April 1943.
- NC 46499—Lisle A. Lindsay, Portsmouth, Va. Fairchild, Warner SS165D, Mfd. June 1943.
- NC 46548—H. H. Lancaster, Gainesville, Ga. Fairchild, Ranger 6440C2, Mfd. May 1944.
- NC 46553—Richard I. Tyner, Candler Rd., Gainesville, Ga. Fairchild, Ranger 6440C2, Mfd. July 1941.
- NC 48359—Palo Alto Airport, Inc., P. O. Box 1041, Palo Alto, Calif. Aeronca, Continental A658, Mfd. Nov. 1942.
- NC 48655—William D. Orcutt, 569 Brooks Ave., San Jose, Calif. Aeronca, Continental A658, Mfd. 1943.
- NC 48659—Theodore H. Steen, 128 S. 10th, Apt. 2D, Richmond, Calif. Aeronca, Continental A658, Mfd. Nov. 1942.
- NC 48855—V. L. Chapman, 190 Mountain View, Murray, Utah. Aeronca, Continental A658, Mfd. June 1942.
- NC 49011—Roy Emil Gagel, 909 4th St., Havre, Mont. Aeronca, Continental A658, Mfd. 1943.
- NC 49022—Western Skyways Service, P. O. Box 66, Troutdale, Ore. Aeronca, Continental A658, Mfd. Aug. 1943.
- NC 49145—Henry P. Troh, Route 14, Box 1289, Portland, Ore. Aeronca, Continental A658, Mfd. Dec. 1942.
- NC 49546—Giles Flying Service, Clinton, S. C. Aeronca, Continental A658, Mfd. Jan. 1945.
- NC 50255—Adamson Airways, Perry, Iowa. Aeronca, Continental A658, Mfd. July 1942.
- NC 50439—Norman Clothier, Florence, Kans. Aeronca, Continental A658, Mfd. Sept. 1943.
- NC 51377—Gordon Lackey, 8500 E. 21st St.,

Briefing For Private Flyers and Non-Scheduled Aviation

Private plane designers may well take a tip from a robust, forty-ish business man we know who wants to fly an airplane in his business and can afford to own one. But—he isn't having any until he finds a plane which a non-athletic, slightly overweight man can enter and leave without undue contortions, and which provides room enough for his comfort. He asserts he has seen no plane in the moderate price class which comes close to the comfort to be obtained in even the lowest-price automobiles. And he thinks designers are missing an opportunity by not meeting the comfort and convenience requirements of the business executive who should be one of the biggest buyer groups for personal-type planes in the early post-war period.

FAIRCHILD PROTOTYPE—A "grapevine" report from Hagerstown, Md., says that the low-wing Fairchild four-place personal plane prototype should be ready to fly within the next two months. How soon Fairchild will put this plane into quantity production is still undetermined. Chances are that the first Fairchild plane on the post-war market in the private plane class will be a slightly revised version of the old dependable F-24 high-wing plane. And it may not be built at Hagerstown, because of commitments there on the huge C-82 flying boxcar cargo plane.

SKYLARK PLANS—A stepped-up production schedule on two new prototypes of the Skycraft personal plane, is expected to enable both planes to make their first test flights by mid-fall. Meanwhile the Skylark Manufacturing Company, Venice, Calif., will continue production of steel tube structures for aircraft, airline ground equipment such as passenger ramps and cargo loading equipment and related products.

NEW YORK AIRMARKING—More than 900 New York communities have been asked by the state bureau of aviation to participate in a state-wide volunteer airmarking campaign. Questionnaires have been sent out to the communities which, when filled out and returned to the bureau, will bring detailed instructions as to how to proceed. The markers called for by the state comply with recommendations of CAA's marking specialist, Blanche Noyes, to include the community's name, its latitude and longitude a north meridian and an arrow showing direction and distance to the nearest airport. Yellow letters on a black background are recommended, with letters of size to make them legible with good visibility from 3,000-ft. altitude. Large flat roof tops in the center of communities or near main highways or railroads are preferred sites for the markers.

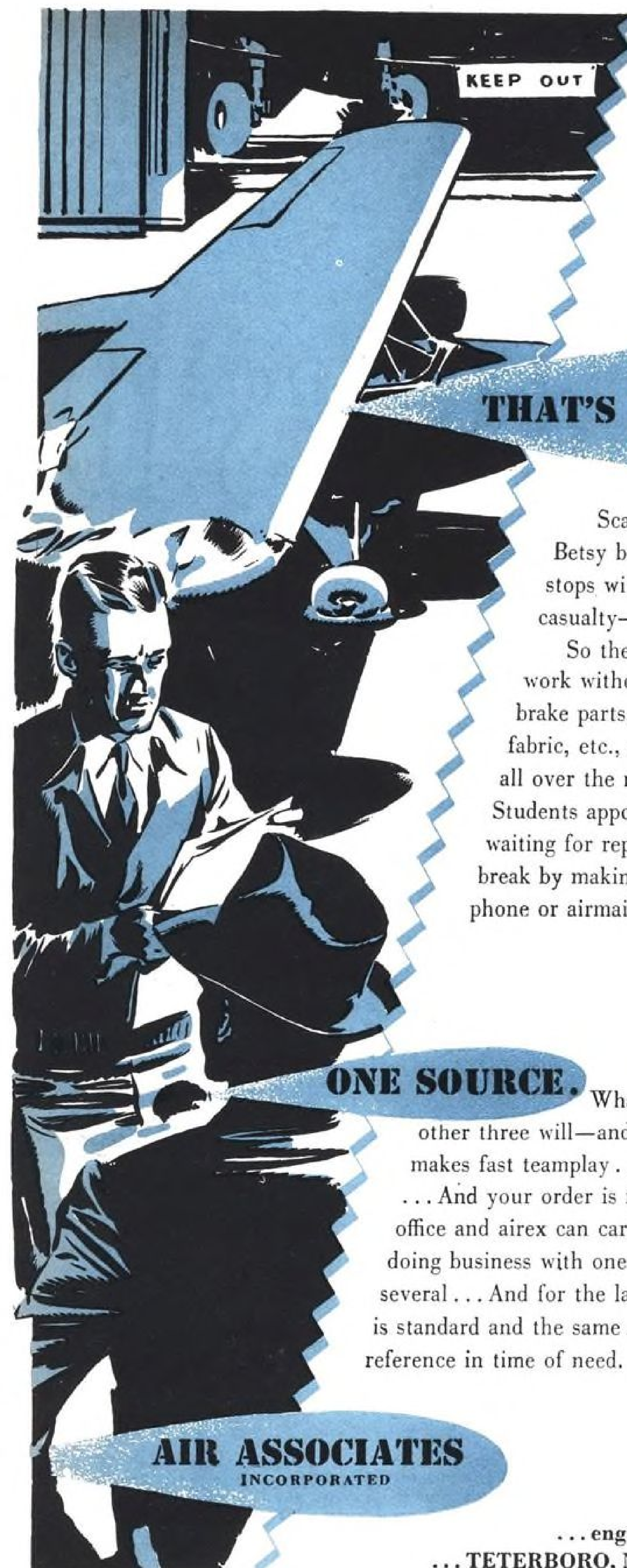
BRITISH ORDERS—Orders have already been received for more than 1,000 Auster lightplanes, by Taylorcraft, Ltd., in England, which has just been granted official authorization to begin civil plane production. First models of the Auster, powered by a 150-hp. engine, with a 100-mph. cruising speed, are expected to be delivered within a month. Price of \$3,300 has been set for the plane, which eventually will be produced in three- and four-place models as well as the standard two-place version.

FIRST AERONCA—First post-war production Aeronca, the tandem "Champion," was scheduled to be completed last week at the Middletown, Ohio, Aeronca plant. The company has previously "hand-built" several "Champions" which have been circulating among dealers and distributors for demonstrations. The "Chief," a side-by-side, two-place with more deluxe equipment, and the "Chum," two-place spinproof plane built under Engineering & Research Corp.'s Weick patents will follow. Prototype of the spinproof plane may be flying within the next few weeks.

—Alexander McSurely

- Indianapolis, Ind. Aeronca, Continental A658, Mfd. Sept. 1943.
- NC 52318—Alva Polk, Bowling Green, Ky. Aeronca, Continental A658, Mfd. Mar. 1942.
- NC 52448—Guy M. Miller, Allegheny County Airport, Pittsburgh, Penna. Aeronca, Continental A658, Mfd. Aug. 1942.
- NC 44590—Glenn H. McCarthy, 15th Floor,

- Sterling Bldg., Houston, Tex. Beechcraft, Pratt & Whitney Wasp, Jr. T1B3, Mfd. Apr. 1945.
- NC 48177—Harry A. Langley, P. O. Box 513, West Plains, Mo. Boeing, Continental W6706N, Mfd. Jan. 1941.
- NC 46026—Harold H. Harwich, 27 Lanark Rd., Brighton, Mass. Aeronca, Continental A658, Mfd. Jan. 1944.



THAT'S WHAT THE MAN SAID!

Scared stude sits down... too, too sudden! Little Betsy bounces like a B-24, goes into a ground loop, stops with a starboard list and a slight leer. Net casualty—one lunch...

So the CAA man looks her over, washes out Betsy for work without a few replacements... right tire, wheel, brake parts, wingtip light, exhaust pipe, intake screens, fabric, etc., etc., eleven etceteras in all. Said etceteras made all over the map from L. A. Cal. to Springfield, Mass.! Students appointments schedule shot! Revenue hours lost waiting for replacement parts!... Make the best of a bad break by making a full list of replacements; and wire, phone or airmail your wants to Air Associates!



ONE SOURCE.

What one AA warehouse may not have, one of the other three will—and teletype transmission between four AA sites makes fast teamplay... What we haven't got, we know where to get... And your order is filled and on the way to you as fast as man, post office and airex can carry it... Save time, grief and paperwork by doing business with one supply source for everything—instead of several... And for the largest airlines or lone owner, AA service is standard and the same... List the addresses below for ready reference in time of need.

AIR ASSOCIATES
INCORPORATED

...suppliers to the industry since 1927

...engineers and manufacturers of aircraft specialties

... TETERBORO, N. J. ... Branches—Chicago, Dallas, Los Angeles

Pace Setters for the World!

TWA
THE TRANSCONTINENTAL
AIRLINE

UNITED AIR LINES

A-A
AIRLINES

EASTERN
AIRLINES

AE AMERICAN EXPORT
AIRLINES

Colonial
AIRLINES

AAA
AIRLINES

CONTINENTAL
AIRLINES

PCA
AIRLINES

Braniff
AIRLINES

PAA
AIRLINES

C & S
AIRLINES

NORTHEAST
AIRLINES

MID CONTINENT
AIRLINES

ALASKA STAR
AIRLINES

NORTHWEST
AIRLINES

Delta
AIRLINES

National
AIRLINES

INLAND
Airlines

WESTERN
AIRLINES

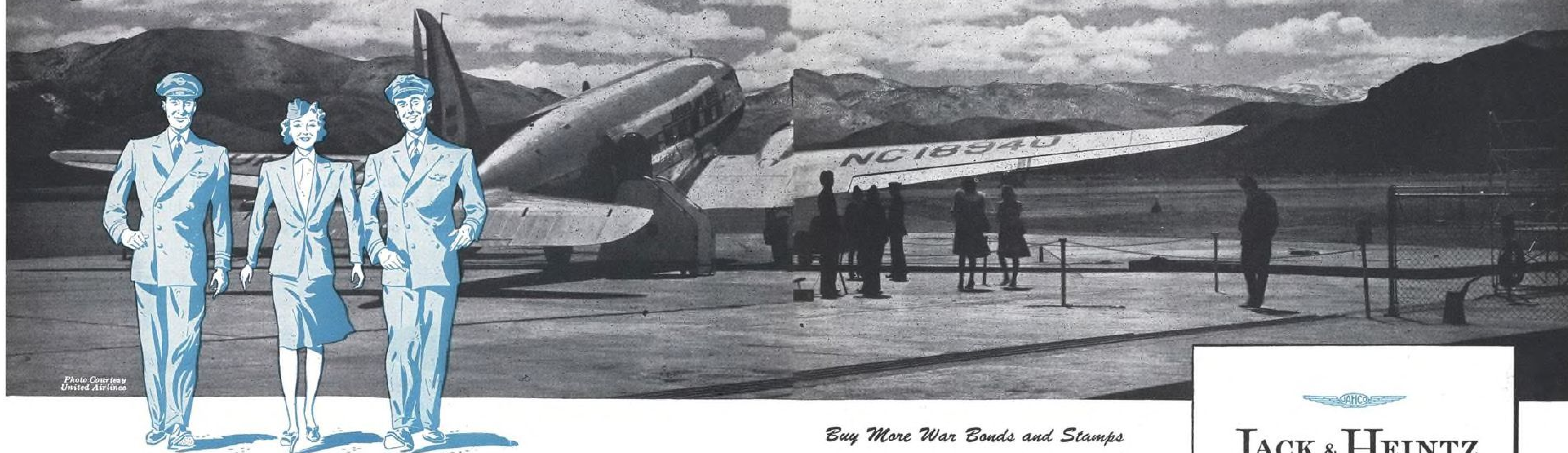


Photo Courtesy
United Airlines

IMMEDIATELY after Pearl Harbor, the airlines gave up half their planes to a hard-pressed Uncle Sam. Then, as the tempo of war picked up and the nation demanded speed and more speed, the men and women who fly our sky routes turned in one of the greatest jobs in transportation history.

Working against terrific handicaps in shortage of equipment, the airlines carried more and more and more. Passengers and freight increased. The load ratio went from 59% in 1941 to an "impossible" 90% in 1944. Planes put in more and more hours per day . . . until many were flying eighteen out of twenty-four, and only perpetual overhaul kept them going.

Through three long, tough years, maintenance crews fought the battle of the monkey wrench to keep America's precious, time-saving handful of commercial ships in the air and on schedule. Month in and month out pilots flew them sweet and careful . . . nursed them for speed . . . hung up new safety records . . . delivered vital goods and people to keep the war effort running at an ever faster pace.

Today, with relief in sight, the airlines are pointing the way for postwar America and the world. Against high wartime operating costs, they recently announced rate cuts. Airline route mileage in U. S. is at an all-time high of 62,937 miles. Freight carried is nearly four times

Buy More War Bonds and Stamps

the prewar load. Total passenger miles last year were nearly a billion higher.

If air transport can do such a tremendous job in the face of warborn shortages of personnel and equipment, what will it do in peace! With a great body of schooled pilots and mechanics to draw upon and available equipment of a quality, carrying capacity and operating efficiency that were scarcely dreamed of in the prewar days, the sky's literally the limit!

It will be a privilege for us to join forces with this industry in building the coming Age of the Air!

Look to Jack & Heintz for better things for flying!

AVIATION NEWS • September 10, 1945


JACK & HEINTZ
Incorporated



Jack and Heintz Inc., Cleveland, Ohio, manufacturers of aircraft engine starters, generators, gyro pilots, gyro flight instruments, magnetos motors.

PERSONNEL

Cregier Heads Sales For Commonwealth Inc.

John E. Cregier, Jr., formerly of Consolidated Vultee Aircraft Corp., San Diego division, has been appointed sales-service manager for Commonwealth Aircraft, Inc., New York and Kansas City, Kan. He will supervise all sales promotion on the company's new *Trimmer* amphibian which is slated for production within the next 90 days. Cregier has been associated with the aircraft industry and with airlines for more than 15 years.



Richard W. Baker (photo) has been appointed district traffic manager of American Airlines, Inc., in Philadelphia. Baker's appointment fills a position which was left vacant for the 18-month period that commercial service was suspended to Philadelphia.



He has been with American since 1937 and has been reservations manager at La Guardia Field and also in Washington. Before going to Philadelphia, he was assistant manager of reservations and ticket offices for the entire system.

Leslie B. Osborne (photo), former lieutenant colonel in AAF intelligence, has been named eastern divisional traffic manager for PCA. His headquarters will be New York. Prior to being called to duty in 1941, Osborne had been associated for ten years with Pan American Airways and later with Vega Aircraft, a subsidiary of Lockheed. With Pan Am he served in Central and South America and in Miami.



Cameron T. Robertson has returned to American Export Airlines as flight captain, following a military leave during which he served as

supervisor of flight operations for the Air Transport Command at Presque Isle, Me. He has been a pilot for Canadian Colonial Airlines and for United Air Lines. In 1943, Robertson was loaned to the Glenn L. Martin Co., to help in the test flying of the original *Mars*.

John A. Smith Joins Contract Cargo Group

John A. Smith, formerly regional cargo traffic manager for American Airlines in Los Angeles, has been appointed western traffic manager of the National Skyway Freight Corp. Smith has been affiliated with the air transportation industry since 1938, and is a director of both the Los Angeles Transportation Club and the Foreign Trade Association and a member of the World Trade Committee of the Los Angeles Chamber of Commerce. National Skyway Freight Corp. is the West Coast's newest contract non-scheduled air freight service.

Former Army Air Forces' **Capt. Donald H. Snell** (photo), fighter pilot, has been appointed traffic representative in the air mail and air cargo department of Braniff Airways, Inc. Prior to his Army career Snell was assistant manager of a trucking firm. He holds the Distinguished Flying Cross and other AAF decorations received during his more than 300 hours of combat flying.



Lee H. Hill, vice-president in charge of industrial relations at Allis-Chalmers Manufacturing Co. since 1941, has resigned to accept a post with McGraw-Hill Publishing Co. in New York. Hill formerly was assistant manager of the electrical department and holds approximately 40 patents on electrical machinery. He has been active on the War Labor Board and was President Truman's first appointee as a full industry member of the Board.

Director of the Bureau of Aviation of the New York State Commerce Department, succeeding **Leslie A. Bryan**, is **William E. Cullinan, Jr.**, who formerly assisted Bryan as airport engineer. Bryan is returning to the faculty of Syracuse University, from which he took a leave of absence in May to become director of

the newly-created Bureau of Aviation. From November 1943, until joining the Commerce Department, Cullinan held the position of district airport engineer of the Civil Aeronautics Administration in charge of airport activities in New York and New Jersey.

Preston Mabry Appointed Republic Lightplane Aide

Preston H. Mabry, well known in aviation circles, has been appointed assistant sales manager of the Personal Plane Division of Republic Aviation Corp. A commercial pilot since 1930, with about 3,000 hours of flight time to his credit, Mabry was with the Civil Aeronautics administration until he joined Republic in 1943. Prior to his present appointment he was assistant director of market research, service supervisor, and sales representative of the Personal Plane Division.

Stuart A. Cameron has been named manager of the News Bureau of American Airlines, Inc. Cameron joins the airline after a long career in the newspaper, wire service and public relations field, having served with the National Association of Manufacturers and later with the Fred Eldean Organization, which directs public relations for the Airlines Committee for United States Air Policy. He will make his headquarters in American's executive offices in New York City.

Ivan Bullo has been named tour promotion manager for Pan American World Airways. His activities will be of a fact gathering nature to assist travel agents, as the airline does not intend to operate tours. Bullo is a veteran in the travel field, having been with Exprinter, world-wide tour operators, prior to joining Pan American.

Robert M. Evans, formerly associated with the Kaiser Industries on the Pacific Coast, has been appointed district traffic manager of Braniff Airways, Inc. at Denver. He has assumed the position left vacant by the promotion of **J. K. Weckbaugh** to Western division manager. Evans was employed by the Dupont Co. for a while in connection with the development of the atomic bomb.

Obituary

Alfred Frank, 74, founder of National Park Airways, which later became a part of Western Air Lines, died August 1, in Cincinnati, Ohio. Frank, a mining engineer, founded the airline in 1928 and in recent years served as a director of Western Air Lines. He secured the first license from the Post Office Department to operate air service between Salt Lake City, Utah, and Butte and Great Falls, Mont.



ELECTRIFYING the Road to Tokyo

Curtiss Electric Propellers now add to the demonstrated effectiveness of the Boeing B-29 Superfortress:

Greater striking force—made possible by propeller weight reduction.

Shortened landing runs—through aerodynamic braking.

Automatically synchronized propeller speeds.

The unmatched durability of hollow steel blades.

The additional safety of electrical propeller control, unaffected by temperature and altitude and with minimum vulnerability to combat damage.

These new advantages for the Superfortresses on the road to Tokyo mean new destruction for the enemy and increased security for B-29 crews.

CURTISS

Electric Propellers

DIVISION OF CURTISS  WRIGHT FIRST IN FLIGHT



Making a 40-ton shock "DISAPPEAR"!

When a Skymaster hits the runway, the tremendous landing energy of this huge plane quickly "disappears". It's not an act of magic, but the shock-absorbing ability of Aerol landing gear that does the trick! . . . The remarkable stamina and efficiency of Aerols, which protect plane, crew, and cargo from landing shock, account for their universal acceptance for major types of aircraft. ♦ ♦ Our products, serving many industrial fields, are mentioned below. Whatever your needs, Cleveland Pneumatic engineers offer you the benefit of over 50 years manufacturing experience.

THE CLEVELAND PNEUMATIC TOOL CO., Cleveland 5, Ohio

CLEVELAND ROCK DRILLS



CLE-AIR SHOCK ABSORBERS



AEROL RETRACTABLE LANDING GEAR



CLECO AIR TOOLS



CLEVELAND PNEUMATIC

The ATOM NEW SOURCE OF ENERGY

A Tide in the Affairs of Men

On August 6, 1945, an atomic bomb exploded over the Japanese city, Hiroshima.

Its concussion blasted the city, vaporized the fibre of Japan's will to resist, and flashed across the world a light of such glaring intensity that even blind eyes could glimpse the forked road that is presented to humanity's choice and destiny.

It has been a scant fifty years since Pierre and Marie Curie embarked upon their research with the avowed intent of discovering "how the atoms of the universe are put together". Their work contributed radium to the knowledge and use of mankind, but it marked only a way station upon the awesome quest which they announced and which thousands of scientists have since pursued.

Under the compelling stimulus of war, the first major application of the release of atomic force has been in an instrument that raises by an unimaginable dimension our ability to dole out death. We can be devoutly grateful that the scientific leadership of the Allies, and particularly the industrial strength of the United States, brought to us, rather than to our enemies, priority in the development of this dread weapon. But even in its present infant phase, it is clear that ownership of the principle of the atomic bomb carries a trusteeship of terrifying gravity.

We hold in trust a power that is capable of unraveling the very fabric of our civilization.

Equally, it may be susceptible of development as a mighty force for human welfare. But we have proved the destructive use, while the constructive applications are still in the realm of speculation.

Clearly the trust is of a magnitude that transcends national jurisdiction. No walls have ever been built high enough to fence in the spread of scientific knowledge, and even if we were resolved to forego the harnessing of atomic power for peace, it is hopeless to think that its application for war can be held for long as the monopoly of one, or a small group of nations.

At one giant stride our scientific and technological development has so far outdistanced our social engineering, that we have no choice but to turn our full powers of creative imagination to control the forces we have unleashed and to bend them to man's use rather than to his destruction.

Since control is not possible without understanding, I have asked several of my editorial colleagues in the McGraw-Hill organization to present on the pages which follow a non-technical but authoritative account of the known facts and implications of atomic power.

James H. McGraw, Jr.

President, McGraw-Hill Publishing Co., Inc.

HOW ATOM SPLITTING RELEASES ENERGY

Five years ago the world learned that the atom of Uranium 235 had been split, releasing energy at the rate of about 11,400,000 kilowatt-hours per pound. The whole amount tested was less than the head of a pin, but there was no escaping the possibility that heaters, engines, turbines, jets and explosives could be powered by atomic energy. Then began the race to win the war with atoms.

With what help England could give, America outran the best atom-splitting team Germany could muster. It was all done in silence. From the summer of 1940 until the atomic bomb blasted Hiroshima, black secrecy blanketed history's most amazing scientific and industrial accomplishment.

Coldly scientific in form, the War Department's "Smyth Report," released August 12, 1945, traces

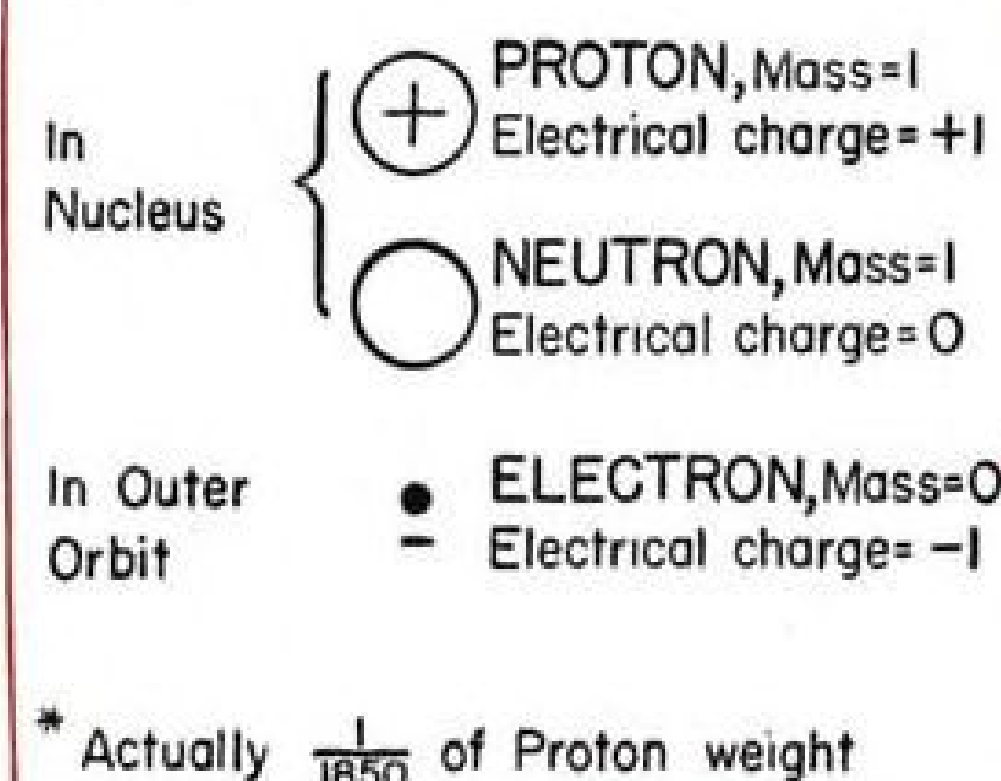
the fantastic course of atomic engineering through the five years of news blackout. It leaves no doubt that only a complete mobilization of America's technical resources could have won this victory in time.

Other writers in other places will unfold the epic story. This presentation leaves no space to reflect the glory of the accomplishment or even to record its history. The aim is more immediately practical

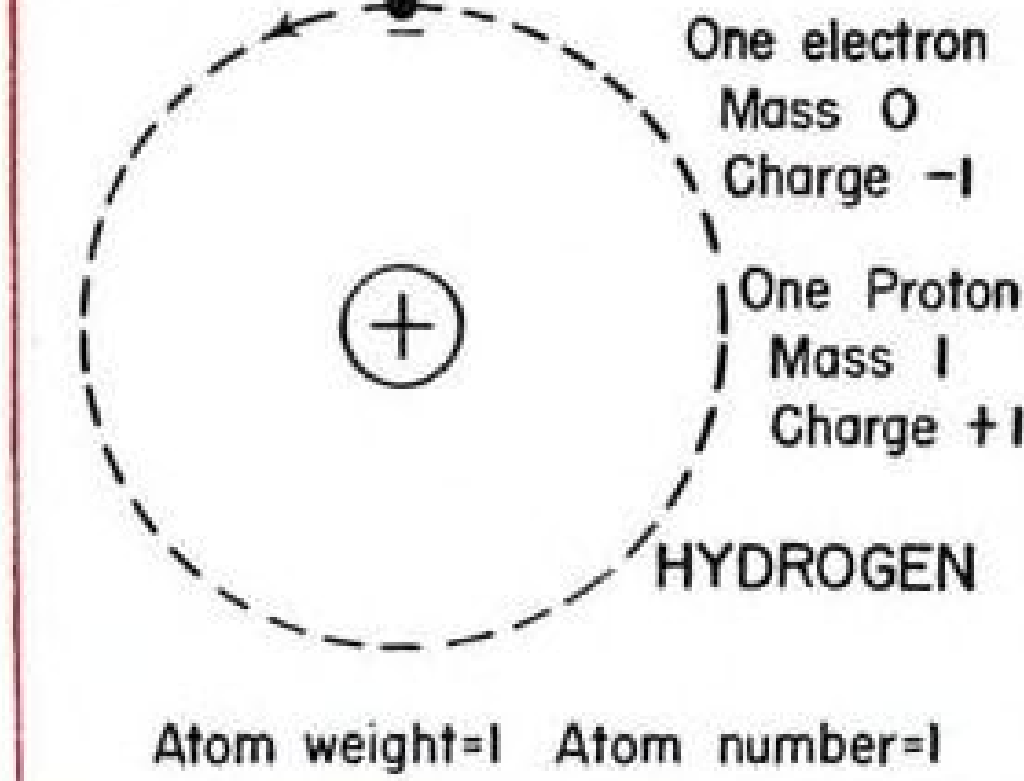
— to give the professional and business readers of the McGraw-Hill publications a sound and honest, though non-technical, understanding of this atom-smashing business, so that they will know better what to do about it in their personal and business lives.

Now for step one: learning the shape of atoms and how atom splitting releases energy.

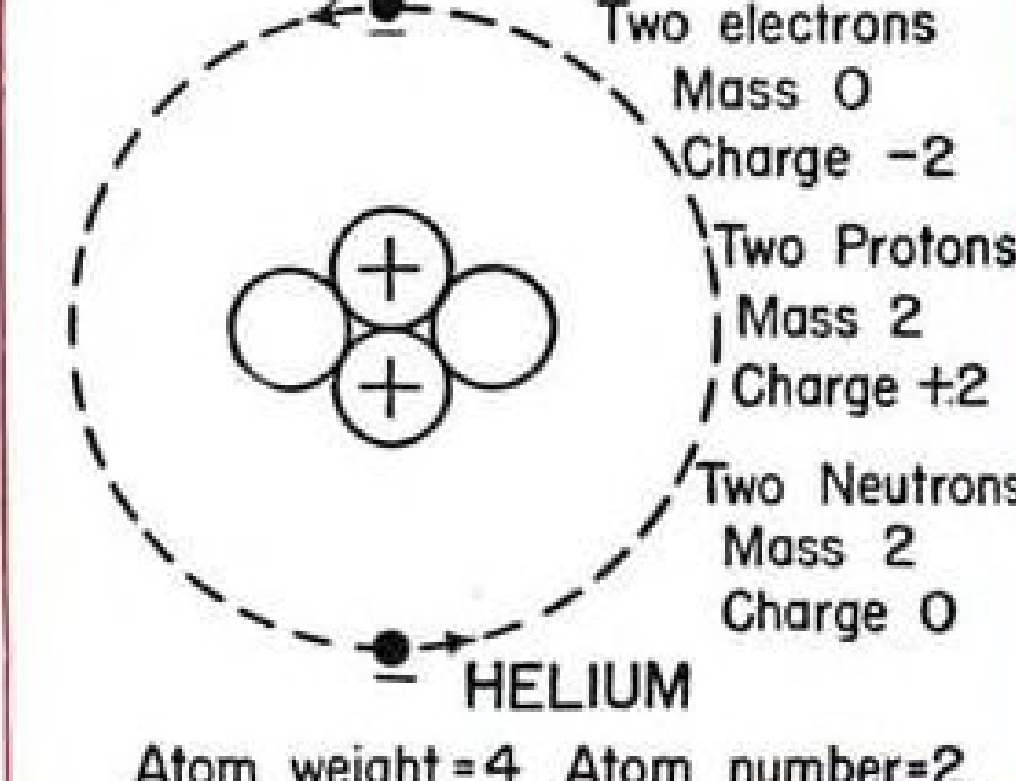
1 ATOM PARTS



2 SIMPLEST ATOM



3 TYPICAL ATOM

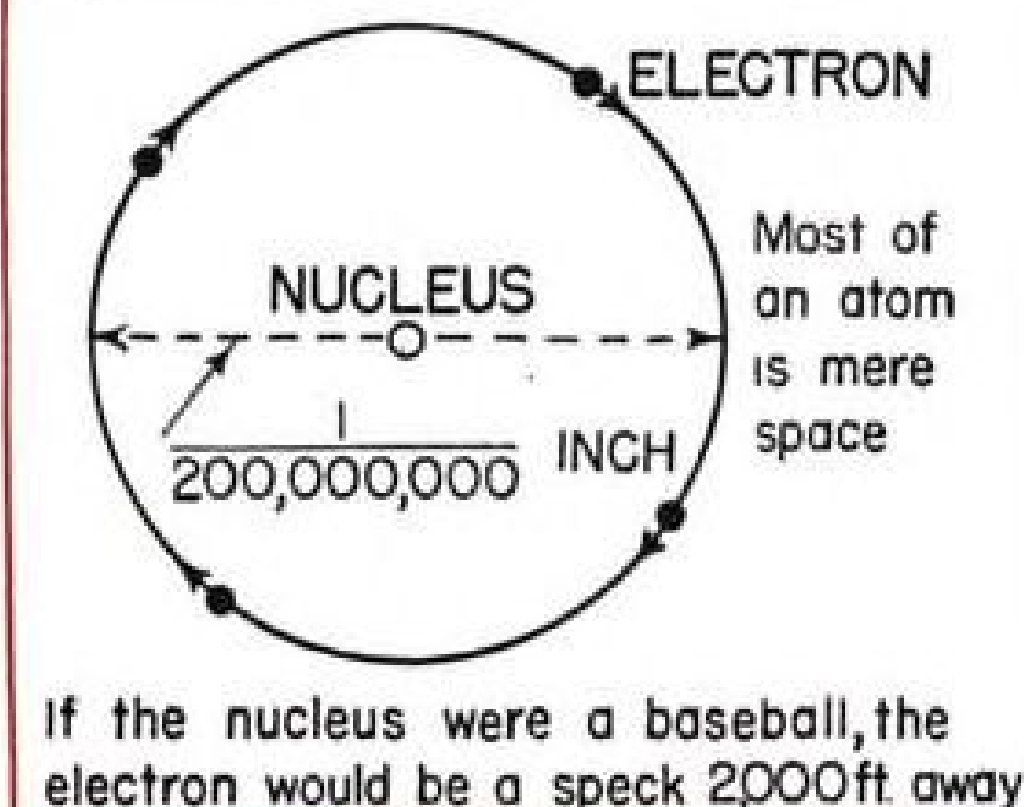


Each of the 92 elements has its own *atom*, yet all atoms are made from the same three pieces, Fig. 1: *proton* (weight 1, electric charge +1), *neutron* (weight 1, charge 0), *electron* (weight 0, charge -1).

Every atom is a tiny "solar system." Its central "sun" has one or more protons, generally neutrons too. The revolving "planets" are electrons, one for each proton in nucleus, because plus and minus must balance in the atom.

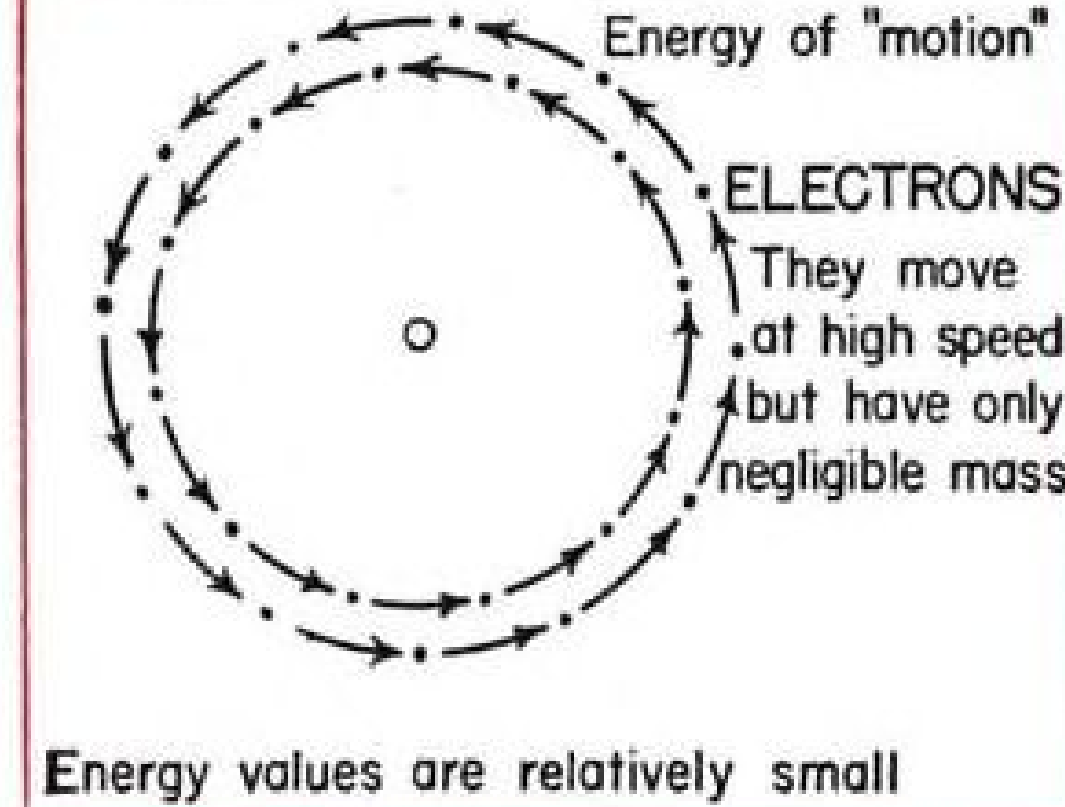
The opposite charges attract, but high speed keeps the electrons out in their circular orbits, just as the centrifugal tendency of the revolving earth defies the sun's gravitational pull. All the weight of an atom is in the nucleus, so add the number of protons and neutrons to get the atom's weight. The *atomic number* is equal to the number of protons. The elements are known by their atomic numbers. Thus uranium (92 protons) is element 92.

4 ATOM SIZE



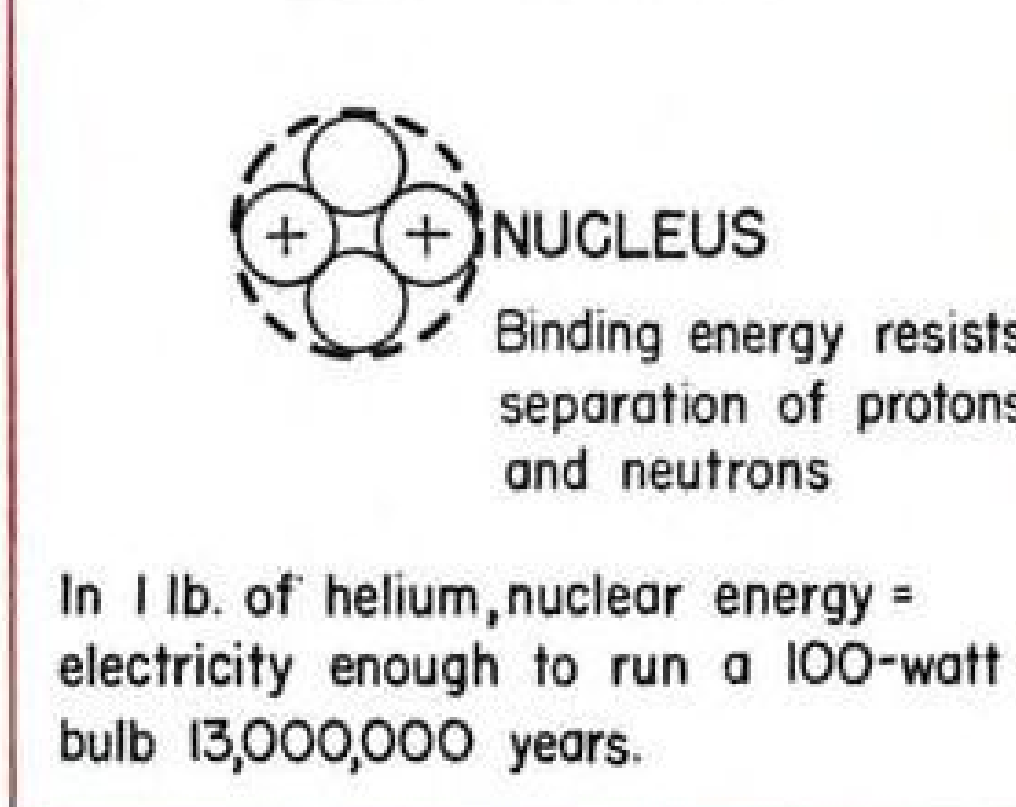
With only their outermost orbits touching, it would take half a million atoms to span the thickness of a human hair. Yet if one could expand an atom until its outer orbits encircled 100 acres, the nucleus would be no bigger than a baseball. The atom is mostly empty space, Fig. 4, and nuclei are difficult targets; so much so that a neutron bullet fired at a mass of atoms may pass right through without a hit.

5 ELECTRON ENERGY

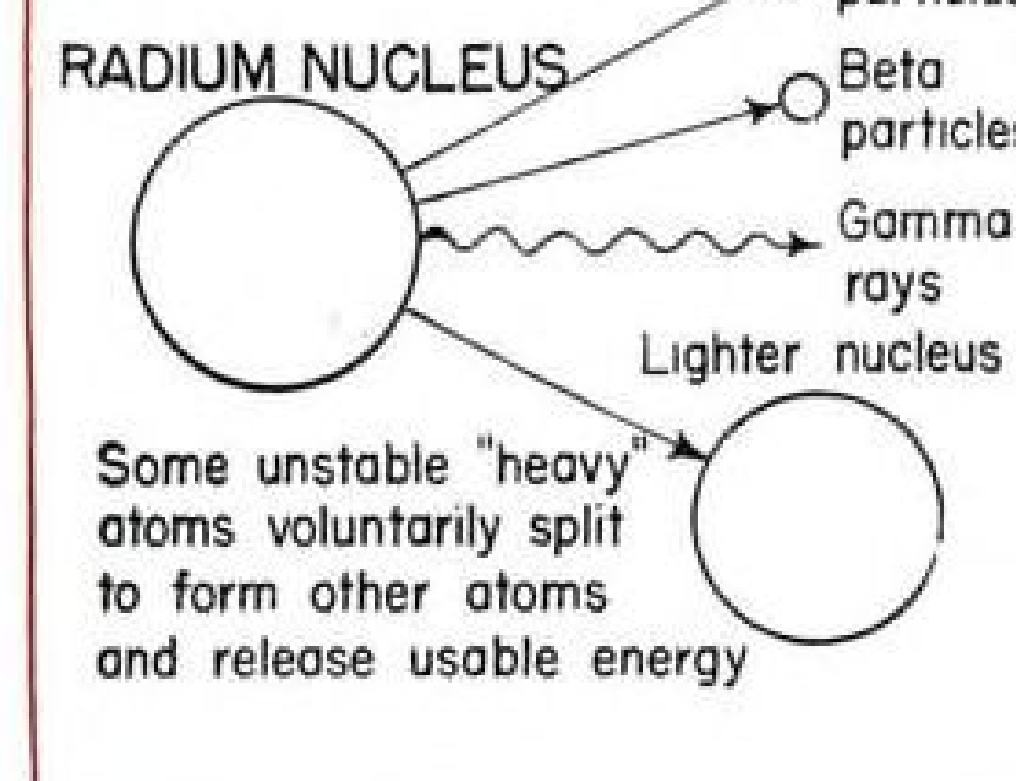


The almost weightless speeding electrons, Fig. 5, supply all the energy of chemical reactions (as when coal burns or TNT explodes). Evading all ordinary chemical action, the immensely greater energy bound up in the nucleus, Fig. 6, can be released only by direct hits on the nucleus to break the bonds that hold the protons and neutrons in a tight bundle.

6 NUCLEAR ENERGY



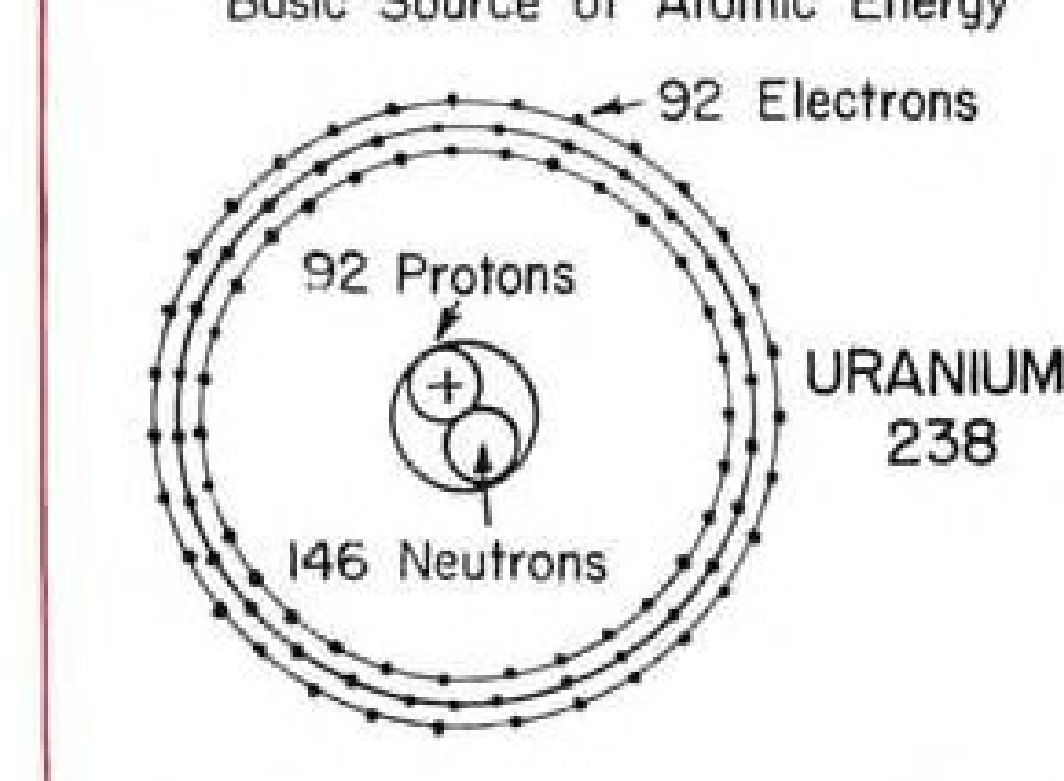
7 RADIOACTIVITY



Radium nucleus, Fig. 7, automatically emits particles and energy as it decays to form nuclei of a lighter atom. Most common form of uranium, nature's heaviest atom, is Uranium 238, Fig. 8. This form is not directly useful for energy release, but is important as the raw material for a new synthetic power atom, *plutonium*.

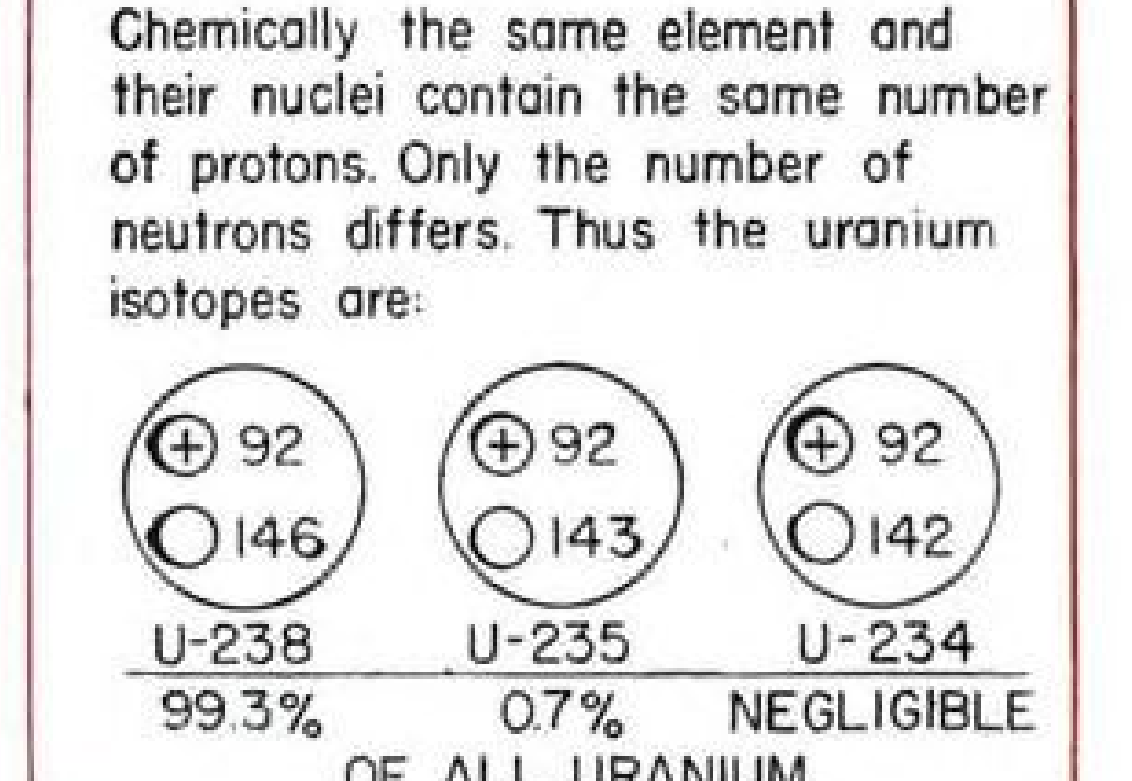
An element may have several *isotopes* — alternate forms with the same number of protons but slightly different

8 NATURE'S HEAVIEST ATOM

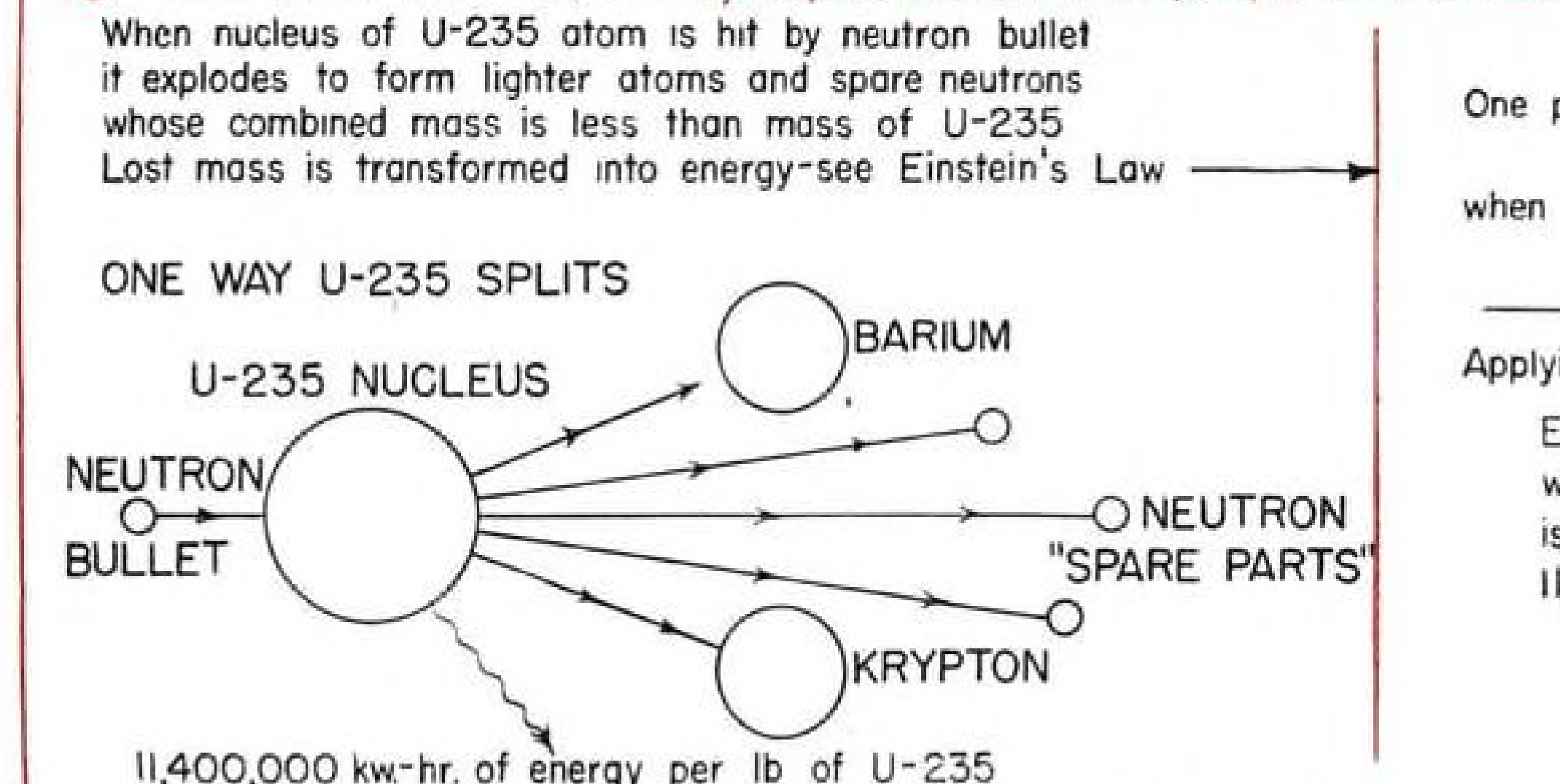


numbers of neutrons. Uranium 238 is the isotope in which protons and neutrons total 238 (so atom weight is 238). It is 99.3% of the total weight of pure, natural uranium. The stuff needed for direct atomic-energy release is Uranium 235, only 0.7% of the total weight and very difficult to separate from 238. To put it another way, every pound of energy-giving U-235 comes mixed with a dead load of 140 pounds of relatively inert U-238.

9 ISOTOPES



10 ENERGY RELEASED



Slow neutron bullet splits Uranium 235 nuclear target, generating two lighter atoms (Fig. 10 shows one possibility) and several free neutrons ready to split other U-235 atoms. The following pages show how the original neutron may be

produced and directed and how a chain of self-propagating atomic explosions may sweep through a block of U-235 like a forest fire to release heat energy equivalent to 11,400,000 kilowatt-hours per pound. CONTINUED ON NEXT PAGE

EINSTEIN'S LAW:

One pound of anything = 11,400,000,000 kw.-hr.

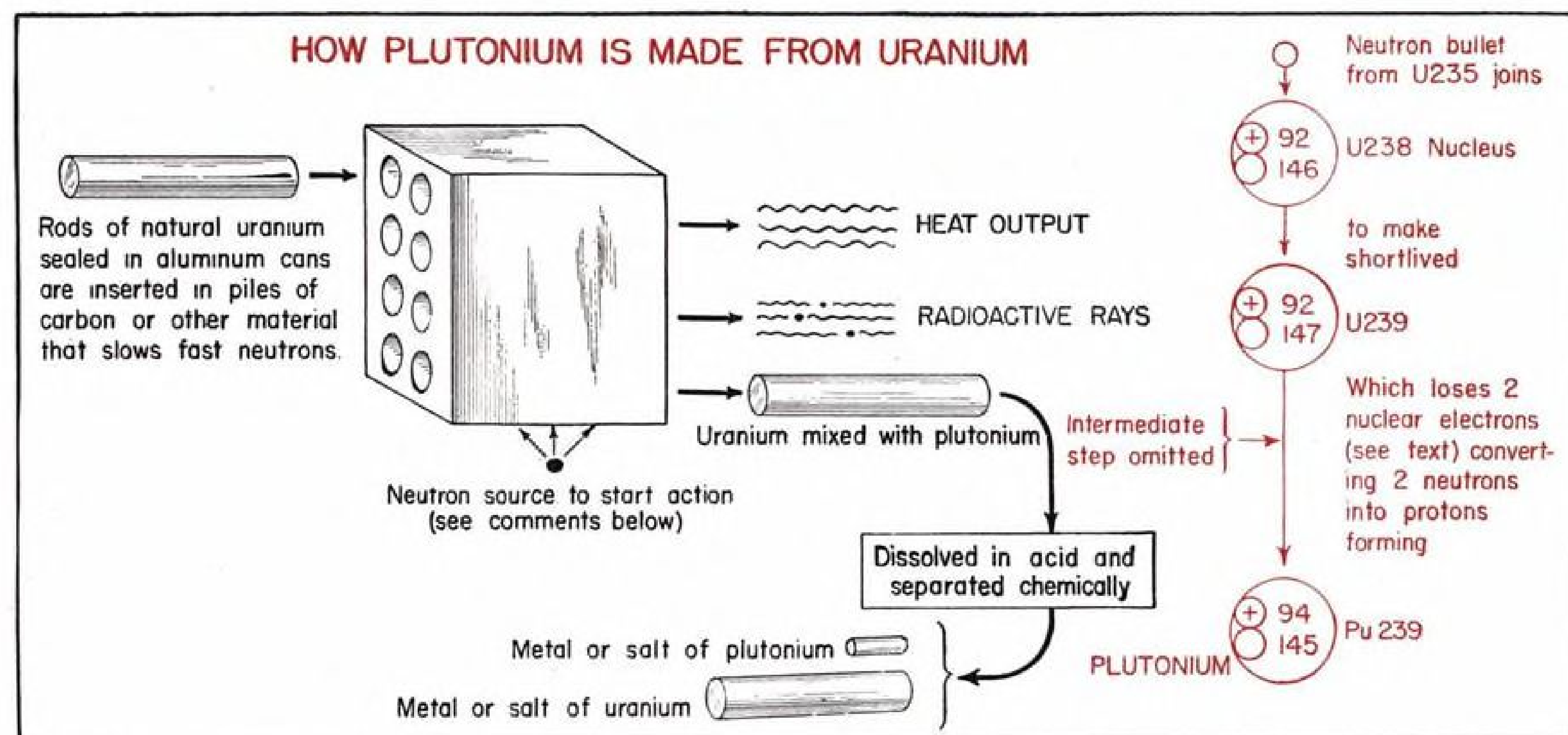
when mass or energy converts to energy or mass

Applying this law to U-235 split:

Explosion products of one pound of U-235 weigh 0.9990 lb., so 0.001 lb. of the mass is converted into $0.001 \times 11,400,000,000 = 11,400,000$ kilowatt-hours of energy.

CREATING and ISOLATING

Man-Made Plutonium—U-235 Substitute



We now have two kinds of atoms suitable for energy supply, Uranium 235 and the new man-made element No. 94, plutonium. Uranium, No. 92, has the heaviest atom of any natural element.

The Manhattan Project's plant, on the Columbia River at Hanford, Washington, is the world's greatest atom-making factory. Devoted entirely to the mass production of plutonium atoms, it uses U-238 as the raw material and U-235 as the energy source, intimately mixed in the same proportions as in natural uranium metal.

The production units at Hanford are several huge uranium "piles." Each is a very large block of graphite with holes in which are placed uranium-metal cylinders, sealed in aluminum cans to protect the uranium from corrosion by the cooling water constantly pumped through the pile.

Each pile runs itself, so to speak. Not even the conventionally pictured bits of radium, beryllium and paraffin are needed as a "pilot light" to start operation. There are always enough stray neutrons, or even cosmic rays, to start a chain reaction.

But once started, the design, size and control of the unit must be such that the chain reaction will continue at an even rate—neither die down nor overshoot into an explosion.

To see this picture in atomic terms, consider the fraction of a second in which one million U-235 nuclei are split, producing two million lighter atoms (say, one million of barium and one million of krypton) and between one and three million fast-moving neutron projectiles.

Some of these escape in free flight right through the relatively vast atomic "open spaces." Some are "captured" by the many U-238 nuclei, and others are captured by the impurities. But, on the average, of the one to three million, just one million neutrons must succeed in smashing another million U-235 atoms in the next fraction of a second. Thus, with reproduction rate exactly maintained, life goes on in the atomic-energy pile.

The carbon, one of several possible "moderators," serves to slow down the neutrons without capturing many. The chance of a fast, straight-moving neutron hitting a tiny nucleus is very small, whereas the "slow ball" neutron is likely to be sucked in by the nuclear attraction if it would otherwise be a near miss.

From the practical angle, maintaining a chain reaction requires careful design and good controls. The pile must be slightly larger than actually necessary for a chain reaction (that

means scores of tons of material). Controls must be sensitive and dependable. They slow the pile down to the balancing point by sliding in retarders, such as strips of cadmium.

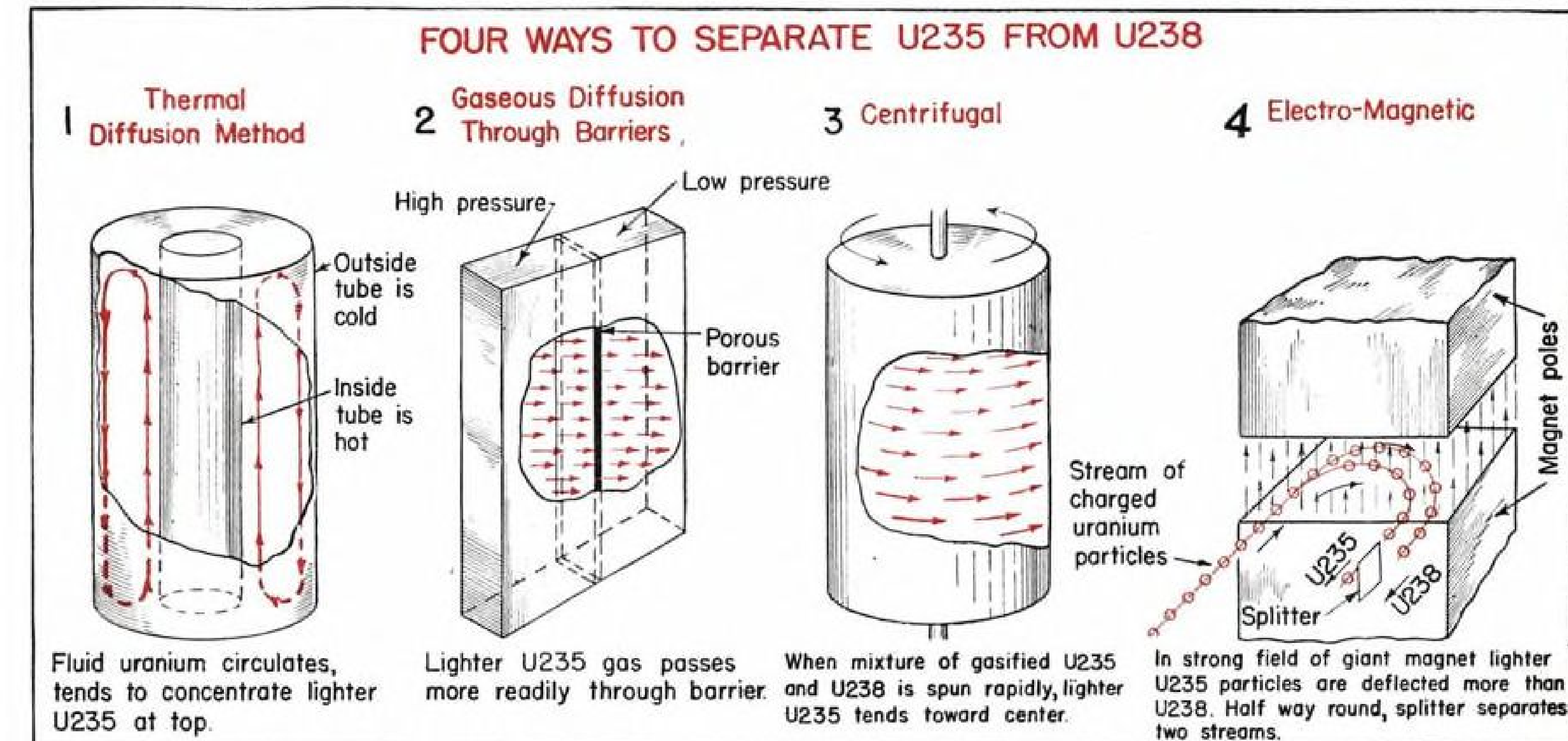
As already noted elsewhere, the energy released is about 11,400,000 kilowatt-hours for each pound of U-235 split. This energy appears first in the high speed of the pieces thrown off by the atomic split, then is converted to sensible heat as collisions slow down these projectiles. The energy is finally removed from the pile in the form of hot air, steam, hot water or other heated fluid in commercial quantity and thermal condition.

Such piles, operated with normal uranium, or with uranium enriched in U-235, would seem to be the primary means by which atomic energy will serve (if ever) as a commercial source of heat and power. Plutonium would be a byproduct, but might under certain conditions add to the energy yield of the pile without the need to separate it from the uranium.

The use of normal uranium in the Hanford pile sounds extremely attractive as a heat source, but has certain economic disabilities. Only a small part of the U-235 is used up before the pile must be shut down to remove the plutonium.

THE HIGH-POWER ATOMS

Isolating U-235—a Gigantic Task



Many of the uranium ores, including most samples of pitchblende and carnotite, will yield from 1 to 15% metallic uranium. Chemical separation of the metallic "natural" uranium is simple. Whatever the source, natural uranium contains the three isotopes in the constant proportions of 99.3% U-238 and 0.7% U-235, with traces of U-234.

Separating the U-235 from U-238, an operation essential for explosive uses of U-235, and probably important for future commercial controlled-chain piles, has been most difficult. Chemical separation was impossible because U-235 and U-238 are chemically the same.

The only possibility was a separation

by physical differences, primarily a one percent difference in weight. The porous barrier and centrifugal methods pictured above required vaporizing a salt of uranium. All the methods shown have been used or tried on the Manhattan Project. All require many stages to achieve a substantial concentration of Uranium 235.

Dollarwise Thoughts on Atomic Energy

Costs mean little in war, but peacetime uses of U-235 and plutonium must pass the dollar test in competition with coal, fuel oil, natural gas, gasoline and electricity.

On the basis of energy costs only, "all other things being equal," the table on the last page of this section shows at what price per pound U-235 would give the same energy cost as conventional energy sources selling at the indicated prices. For such comparisons it is convenient to remember that one pound of U-235 is equal (energy-wise) to about 11,400,000 kilowatt-hours, also to 1500 tons of coal, or 200,000 gallons of gasoline.

Fuel engineers understand the limitations of such oversimplified comparisons. Others should be warned that "all other things" are never equal.

With this thought in mind, reconsider the uranium piles operated at Hanford to produce plutonium. These use U-235 in the cheapest form, say about \$1400 per lb., assuming purified normal uranium at \$10 per lb. (140 lb. of uranium contains one pound of U-235.)

If this were the whole story, coal would have to sell for a dollar a ton to break even with U-235 as a water heater. However, the pile using normal uranium must be immense to hold its own in a chain reaction. More important, the accumulating fission products "poison" the reaction after only a small part of the U-235 has been used up. Then the uranium cylinders must be removed for plutonium recovery. Finally, it has not yet been found possible to operate the normal-uranium

piles at high enough temperatures for practical power production.

If we go to the other extreme and build a small pile, using concentrated U-235, we shall run into excessive material costs, perhaps several times the \$52,000 per lb. set down in the table as the equivalent of 20-cent gasoline.

Something between the two extremes is likely to prove the most economical—perhaps a pile operating on a U-235 concentration between 1 and 10%.

The engineer of the "atomic-power age" must know the price of Uranium 235 in various concentrations and the characteristics of piles suited to them. No such information is yet available. He must also watch the danger from radio-activity; the requirements for radiation shields; explosion hazards, etc.

CONTINUED ON NEXT PAGE

WHAT TO EXPECT

Before discussion of possible and probable future applications of atomic energy to the arts of peace, the atomic bombs should have consideration. We may assume that these bombs contained from two to 200 lb. of either U-235 or plutonium, or both. No more precise information is available.

Details of the bomb design have been completely suppressed, but the following basic considerations are stated or implied in the Smyth Report:

The explosive in a bomb must be highly concentrated U-235 or plutonium. Since slow neutrons could not produce a satisfactory explosion, the neutron retarder or *moderator*, is minimized. This, in turn, requires a U-235 mass so large that the escape of neutrons without hitting nuclei will not be excessive. For every 1000 atoms hit, the neutrons produced must split more than 1000 new atoms, so that the reaction will proceed rapidly in an expanding chain, as sketched below.

There can be little leeway in the size of the explosive charge. For a given shape there is a certain "critical" weight of material. If this is exceeded the bomb explodes instantly. If the weight of charge is less than the critical, it cannot be made to explode. Therefore, the critical mass must be created at the moment of explosion.

The Smyth Report suggests that this can be accomplished by breaking down the charge into two or more well-separated parts, each having less than the

CLAIMS LIKE THESE ARE NOT JUSTIFIED

1. Pretty soon no more coal will be mined except as a raw material for chemical manufacture.
2. In a few years a tiny bit of uranium, built in at the factory, will drive your car for life through an engine no bigger than your fist.
3. All the big central stations will soon be running on atomic power.
4. Cheap atomic energy will enormously reduce the price of power.

critical mass. At the appointed moment these could be brought together within the bomb to create a supercritical mass, which would then explode automatically.

Peacetime Applications

Except possibly for superblasting operations, uncontrolled explosive reactions cannot be permitted in the peacetime use of atomic energy. This means that the quantity of U-235 assembled in any one spot must always be kept well below the critical weight to avoid spontaneous explosion.

Depending on the particular application, the most desirable concentration of U-235 may range anywhere from the 0.7% in normal uranium up to 100%, with the probability that

many industrial applications will find the greatest economy in concentrations between 1% and 15%.

This matter of the degree of concentration of U-235 has received little public attention, yet nothing could be of greater practical importance. To make this point clear, consider the two extremes, 0.7% of U-235 and 100% of U-235, respectively.

The Hanford pile, using normal uranium (0.7% U-235) with carbon moderator, must be very large to work at all. It is inefficient in the sense that it must be shut down after a small part of the U-235 has been consumed. It cannot operate at high temperatures.

Its great advantage as a heat producer is the fact that its U-235 is bought at the lowest possible price. If

FROM ATOMIC ENERGY

...BUT REMEMBER THESE FACTS

1. The large-scale, controlled release of heat energy from U-235 has been fully demonstrated.
2. Beyond question, this energy could be applied directly for heating water and air, and making steam.
3. Such heat, in turn, could be applied directly, or converted into mechanical power or electricity by conventional steam turbines and gas turbines.
4. If and when U-235 in concentrations up to 10% costs less than \$25,000 per lb., it may find applications, but will compete, at first, with premium fuels rather than coal.

shown for the gas turbine would, of course, have to operate at temperatures up to 1200 F. There seems to be no basic reason why the pile itself could not be built inside the compressed-air receiver, discharging its heat directly to the compressed air.

With rather high concentration of U-235, this arrangement might be suitable for large airplane drive if excessive weight of radiation shields could be avoided.

Also, presumably, rockets and planes of the "buzzbomb" type could be powered by atomic heat delivered to the air of the jet steadily, not in puffs.

The sketches stress direct applica-

purified normal uranium sells for, say, \$10.00 per lb., the price of 140 lb. (containing one lb. of U-235) will be only \$1400. This would be a very favorable price if the pile could operate efficiently with the 0.7% U-235.

Concentrating the U-235 to 100% would permit a much more compact and convenient pile — perhaps little more than small pieces of U-235, encased in aluminum to ward off corrosion, and immersed in a tank of water; this should convert the water into steam at a regulated rate.

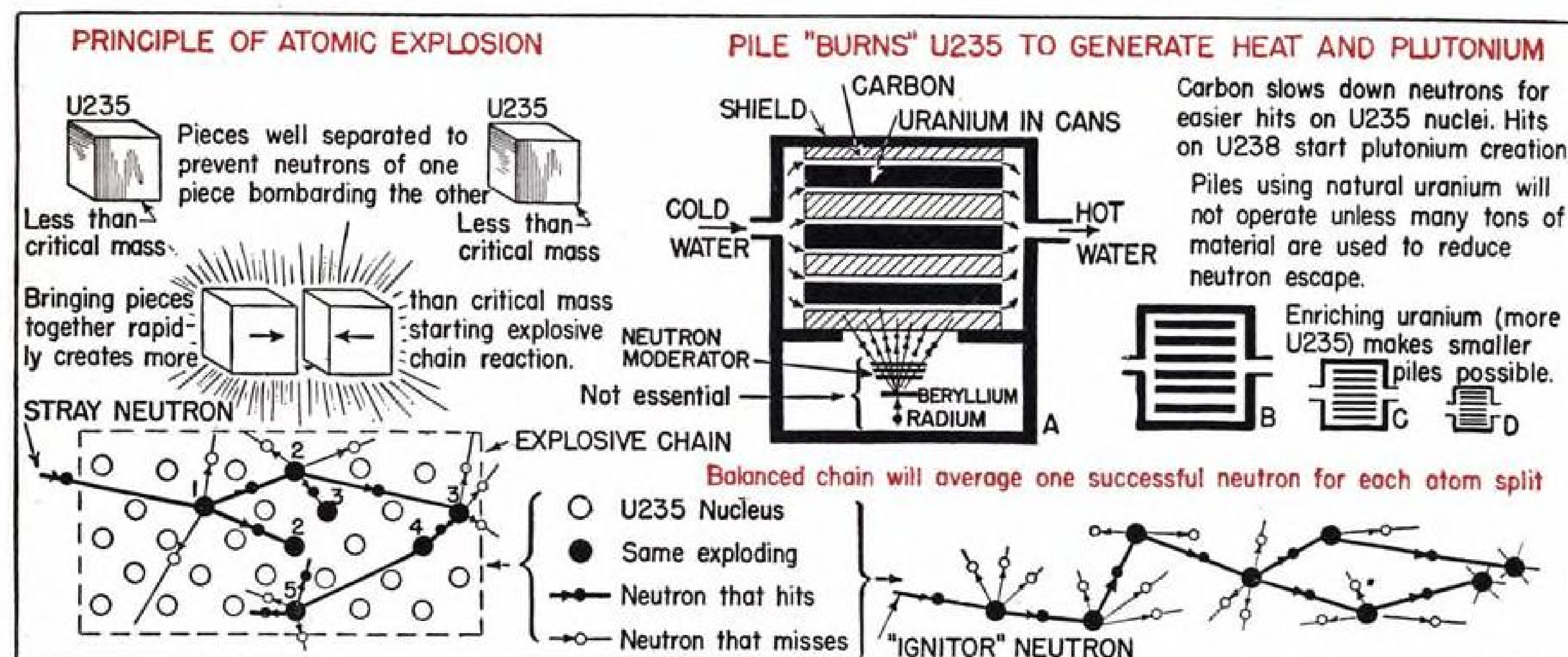
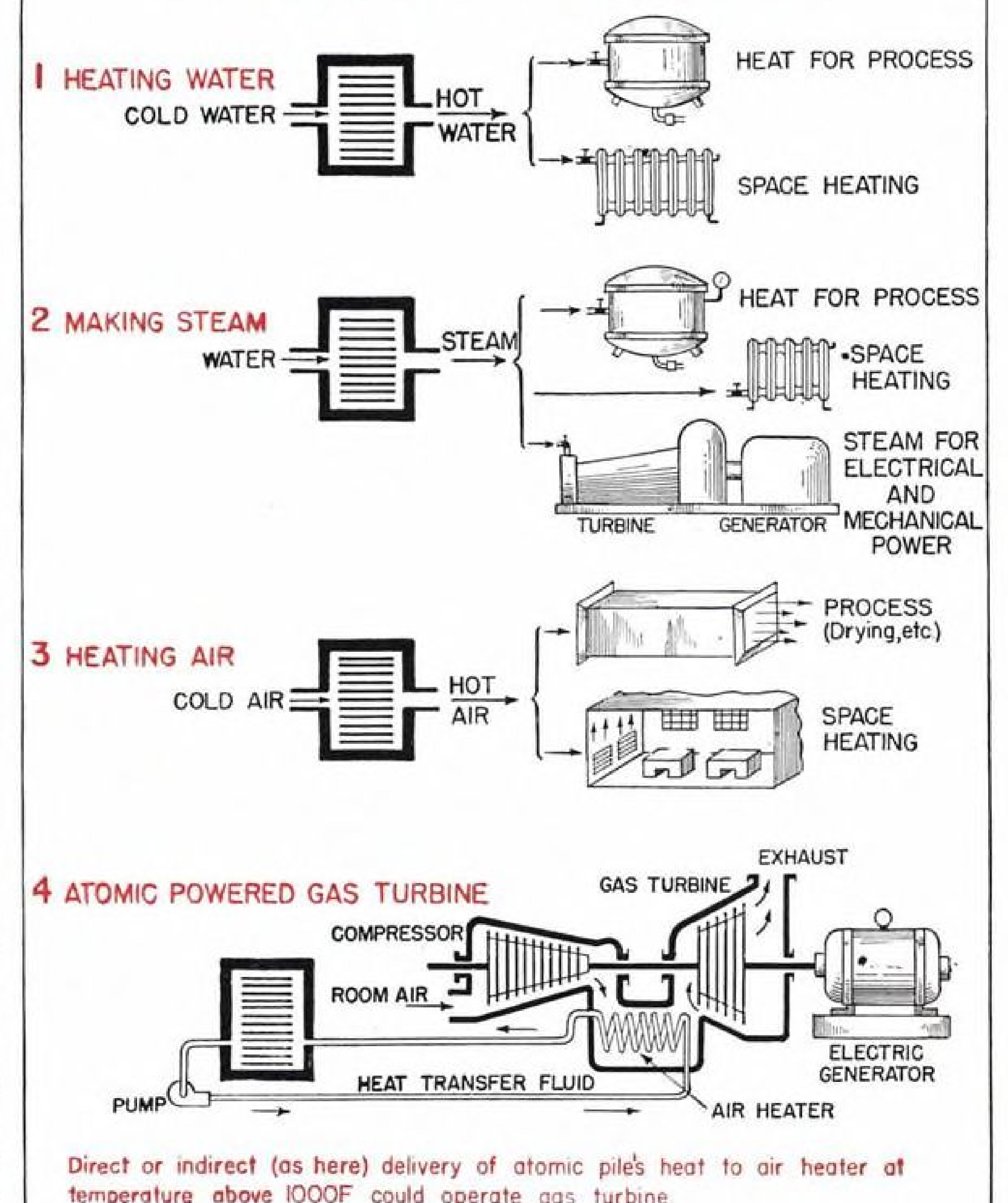
In large part, the control would be inherent. The water as a moderator would keep the chain going, but if the reaction got too violent, the resulting higher superheating of the steam would decrease the moderator effect and thereby hold the reaction in check. Yet even if all this comes true the cost of concentrated U-235 in the near future will be many times \$10,000 per lb.

Running up the concentration only a few percent above that in normal uranium may prove to be the way to get reasonable pile size and good efficiency without incurring exorbitant concentration costs.

When atomic energy is applied, the starting point is heat, picked up by water, air or a special heat-transfer fluid. Intermediate heat transfer fluids may be essential in certain applications (space heating and service water, for example) where people must be protected from injury by radioactivity.

The intermediate heat-transfer fluid

HOW ATOMIC ENERGY COULD BE APPLIED



THESE THINGS MIGHT RESTRICT USE OF ATOMIC ENERGY

1. Ineffectiveness of large piles using normal U-235 concentration
2. High cost of concentrated U-235 for smaller, more effective piles
3. Danger from radioactivity
4. Weight and cost of shielding against radiation
5. Explosion hazard
6. Possible short supply of uranium
7. Governmental restrictions on atomic-energy materials

tions of hot air, steam and hot water to process and space heating. This emphasis is justified by the often overlooked fact that such applications of heat have many times the total energy value of all the electricity generated in the United States for all purposes.

There has been much popular speculation regarding the type of engines required for atomic-power generation. The answer is simple. Present engines, steam turbines and gas turbines can be used with little or no change. This, of course, does not rule out the possible discovery of specialized engines for atomic power, or even direct production of electricity from atomic energy.

In the long run the implications of atomic power are staggering for both war and peace. However, popular writers on the subject have undoubtedly created unreasonable hopes in the minds of readers—for example, the expectation that in two or three years the Detroit builders will market cars with built-in "lifetime" slugs of U-235 and "fist-sized" engines.

Yet it seems fairly safe to predict that atomic energy will find some commercial applications within the next five or ten years, first, probably, as a premium fuel like aviation gasoline, worth a fancy price for specialized applications where low weight or some other characteristic is important.

As the cost of concentrating U-235 is reduced and application efficiencies improved, atomic energy may compete with cheaper fuels, perhaps ultimately with coal.

Important non-power applications of atomic energy may well include the ultra-high-temperature processing and fabricating of materials—also, modern "alchemy": building and rebuilding atoms to create new elements and to produce old elements at lower costs.

Radioactivity obtained directly or indirectly from artificial atom-splitting should find many important medical and industrial applications.

Turning back to ordinary power applications, we must avoid the temptation to overstress the economic importance of lower-cost power fuel. Fuel cost is only about 17% of the gross receipts of the electric utilities. Here's another way to put it: If, after allowing for transmission losses, one kilowatt-hour delivered to the consumer from modern plants represents a coal consumption of 1.5 lb., and if the coal costs \$5.00 per ton cancellation of the coal bill could not save more than 3/8 of a cent per kilowatt-hour. And

atomic fuel will certainly not be free.

Performance of the atomic bomb is a monument to the scientists who unlocked the secrets of the atom and suggested the basic technique of making plutonium and concentrating U-235.

From there on, the job was at least 50% engineering. The various big plants of the Manhattan Project are vast assemblages of pipes, tanks, boilers, valves, instruments and controls, installed and operated by engineers, largely designed by engineers. From now on, the speed with which atomic power becomes practical will depend on the effectiveness of the engineer-scientist team.

It is possible, of course, that national controls may completely upset the entire technical and economic pattern of this discussion. For reasons of national security the government may decide to control or restrict atomic-power materials, plants and operations in ways not yet determined.

U-235 COULD COMPETE AT THESE PRICES

other things being equal

Common fuel	Assumed prices	Comparable prices for Uranium 235, dollars per pound (nearest thousand)
COAL (13,000 B.t.u.)	\$6 per ton	\$9,000
	\$12 per ton	\$18,000
	\$15 per ton	\$23,000
FUEL OIL (150,000 B.t.u. gal.)	2¢ per gal.	\$5,000
	4¢ per gal.	\$10,000
	8¢ per gal.	\$20,000
CITY GAS (500 B.t.u.)	50¢ per 1000 cu. ft.	\$39,000
	\$1 per 1000 cu. ft.	\$78,000
NATURAL GAS (1000 B.t.u.)	25¢ per 1000 cu. ft.	\$10,000
	50¢ per 1000 cu. ft.	\$20,000
	\$1 per 1000 cu. ft.	\$40,000
GASOLINE (150,000 B.t.u. gal.)	10¢ per gal.	\$26,000
	20¢ per gal.	\$52,000
	30¢ per gal.	\$78,000

BUT

Note that "other things" are never equal. U-235 in normal uranium form is by far the cheapest, but involves use of excessively large and inefficient "piles." The unit cost of the U-235 in enriched mixtures increases with the degree of enrichment. Over-all cost comparisons can be made only for a specified concentration of U-235 and for apparatus suitable for that particular concentration. Possible explosion danger and need to protect personnel against radiation are other important considerations.

PRODUCTION

Reversible Thrust Propellers Gain Commercial Consideration

Airline engineers, on basis of favorable military experiences, begin study of aerodynamic braking for peacetime carriers; C-W prop division announces first production installation of new unit on four-engine plane.

By BLAINE STUBBLEFIELD

As a result of recent favorable military experience with reversible thrust propellers, some airline engineers are considering the desirability of aerodynamic braking for commercial airplanes.

Curtiss-Wright Propeller Division has announced the first production installation of combined multi-engine synchronization and reverse thrust propellers on the B-32 four-engine Consolidated bomber. The Curtiss synchronizer, actuated by an independent master unit, automatically alters the blade angles, delicately varying propeller loads and keeping them all synchronized in varying flight conditions.

► **Atom Safety**—The company also disclosed that several Boeing B-29 Superfortresses including those that dropped atomic bombs on Japan, were equipped with reversible propellers, providing an extra margin of safety in case of a landing with the bomb still aboard.

Reverse thrust equipment has been supplied by Curtiss-Wright for improved maneuverability of flying boats, in water, since 1939. Application to land planes was brought about by recent marked increases in airplane weight and resulting long landing runs.

In addition to installations on the B-32 and B-29, the SB-19A, Consolidated PB2Y *Coronado*, Martin *Mars*, and the Martin FRM-1 *Mariner* are engineered for aerodynamic braking by reverse thrust. Reversible propellers are in operation experimentally on various other airplanes.

► **Interest Roster**—Although Curtiss-Wright, with its electric propellers, appears to be the only company offering the reverse thrust feature at this time, it is known that other manufacturers, including Hamilton Standard of

United Aircraft, have long studied its practicability.

Unofficial opinion is that hydro-matic pitch control, the principle used by Hamilton Standard, can be extended to include reverse, with changes in the oil transfer rings, and others.

Curtiss-Wright estimates the weight of additional control for reversibility at about one to two percent of each propeller's weight where two engines are concerned. For four propellers to reverse simultaneously, additional weight is about 1.5 to three percent for each propeller's weight.

► **Cost Ratio**—The added weight is entirely in the controls; there is no change in the propeller. Cost of the reverse control is estimated at about one percent of the cost of the entire propeller unit.



B-24 INFLUENCE:

Not until numerous flight tests had been made did Consolidated Vultee Aircraft Corp. and the Army abandon the use on the B-32 bomber design of the twin rudders which had become a trademark of Convair Liberators. Had the war continued the B-32 would have gone into mass production with a massive single rudder and unusually huge dorsal fin and vertical stabilizer.

One series of tests shows that four propellers reversed, with the normal use of brakes, give a landing run of 51 percent to 61 percent of that obtained with brakes alone. Other four-engine tests show a landing run of only 44 percent of that with brakes alone. Reduction of ground run was as much as 80 percent in tests on two-engine medium bombers.

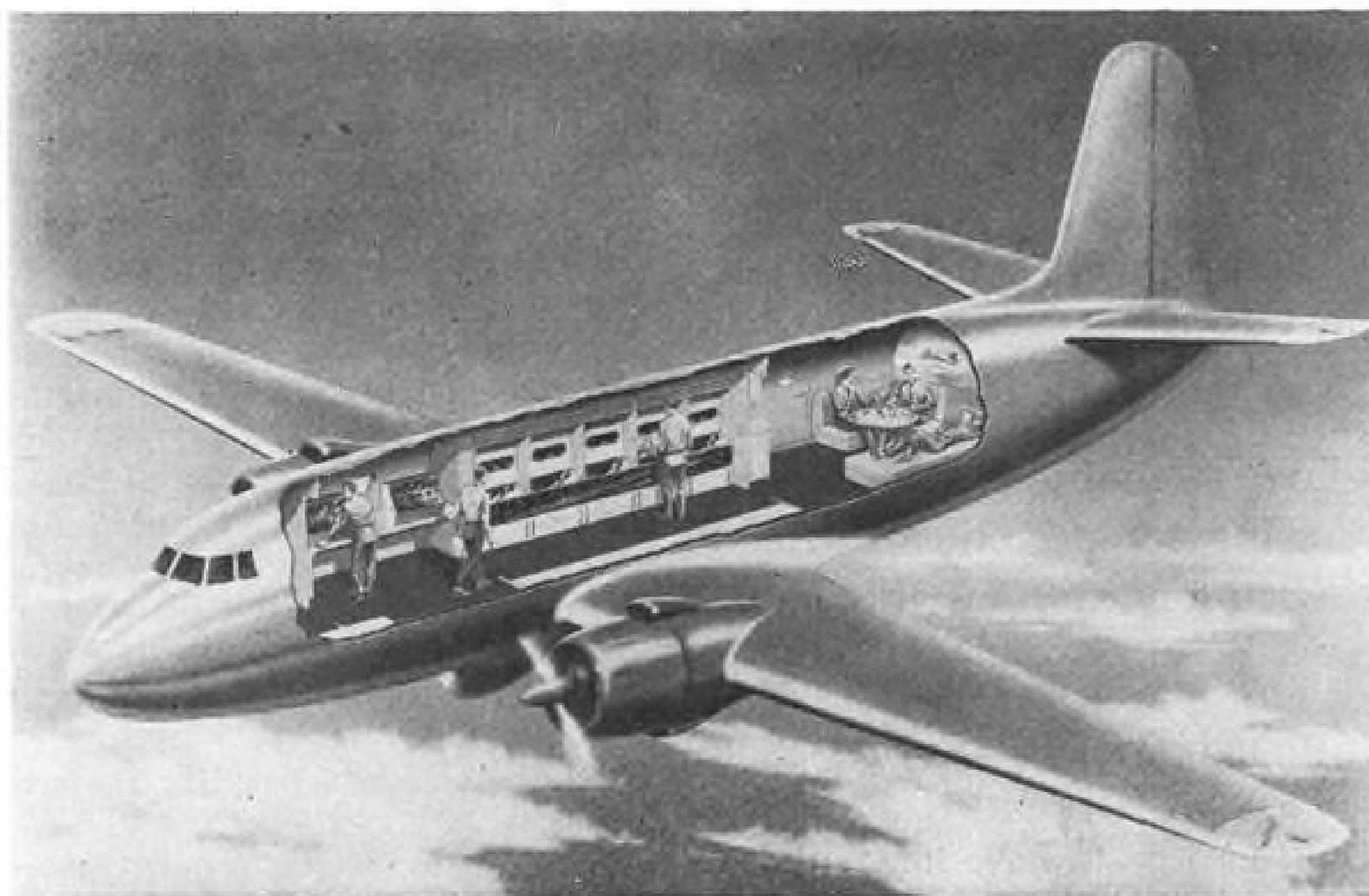
It is estimated that negative thrust will permit the reduction of brake weight by about 50 percent. The brakes on a 100,000-pound airplane, for instance, weigh about 800 pounds, which would be cut to about 400.

Other advantages of reverse thrust:

► It is fully effective regardless of ice, snow or slippery pavements; so far, the cushion effect of its application would seem to be more agreeable to passengers than the effect of braking; absence of propeller slip streams on wings during landing reduces lift and minimizes "floating"; greater deceleration with negative thrust enables the pilot to make his approach at a higher, safer speed.

Operators of lighter-than-air craft like reverse thrust for hovering without turning into the wind.

Engineers said, in reply to inquiry, that they see no reason why reverse pitch cannot be used in connection with gas turbine powerplants. They expressed the opinion that reverse thrust in the case of jet propulsion would present a serious problem. A spokesman for



'STRATOVISION' TRANSMITTER:

Cutaway drawing of the Martin-designed plane envisioned as the key to long-range television relay (AVIATION NEWS, Aug. 13). Under plans formulated by Martin and the Westinghouse Electric Corp., 14 of these aircraft would be used at various locations across the country. Powered by two 1,450-hp. engines, the planes would cruise at about 150-mph. Only indication as to size is statement they would be "almost as large as the B-29, but weighing only one-third as much." Planes would be manned by crew of three and six radio technicians.

one large propeller manufacturer said the reversible feature is definitely desirable for lightplanes, but will not be applied on a large scale until it can be done with little or no increase in weight, cost, and complexity, and with very high reliability.

Ryan Retains Workers Despite Large Cutbacks

Despite a cutback of approximately 45 percent in its Navy orders, Ryan Aeronautical Co. expects to keep employment of production workers at near the wartime level. This is made possible by an extension of the contract delivery time until the latter part of 1947.

Under the original terms, deliveries were to be sharply increased for the balance of this year. Now, production will be pegged at the July rate. Also favoring a high employment level will be the return to the parent plant of assembly work formerly done by subcontractors.

► **Other Workers**—While those two factors will aid direct production workers, Ryan announces that substantial reductions will have to be made in office staff, tooling, production control and other employees not engaged directly in turning out Ryan fighters.

War Modification Plants Terminating

Standby status contemplated for some as AAF, Navy facilities for late design changes finish work.

End of the war is bringing a quick end to AAF and Navy modification centers which were set up to incorporate late design changes, dictated by combat experience in part, and add instruments so that factory production lines would not be slowed.

Work in AAF modification centers was the first to fall off. Terminations are now hitting Navy modification centers with the one at Elizabeth City, N. C., as an example. There has been a complete cancellation of work there, which specialized on PBV and PBJ changes. No decision has been made as to what will be done with the facility. Plans are expected to include a standby status for the plant.

► **Airline Contract**—The contract under which Continental Air Lines for over three years has operated the Continental-Denver modification center for the Air Technical Service Command has ended. Robert F. Six, Continental president, disclosed that the total number of planes modified by the center included work on 2,155 Boeing B-

17's; 25 North American P51 Mustangs, six British heavy bombers and 402 Superfortresses.

At peak employment in February of this year, the center employed about 3,200 workers. The center did nearly 1,500 different kinds of modification ranging from simple wiring changes to major engineering projects.

The big Navy modification center at Litchfield Park, Ariz., operated by Goodyear Aircraft, is scheduled to finish within 60 days. It has been working on PB4Y Convair Privateers. Consolidated Vultee is expected to deliver its last Privateer to Litchfield Park soon after mid-November. Other modification centers are in the process of being closed.

Australia Cuts Aircraft Output

According to John Storey, director of the Beaufort Division of the Australian Department of Aircraft Production, the output of Beaufighters, Mosquitos and Mustangs in that country will be curtailed. It is considered certain that Australia will continue to produce jet-propelled trainers and fighters and giant combined bombers and transports. The production program, as now seen, includes four-engines Lincoln bombers for the air force, and Tudor passenger planes.

The peacetime aircraft industry of Australia will employ about 10,000 workers, a reduction of some 30,000 from the present basis, but no time has been set for the discharge of the surplus workers.

TBY 'Clearance'

Termination of the TBY-2 Seawolf contract at Consolidated Vultee's Allentown, Pa., plant is proceeding, with raw stocks totaling five carloads of material, most of which was aluminum, cleared from storage areas.

Work has started on clearing the maintenance, repair and operating area also. Virtually all possible direct sales of surplus materials to other contractors have been concluded. What materials remain are being reported for disposition on Office of Contract Settlement forms. OCS inventories, when prepared, will cover a wide variety of materials and components, including propellers, engines and turrets.

KOPPERS

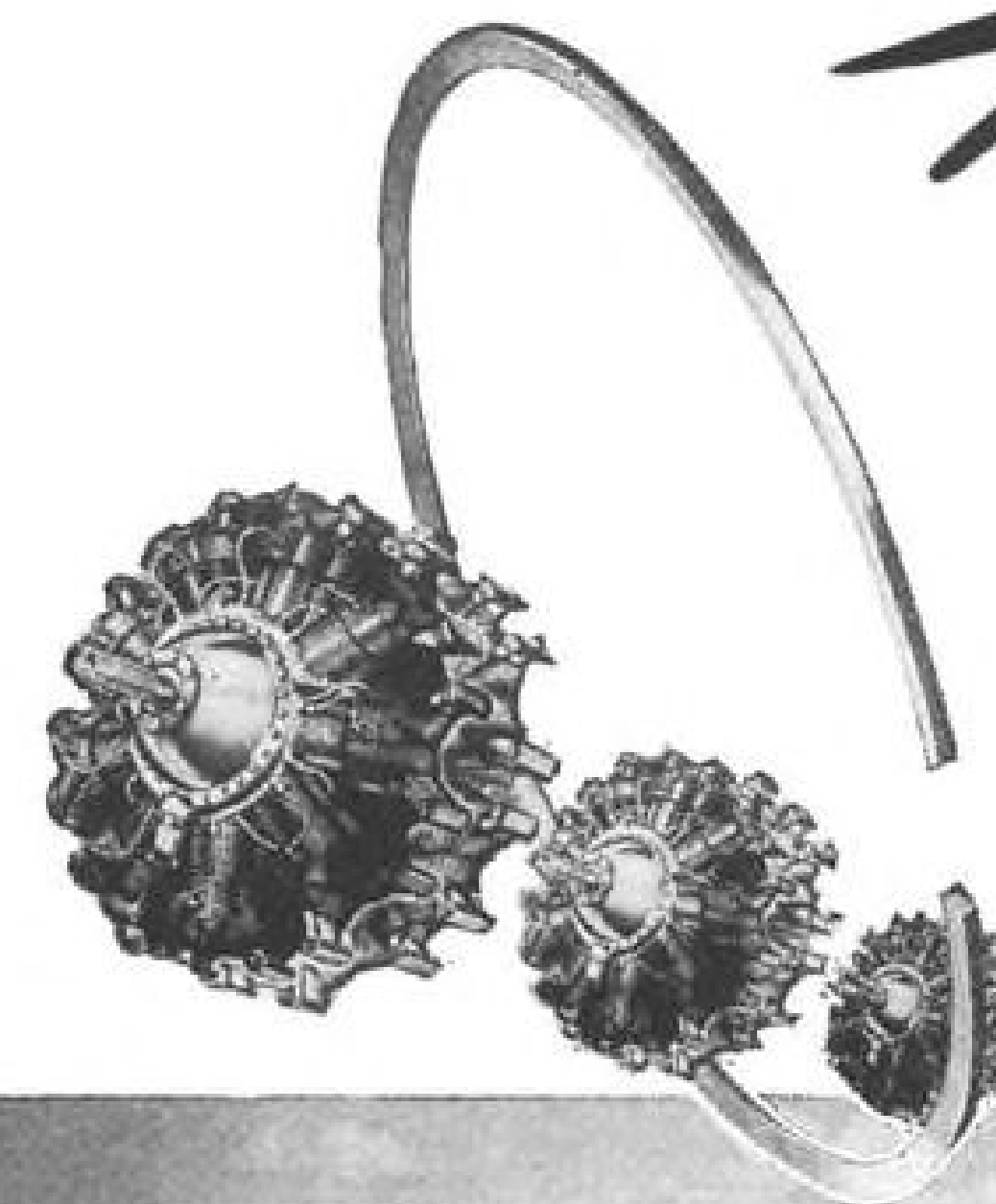
and

Aviation

KOPPERS GIVES RINGS "POROUS" CHROME PLATING

To cut down friction, many piston rings are chrome plated. But most chrome plating gives a dense, solid, impervious surface which leaves no pores to hold the tiny oil reservoirs so necessary to efficient operation. With the patented "PORUS-KROME" process, Koppers gives aviation rings a harder-than-steel chromium plating which still has pores and still can hold oil to keep the cylinder wall lubricated.

*Van der Horst Process



"TARMAC" CHOSEN FOR AIRPORT PAVING

For years, Tarmac has been a familiar friend and stand-by to thousands of highway officials who know it for the skid-resistant, long-wearing, economical highway surfaces it builds. To airport officials, it is proving just as valuable for runways, aprons, flooring, parking areas and approach roads.

AVIATION TIDEWATER STRUCTURES ARE PRESSURE-TREATED

This Pan-American landing dock and many other aviation structures are built with wood pressure-treated to resist decay and the attacks of marine borers and termites. Koppers Wood Preserving Division pressure-treats wood for this and other purposes.



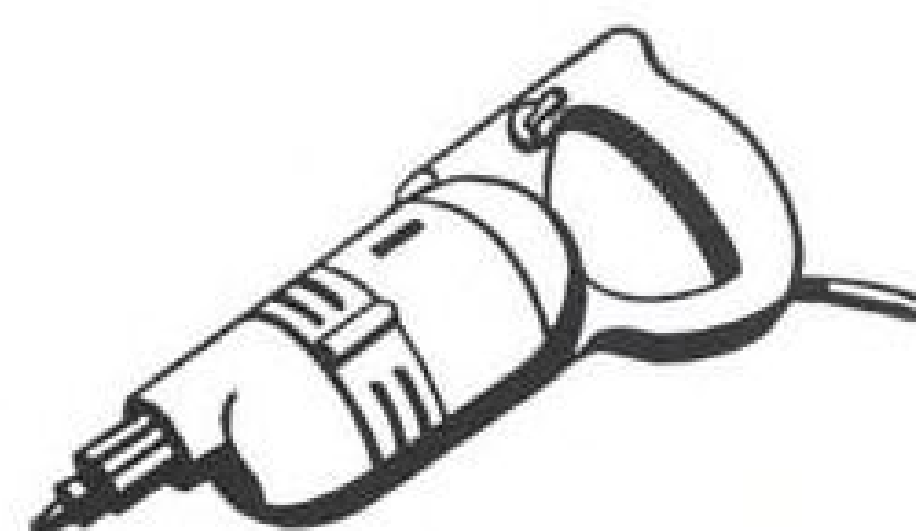
KOPPERS COMPANY, INC., PITTSBURGH 19, PA.

KOPPERS

THE INDUSTRY THAT SERVES ALL INDUSTRY

New Faso Protector Ends Drill Breakage!

...stop controls depth of hole, speeds up drilling time



...dimples drive drill close to point where work is being done

NOW YOU CAN drill faster — and not worry about breakage! The new Faso split-shank drill protector & stop protects your drill at the weakest point. And it lets you set your drill for any desired depth.

The Faso drill protector & stop, made by Hartwell, is available in selected sizes from 50 through F. Sizes 50 through 10 are held to 1/4" outside diameter to fit standard drill chucks. Larger sizes are held to 3/8".

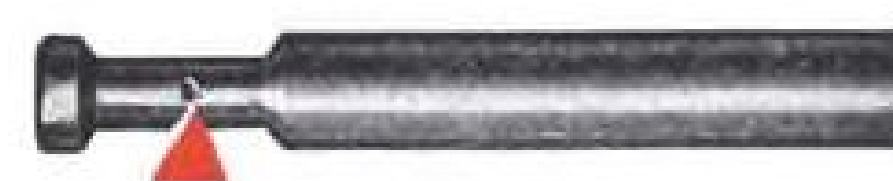
Hartwell also manufactures extension chucks in the above range of sizes, together with rod lengths of 6" and 11".

ASK YOUR JOBBER about the new Hartwell-made Faso line of drill protectors & stops, extension and angle chucks.

Single source for 779 production parts and tools

HARTWELL
AVIATION SUPPLY COMPANY

3417 Crenshaw Boulevard, Los Angeles 16, California
Dallas, Texas • Kansas City, Kansas



1. Dimples drive drill. Two dimples in nose of protector & stop drive the drill. Set at 180°, they fit the drill flute, placing the driving power near the point of the drill.



2. Stop controls drill depth. Any desired drilling depth can be set by protector & stop, thereby speeding drilling. Rounded nose of stop protects drilled surface.



3. Split shank. The shank of the protector & stop is split to permit the chuck to lock the drill at any desired depth setting.

4. Broken drills can be used. Broken drills, without shanks, may be inserted from front or rear of protector without being reworked.

Scrapping of Big Air Engines Seen Result of RFC Test Sale

Surplus units in excess of 600-hp. believed headed for scrap pile; officials indicate disposal policy is foregone conclusion despite auction of 19,000 powerplants to study market.

A forthcoming attempt by the Reconstruction Finance Corp. to test the market for the disposal of surplus aircraft engines is seen as a prelude to a recommendation that engines in the higher power categories be scrapped.

At a recent discussion with representatives of the aviation press, RFC surplus property officials announced bids would be accepted between Oct. 1 and Nov. 14 on the purchase of a total of 19,000 engines. While maintaining this was designed to sample possible outlets, Col. Frank J. Murphy, new chief of aircraft disposal, strongly intimated that he expected the results would indicate scrapping as the best solution to the complex engine disposal problem (AVIATION NEWS, Sept. 3).

Final 'Stock' — The number of engines that eventually will be declared surplus is unknown, although Col. A. E. R. Peterka estimated it may be as high as 250,000 to 300,000. The majority of these will be over 600 horsepower, and are expected to be the most difficult to sell. Of the 19,000 engines to be put on sale next month, 49 percent are in that category.

Despite the general belief that lower-powered engines will find a ready market, it was disclosed by the RFC that few will have service records or logs available.

In order to obtain CAA certificates for these, most will have to be completely torn down. Authorities insist this would practically prohibit their utilization by the average aircraft owner.

Answers Sought — The objective of the initial sale is to determine whether there is any commercial aviation use for the engines; there is any commercial non-aviation use; it is possible to establish price scales according to engine model condition; scrapping is the only answer; owning agencies should scrap the engines without ever declaring them surplus.

The engines being offered for sale are in two categories:

► Standard types and models either currently in commercial use or believed to have future markets.
► Obsolete types or models suitable

for commercial use only after extensive modification.

Prices which RFC will consider will be based on the category of the engines. Those in category one will be sold at prices approximating those of the manufacturers. Guide for prices of the other engines will be "maximum net return to the government."

Because of the flexibility of that scale, and also because this offering is considered as a test, Col. Murphy conceded that perhaps no sales would result from the bids.

Condition Problem — Further complicating the picture, from the prospective buyer's viewpoint, is the fact that RFC cannot warrant the condition of the engines. Its only information is furnished by the owning agency. Approximately one-half of the 19,000 engines are crated and these cannot be inspected by an interested purchaser.

Engine List

Tabulation of surplus engines in a test sale to be conducted by Reconstruction Finance Corporation, beginning Oct. 1, follows. Condition is as reported to RFC by the owning agencies.

Manufacturer	No.	Per Cent
Franklin.....	234	1.2%
Jacobs.....	151	.8%
Lycoming.....	4,658	24.4%
Allison.....	3,570	18.7%
Packard.....	244	1.3%
Pratt & Whitney.....	4,263	22.4%
Wright.....	5,953	31.2%
Total.....	19,073	100%

Reported Condition	No.	Per Cent
N—(New).....	306	1.6%
E—(Used but reconditioned)...	332	1.7%
O—(Used, usable without repairs).....	9,271	48.6%
R—(Used, usable with repairs)	8,929	46.8%
X—(Of no further use as originally intended, but has possible value other than as scrap.).....	235	1.3%
Total.....	19,073	100%

HORSEPOWER	
Under 400 hp.....	28%
400-650 hp.....	25%
650-1200 hp.....	44%
Over 1,200 hp.....	5%

The balance are in war-weary aircraft. While these may be inspected, no parts may be pulled out for examination.

Engine Production Picture

Effect of end-of-the-war contract cancellations on engine manufacturers is becoming a little clearer, even before full disclosure of the Navy's future plans.

While the main plants of the nation's two largest producers are still full of work that was in process at the time of the surrender, future business hopes apparently are largely built around new types.

► Pratt & Whitney has two in the mill; the R-4360 for superbombers, and a new R-2800E for fighters.

► Wright Aeronautical believes it will be some time before its Cyclone 18 R-3350 will be surpassed for large transports and consequently is keeping production facilities for that powerplant at the ready stage.

Additionally, Wright is progressing on its gas turbine engine and anticipates it will be the first of its kind on the market.

Overall, the engine manufacturing picture is not too bright due to the tremendous number in pipelines and on hand when the war ended. Many of these will be suitable for new aircraft shortly to come off production lines.

Hard Hit — New engine manufacture has been terminated almost entirely at P&W plants at East Hartford and Kansas City, and at the Nash Kelvinator facility at Kenosha, Wis. Allison and Wright have been hit as hard, with the Wright plant at Lockland closed.

Navy stock of P&W engines and those available from Army surpluses is said to be enough to supply Navy's aircraft program through July, 1947. There is a large surplus of R-1830-92 engines which P&W would like to get back for distribution to airline customers.

P&W's Navy contract is expected to be modified to call for a new high-power, low-weight engine for Navy fighters. This is the R-2800-42W which will replace the R-2800-18W.

Undisturbed — Although one source indicates Navy orders to Wright will be less than 75 engines a month, company spokesmen are undisturbed. They anticipate that uncanceled portions of present commitments, and further utilization of the R-3350 will require all their facilities for some time to come.

COMMENTARY

German Turbo-Jet Powerplant Revealed As Compact, Efficient

Bayerische Motoren Werke model 003, scheduled when Reich fell, for full production this fall, said to present excellent possibilities for further development; approached 2 to 1 thrust-weight ratio goal.

As Allied technical experts located their various "targets" where valuable information was expected, it soon became evident that there was such a wealth of material that some specialization between countries and services was essential in the interests of efficiency and speed in obtaining the necessary data, but with the final results of the total team eventually available to all.

In the field of gas turbines for jet propulsion (turbo-jet), it was decided that the British should concentrate first on the Jumo 004, which was the unit farthest along in production and in operational use. The U. S. Army Air Forces were given the BMW 003, and the U. S. Navy the Heinkel-Hirth Oil.

► **1939 Project** — The Bayerische Motoren Werke, with main factories in the Munich area, began experimental work on turbo-jet engines in 1936, and by 1939 the BMW 003 project was definitely decided upon.

The unit had its first test-stand runs in the summer of 1940, and something over two years later was test-flown in the twin-jet Heinkel 180 fighter. About the middle of 1944 it was flown in the improved model, the HE-280.

Neither of these aircraft went into operational use, but apparently this was not the fault of the turbo-jet, as the 003 has turned out to be an efficient, compact unit of simple design, with excellent possibilities of further development.

► **Heinkel Power** — It was the powerplant of the early model of the lightweight jet fighter, the Heinkel 162 Volksjaeger. The 003 was in limited production in the spring of 1945 and was scheduled to go into

quantity production (possibly 1,000 per month) by this fall.

The first sub-type was the 003A, and the records indicate that this unit was scheduled to go into certain versions of the Arado 234, while Jumo 004's were installed in others.

The 003A had a sea-level static thrust of 1,760-lbs.; at 560-mph., sea level, 1,550-lbs.; and at 36,000-ft. (500-mph.), 585-lbs. or 780-hp. (This is based on the fact that one

Rocket vs. Jet

When supersonic flight is achieved, competition will be between the rocket engine and athodyd (air ram jet) engine in the selection of power source. P. A. Colman, chief aerodynamics engineer of Lockheed Aircraft Corp., told engineers attending the Los Angeles summer fuels conference of the Society of Automotive Engineers.

Col. Homer A. Boushey, Jr., jet propulsion authority and commanding officer of the Army's 412th (jet) Fighter Group, who reviewed jet and rocket theory and performances as a guest speaker at the conference, opened way for the prediction when he cited the negligible overall efficiency of the athodyd at 500-mph.

► **Speed Efficiency** — Under audience questioning as to the reason for continued athodyd research throughout the country, Colonel Boushey and Colman, chairman of the session, explained that at supersonic speeds the efficiency of the athodyd will increase notably and bring it into range for use as a prime mover.

pound of thrust is equal to one horsepower at 375-mph.; at 500-mph. the horsepower figure is therefore one-third greater than that shown for the pounds of thrust.)

► **Planned Improvements** — Other versions of the 03 develop almost 2,000-lbs. of static thrust power, with a projected model in the 2,400-lb. bracket. With a weight of 1,250/1340-lbs. this would be approaching the 2-lbs. thrust/lb. of weight ratio, a definite goal for this class of engine, and in this respect far ahead of the yardstick for the reciprocating engine, which is one pound/horsepower.

(As there have been statements in the press indicating that American technical developments in jet propulsion lag behind those of the Germans, it may be pointed out that one American design, the GE unit in the P-80, a larger and improved development of the original Whittle engine, has a ratio of pounds of thrust to pounds of weight of better than 2 to 1.)

The 003A consists of a 4-stage axial compressor with a single-stage turbine; the axial-flow type of compressor permits a cigar-shaped unit.

► **Weight**, 1,340-lbs.; length, 11-ft., 10-in.; width, 2-ft., 4-in.; height, 2-ft., 10-in.;

► **Fuel used** is J2 (diesel oil) or 87 octane gasoline. Starting on the ground is provided by an electrically-started motor which cuts out at 2,000-rpm. Maximum rpm. of the unit itself is 9,500.

The 003C sub-type had a Brown Boverie type compressor, possibly with six stages. Other improvements led to an anticipated thrust for this version of 1,980-lbs. static at sea level. This unit was only partly developed.

A projected development embodying further improvements was the BMW 003D which was designed to deliver more than 2,400-lbs. of static thrust at sea level. This was in the drawing board stage.

Other BMW projects included two much larger aircraft gas turbines, the 018 turbo-jet and the 028 gas turbine for propeller drive.

► **Data Gatherer** — The project officer assigned to secure this material at BMW was Major Rudolph C. Shulte, who related some of his experiences in obtaining this data at a recent AAF-Lockheed-General Electric press conference in New York.

NAVIGATOR

KEN-RAD

METAL TUBES



Better than Ever

• Write for your copy of "Essential Characteristics" the most complete digest of tube information available.

New aviation and commercial radio equipment being built demands new heights of tube performance . . . Ken-Rad, with recently added resources and facilities, is superbly equipped to meet these requirements . . . Now and in the future, electronic designers and builders can rely on Ken-Rad Tubes to meet their most advanced specifications.

KEN-RAD

DIVISION OF GENERAL ELECTRIC COMPANY
OWENSBORO, KENTUCKY

FINANCIAL

Pan Am Stock Acquisitions Highlight July SEC Report

Officers and directors add substantial amounts to personal portfolios; nine continental airlines note transactions; Avco, Air Associates, Ryan list heaviest security trading among manufacturing group.

Securities and Exchange Commission summary of July security transactions and holdings disclosed the acquisition of substantial amounts of Pan American Airways Corp. \$2.50 par value capital stock by officers and directors through the exercise of warrants.

Juan T. Trippe, president, acquired 10,013 shares, increasing his holdings to 50,039 capital shares. In addition, he reported holdings of 20,000 shares through trusts and another 800 shares as a "claim against borrower of shares."

► **Other Buyers**—S. M. Fairchild, director, acquired 3,000 shares and sold 2,000 shares, increasing his holdings 1,000 shares to 21,000. Harold M. Bixby, vice-president, held 3,000 shares at the close of July after acquiring 1,000 shares. A similar number of shares were purchased by Vernon F. Taylor, director, who likewise held 3,000 shares at the end of July.

Other increases in holdings through the exercise of warrants and the number of shares owned at the close of the month were: John C. Cooper, vice-president, 942 shares to 2,826; George L. Rihl, vice-president, 733 shares to 2,100; H. Preston Morris, director, 600 shares to 1,800; J. Clawson Roop, vice-president and treasurer, 500 shares to 1,500; Robert Lehman, 500 shares to 1,500; Howard B. Dean, vice-president, 500 shares to 1,500; S. Sloan Colt, director, 135 shares to 405; Charles Francis Adams, director, 100 shares to 300; Prescott S. Bush, director, 50 shares to 150.

► **PCA**—Sale of 700 shares of Pennsylvania - Central Airlines Corp. common stock was reported by Lorenz Iverson, director, who had 7,300 shares in his portfolio at the close of July. Iverson filed a report for June, which showed the

sale of 4,000 shares of the company's common stock.

► **UAL**—Gardner Cowles, Jr., director of United Air Lines, Inc., reported the purchase of 500 shares of the common stock by Register & Tribune Co., bringing the shares held to 3,200 shares.

► **TWA**—Otis F. Bryan, vice-president of Transcontinental & Western Air, Inc., purchased 109 shares of the company's common stock in June, bringing his holdings to 313 shares.

► **WAL**—L. H. Dwerlkotte, executive vice-president of Western Air Lines, purchased 200 shares of the common stock, increasing his holdings to 11,140 shares, while Thomas Wolfe, vice-president, sold 200 shares, reducing his holdings to 7,800 shares.

► **NEA**—A June report filed by Eugene L. Vidal, director of Northeast Airlines, Inc., showed the sale of 500 shares of the common stock, leaving him 20,500 shares at the close of that month.

► **NAL**—E. P. Taliaferro, director of National Airlines, Inc., bought 50 shares of the company's common stock, which represented his entire holdings in the company at the end of July.

► **EAL**—A report for May filed by Paul H. Brattain, vice-president of Eastern Air Lines, Inc., disclosed the purchase of 833 shares, increasing his ownership to 4,333 shares. John H. Phipps, a director, reported the sale of 200 shares of Eastern's common stock through a trust, leaving the trust with 5,200 shares. Another trust held 900 shares at the close of July, while 625 shares were held through a third trust.

► **BNF**—Charles E. Beard, vice-president of Braniff Airways, Inc., increased his holdings of the company's common stock to 1,395 shares through the purchase of 100 shares.

► **CAI**—William M. Boyle, Jr. and Carl O. Hoffman, two new directors of Colonial Airlines, Inc., filed reports showing their holdings of the company's common stock. Boyle reported the ownership of 3,000 shares, while Hoffman holds 1,000 shares.

► **Grumman**—Among the manufacturing group, Leroy R. Grumman, president and principal stockholder of Grumman Aircraft Engineering Corp., sold 600 shares of the common stock, leaving him an ownership of 55,760 shares. Edmund W. Poor, treasurer, reduced his holdings to 11,000 shares through the sale of 1,000 shares.

► **Ryan**—T. Claude Ryan, president and principal stockholder of Ryan Aeronautical Co., reported the sale of 1,200 shares of the common stock in June, reducing his holdings to 58,381 shares. Ryan reported that his wife held 900 shares.

► **Beech**—Thomas D. Neelands, Jr., director of Beech Aircraft Corp., bought 200 shares of the company's common stock during July, giving him 201 shares in his portfolio.

► **Other transactions included:** Sale of 100 shares of North American Aviation, Inc., capital stock by Robert A. Lambeth, vice-president and treasurer, leaving him 100 shares; sale of 50 shares of Glenn L. Martin Co. common stock by William K. Ebel, vice-president, leaving his holdings at 500 shares.

Purchase of 1,000 shares of Aviation Corp. capital stock in May by Arthur W. Herrington, director, increasing his holdings to 1,500 shares; purchase of 100 shares of Consolidated Vultee Aircraft Corp. \$1.25 cumulative preferred stock by Neal Dow Becker, director, representing his entire holdings at the close of July.

► **Gilbert Colgate**, director and principal stockholder of Air Associates, Inc., reported the sale of 3,000 shares of his company's common stock in June. At the close of that month his holdings consisted of 12,548 shares.

• Braniff Airways, Inc., was issued the certificate of the "Highest Merit Award" by the magazine *Financial World*, for distinguished achievement in reporting for its annual 1944 financial statement to stockholders. A survey of 1,250 financial reports was made by the magazine.

• A concise study of airplane crash fire fighting has been published by the National Fire Fighting Assn., International, of Boston.

LEADING AIRCRAFT COMPANIES INSTALL TITEFLEX AEROCON 154

For Most Efficient Shielding on the Low-Tension Side of the Ignition System.

Just as Titeflex Aerocon 154 found immediate acceptance with the Armed Forces as the most efficient, dependable shielding for high-tension ignition systems . . . it is now equally recognized by twelve leading aircraft builders as the optimum conduit for low-tension applications.

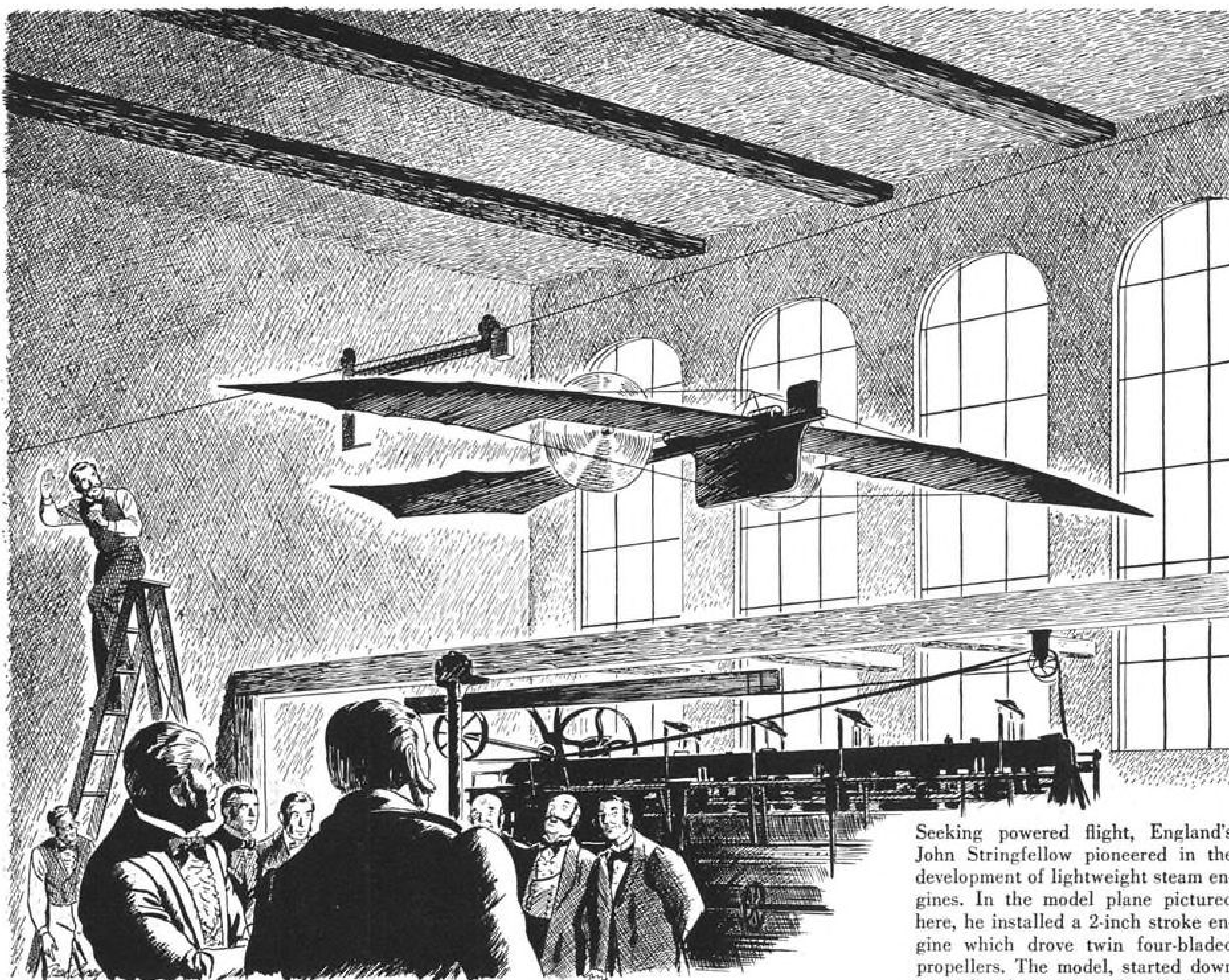
Made in all diameters for which conduit is required, Titeflex Aerocon 154 is extensively used for difficult shielding problems on electrical wiring from magneto to the ground switch, high voltage power lines to sensitive electronic devices, as well as lines from the booster coil to the instrument panel.

Consult Titeflex engineers on your requirements—or write direct for recommendations covering any specific application. Titeflex, Inc., 500 Frelinghuysen Avenue, Newark 5, N. J.

Titeflex

THE ALL-METAL FLEXIBLE TUBING THAT STAYS TIGHT





Seeking powered flight, England's John Stringfellow pioneered in the development of lightweight steam engines. In the model plane pictured here, he installed a 2-inch stroke engine which drove twin four-bladed propellers. The model, started down an inclined wire, actually lifted and was able to sustain flight for 120 feet

John Stringfellow taught engine power to fly

Nine pound model built in 1848 was first to lick the LIFT-DRAG ratio

Lift divided by Drag equals "X." As we increase the *Lift* which is caused by air passing around the wing—or as we reduce the *Drag* caused by the plane's passage through the air—we get a better "X." We get an airplane that flies higher or faster or carries greater loads on less fuel.

Compare, for example, the improvement that has come in Lift surfaces. The fragile biplane wing of the

past had just enough Lift to leave the ground. The modern Northrop-designed 66 foot wing of the Black Widow P-61 raises 30,000 pounds of plane and bombs into the stratosphere. And even this Northrop wing is only a beginning.

Major developments to cut down Drag also have come from Northrop . . . including the first multicellular internally-braced wing in 1929, the

stressed-skin fuselage in 1930, innovations in wing and fuselage shapes as in the 1934 Northrop Gamma and lighter, smoother construction through heliarc welding of magnesium, 1940.

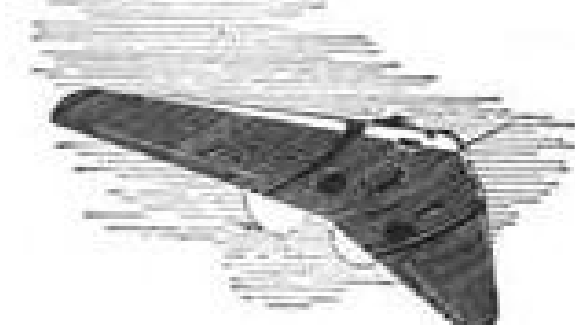
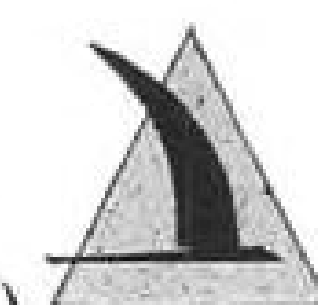
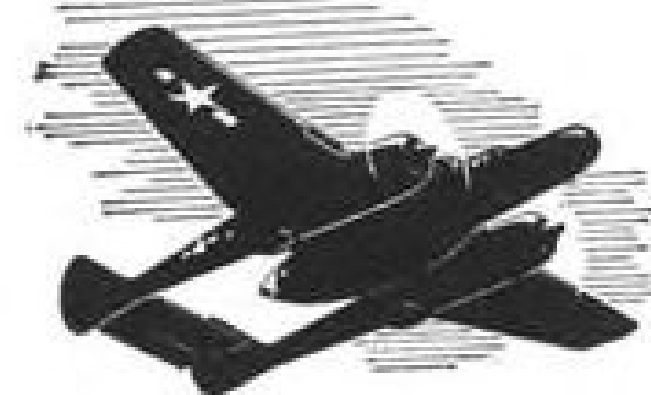
Improving the Lift-Drag ratio is a continuing project at Northrop. Northrop is set to better the ratio, not only with new, improved types of propulsion, but also with new types of planes like the *Flying Wing*, which eliminates nearly every Drag element.

Northrop Aircraft, Inc., Northrop Field, Hawthorne, California.

Creators of the **Black Widow**

P-61 Night Fighter and the **Flying Wing**

NORTHROP



TRANSPORT

C-54E's Allocated to Airlines As New Equipment Flow Begins

Surplus Property Board announces 100 to 200 four-engine planes will reach carriers for commercial operation within ten weeks; first 20 passenger versions slated for three lines awarded North Atlantic routes.

By MERLIN MICKEL

Allocation of 20 C-54E's as the first of 100 to 200 four-engine C-54's to go to the airlines in the next eight to ten weeks for commercial operation was announced by the Surplus Property Board over the weekend.

The first 20, as had been predicted, will go to the three U.S. flag lines recently certificated to fly North Atlantic routes. Eight will go to Pan American Airways and six each to American Airlines System and Transcontinental & Western Air. The planes are of the latest passenger-equipped type.

► **More Coming**—Only 97 C-54E's were built, and of this number about 50 are expected to be declared surplus for domestic and foreign airline allocation in the near future. The remainder of the 100 to 200 due in the next two and a half months will include a large proportion of C-54B's, cargo equipped but readily adaptable to passenger use. All in the group were built originally for the Army.

Although the first allocation is going to U. S. lines, SPB says additional equally good four-engine equipment will be made available to foreign airlines soon.

The outlook is good for additional four-engine equipment, beyond the group of up to 200, by the end of the year. General Harold L. George, commanding general of the Air Transport Command, is known to have told the airlines that he expects to be able to obtain release of a total of approximately 400 C-54 cargo planes to the airlines beginning this month and continuing through next June. Declared surplus by the War Department, they would go to the carriers on a lease basis.

► **Two-Engine Picture**—Prospects also are favorable for early release

to the airlines of additional twin-engine equipment of the DC-3 type. Seventy-odd C-53's are to be declared surplus within the next few months, and five C-49's are due this month or October. The airlines soon will be able to obtain all the C-47's they desire. Since this is a cargo version of the DC-3 not readily converted to airline passenger needs, the initial demand is not expected to be large. A few more Lockheed *Lodestars* also are to become available before the end of the year.

These developments will provide the start towards a much-needed clarification of the surplus picture, hitherto so confused that the airlines, not knowing what former military planes would be available, have been at a loss for accurate determination of likely needs for either surplus or new equipment.

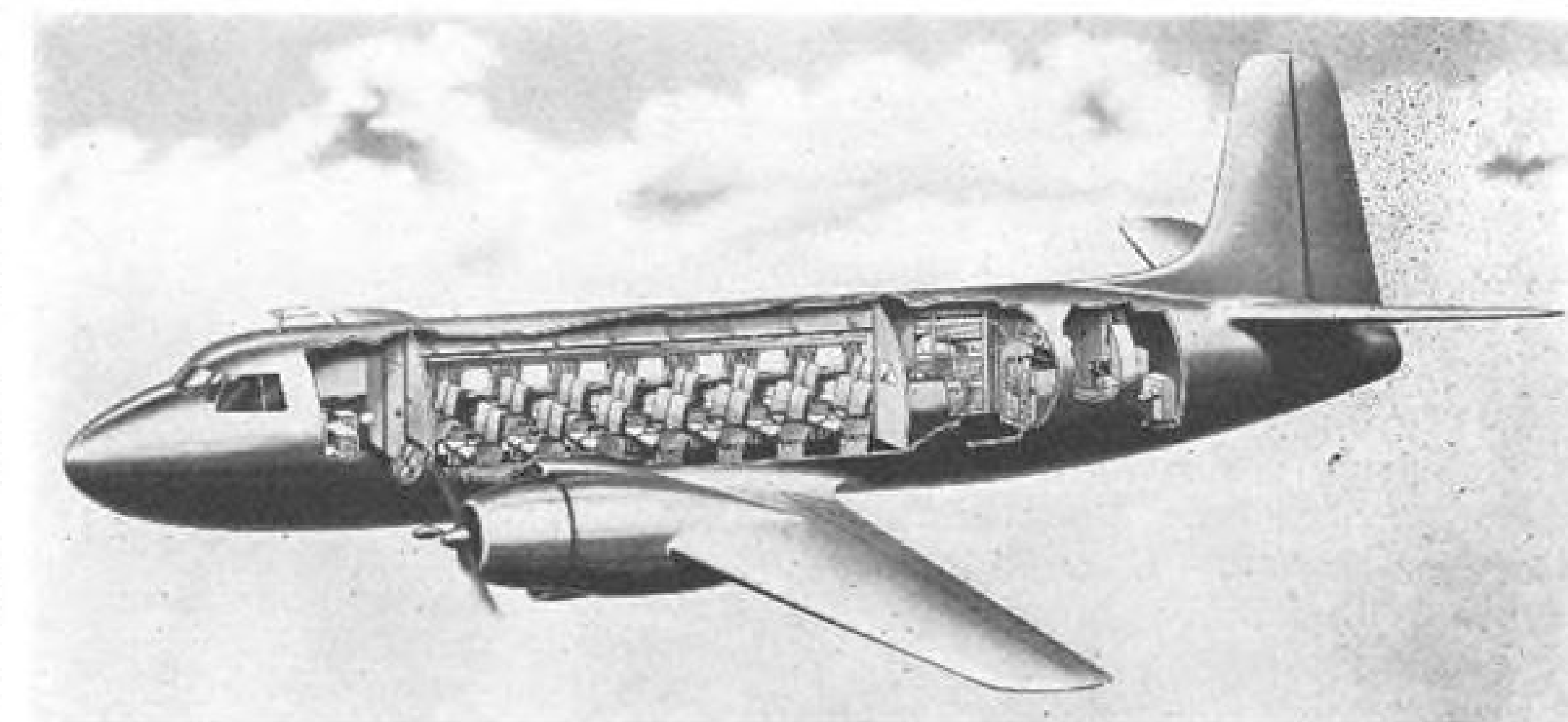
Estimates of the cost of converting the C-54 military transport to airline use vary widely from a mid-range figure of \$150,000, and there are other factors that will have a bearing on the demand for surplus four-engine units. Base price, lease cost, time required to convert, availability of conversion parts, and the outlook for new equipment off the production line are among these.

► **DC-4 Price**—Douglas Aircraft Co. has been giving a price on new DC-4, commercial version of the C-54, of about \$400,000. Feeling is definite in air carrier circles that Douglas will peg the cost of initial DC-6 transports at \$595,000 for the 26-52 passenger pressurized deluxe model and \$550,000 for the 68-passenger high-density version. The possibility is strong that the Santa Monica company will not manufacture a DC-4. Army release to the airlines of C-54 transports, for stop-gap use pending DC-6 deliveries, will be the determining factor. United Air Lines already has withdrawn early orders for the DC-4.

Douglas also has been sounding out the airlines on the C-117, twin-engine military passenger version of the DC-3, but here again need could not be determined pending knowledge of how much surplus equipment would be available.

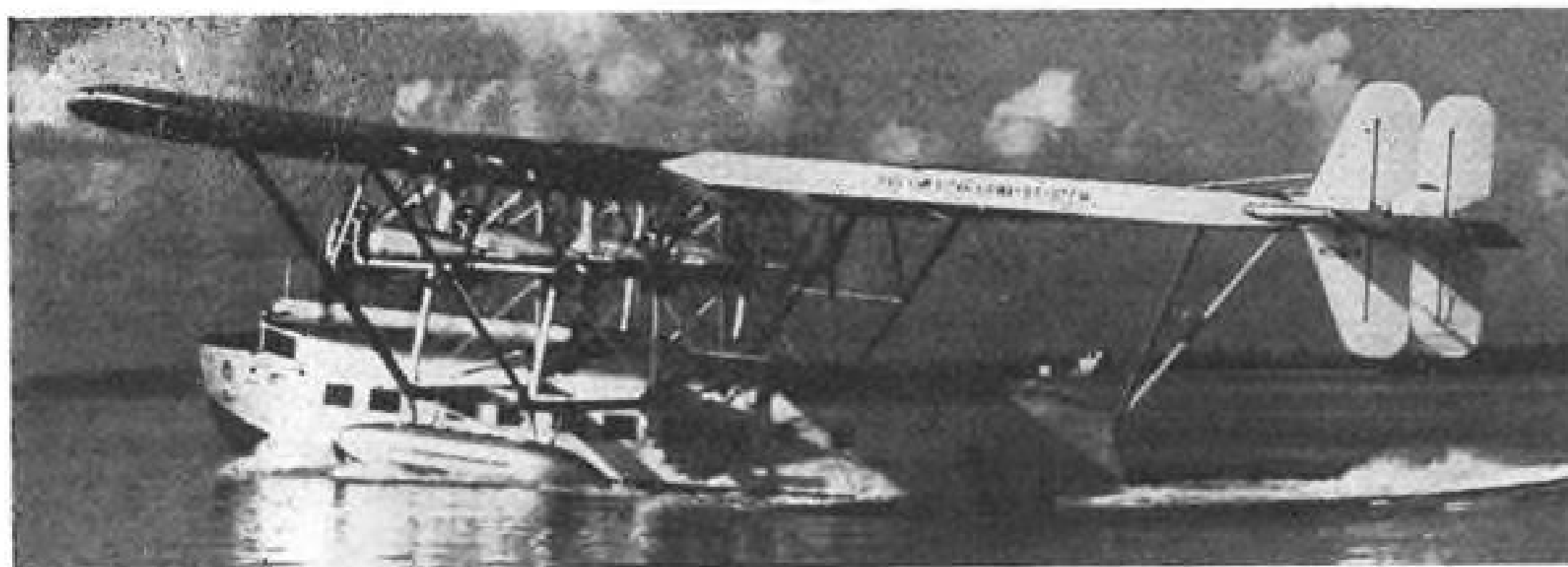
Not knowing how many it might be required to produce for the airlines at its Oklahoma City plant, Douglas has been unable to give a firm price, though estimates run around \$115,000 to \$120,000.

► **Vacate Plant**—The Oklahoma City plant, on which the overhead



'THREE-CENT-A-MILE' TRANSPORT:

Cut-away of Glenn L. Martin Co.'s new Model 202, 30-passenger, high-speed luxury airliner with a claimed operating cost so low it makes possible a passenger fare of three cents a mile. Convenience is emphasized in the design, with luggage racks opposite the entrance door and above the seats cutting down usual delays. A "bus" version of the 202 eliminates forward and aft cargo compartments, and uses the galley space for luggage, making possible 42 seats.



ORIGINAL CLIPPER SOLD:

Pan American's original Caribbean Clipper, a four-engine S-40 Sikorsky flying boat, has been sold to Joseph Beck of Miami. The ship logged 12,829 hours, mostly between Miami and Havana, and was used for training aerial navigators before it was retired a year ago. Whether it will be repaired or scrapped, Pan American says, has not been decided. Picture shows the S-40 during its career with PAA.

is about \$2,000,000 a year, also must be vacated by February, Douglas officials say. The Army C-117 contract was cut back immediately after the Japanese surrender; until then the plan was to have Douglas complete an order of 131 of these planes, of which 71 would be sold to the airlines at the level of cost to the Army.

Route Acquisition Legality Pondered

Arizona Airways, Inc., of Phoenix, is seeking Civil Aeronautics Board approval for acquisition of Transcontinental & Western Air's certificate for AM 38 between Phoenix, Ariz., and Las Vegas, Nev., via Prescott and Kingman, Ariz., and Boulder City, Nev.

Their application results from an agreement, July 11, between Arizona Airways, its affiliate Air-Safe Co., and TWA, providing for transfer to Arizona of TWA's certificate in return for 5,000 shares of \$10 par common stock and preferred stock with \$50,000 par value. Air-Safe—composed of H. O. Nelson (also president of Arizona Airways), Douglas Robinson, and James E. McEldowney—has the Ercoupe agency at Phoenix.

► **No Precedent**—Whether such acquisition is legal under section 408 of the Civil Aeronautics Act is the question the Board must determine. No precedent has been set. The case is the third of its kind to come before CAB. The first, involving Arthur C. Hyde and Tri-State Aviation Corp., was dismissed for lack of prosecution.

The second, Northern Airways' proposal to acquire the certificate of Harold Gillam, was the subject of recent hearing in a consolidated proceeding in Alaska.

TWA inaugurated service on AM 38 in November 1938. Because of lack of aircraft, service was suspended in May 1942, and the route is not now being operated.

PCA Four-Engine Fund

Pennsylvania-Central Airlines will meet the cost of new four-engine planes for its present system with a \$10,000,000 issue of new securities. Fifteen-year convertible income debentures to this amount will be offered to the public through investment houses headed by White, Weld and Co. and Carl M. Loeb, Rhoades and Co.

AA Plane Bids

American Airlines' request for bids on a 30-passenger plane for which it provided the general specifications, (AVIATION NEWS, Aug. 13), brought response from five aircraft manufacturers. Bids were opened last week, but results were not announced immediately.

Company officials had under consideration a plan to prepare in brochure form the various data received from the manufacturers, for distribution to every employee on American's system for their reaction to which they consider the best craft.

CAB Power Questioned In Page Probe Plea

Direct appeal to the Civil Aeronautics Board for dismissal, for want of jurisdiction, of its economic investigation of Page Airways, Rochester, N. Y., is being made by the company.

Prior to adjournment of the hearing in Washington last week, Albert F. Beitel, counsel for Page, gave notice that this action would be taken following Examiner William F. Cusick's denial of a motion to dismiss the case.

► **Not Carrier**—Beitel maintained that Page is not an air carrier within the meaning of section 1 of the Civil Aeronautics Act.

At sessions in Rochester, Public Counsel called 26 witnesses, including representatives of six Rochester war industries, which had contracts with Page for air services and several passengers on former Page flights.

Other than making available, at Public Counsel's request, certain of its officials and employees, Page furnished no witnesses of its own.

► **Testimony Trend**—Testimony of some of the witnesses was similar to that at the opening of the hearing (AVIATION NEWS, Aug. 27) when Page was described as a charter operator not maintaining definite schedules.

In the event CAB's ruling on the dismissal motion is adverse to Page, briefs will be due within 10 days from the date of decision.

Non-Airworthy Planes 'Ground' Kentucky Line

The Kentucky Aeronautics Commission recently suspended, after hearing, a state certificate held by Bluegrass Airlines, previously charged with operating planes not airworthy.

Harry E. Bullock, commission secretary, said the certificate was suspended indefinitely or until the company can comply with rules and regulations of the commission and the Civil Aeronautics Administration as to airworthiness of its planes.

The company said it had ordered new equipment and had one new twin-engine plane ready for service with two more expected shortly. It had been operating two routes in Kentucky, daily except Sunday, hauling both passengers and freight. Bullock said neither would be flown again until three planes are available, two to fly and one as standby.



You know, when you buy an Aeronca, you buy more than a plane. Every man who sells Aeronca planes is selected not only for his experience, but ability and character, too. He'll be located wherever people want to fly, ready to supply complete service all the time.

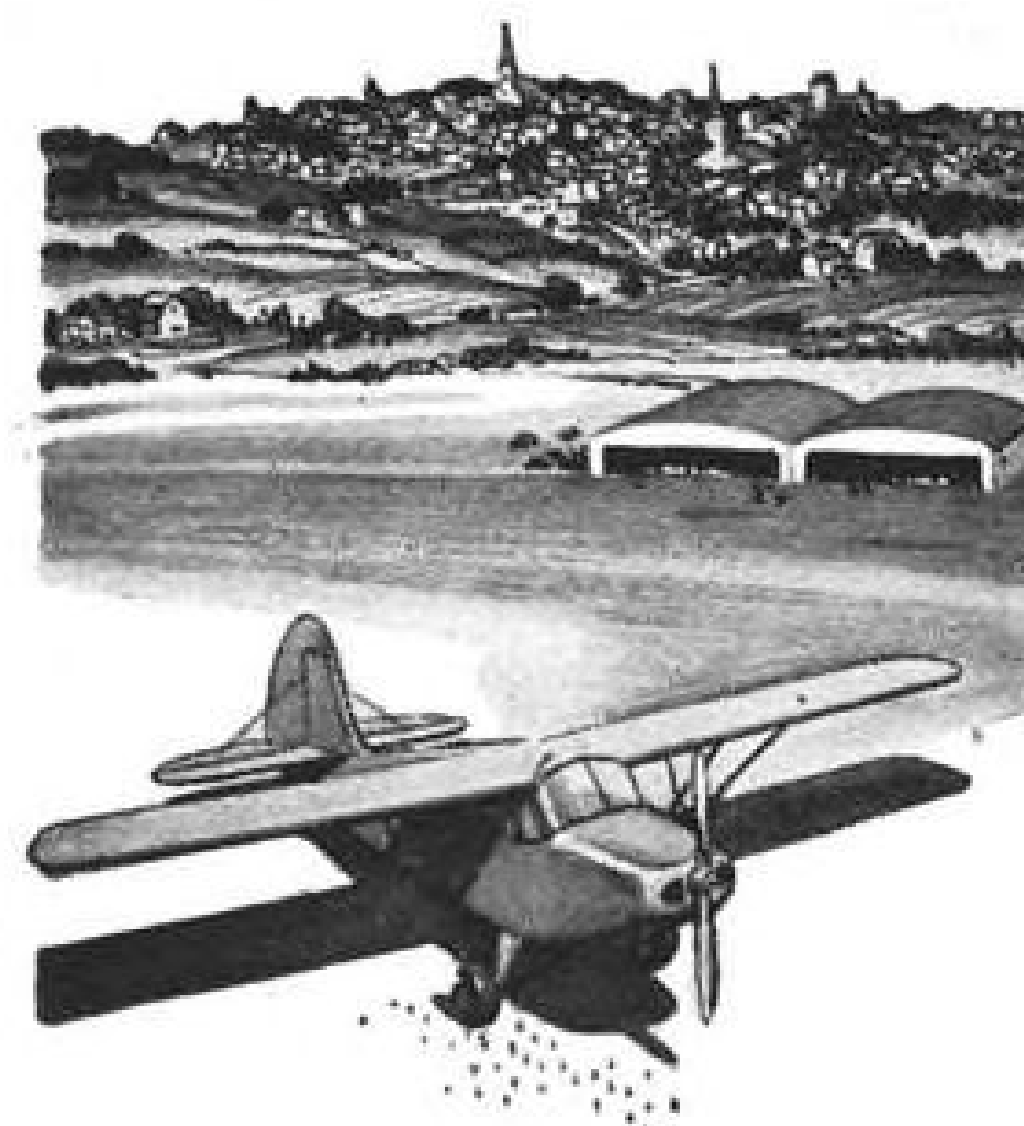
There'll be airstrips and airports all over the country, wherever you want to go. Aeronca's been pioneering these facilities. They've always taken the lead ever since they produced the first light plane 17 years ago.

The word's been getting around about the planes themselves, too—the last word in engineering, easy to buy, easy to fly. Air-minded people will look instinctively for the name "Aeronca" on a dealer's hangar. Potential dealers will



want a copy of "Why You Should Be An Aeronca Dealer." Send 10¢ to Aeronca Aircraft Corp., Dept. AV-9, Middletown, Ohio.

(Export Agency—Aviquipco, Inc., 25 Beaver St., New York 4, N. Y.)



AMERICA'S PERSONAL PLANE
AERONCA
has an important message for air-minded people

Freight Consolidation Plan Seen Boosting Air Cargo Use

New York organization, working with American Airlines on Model 39 experiment, finds load factor on mixed shipments high; clothing, department store merchandise, drugs in greatest volume.

By MARTIN V. MERRITT

A new venture in the handling of air freight that some airline cargo executives believe may have a profound influence on the growth of air cargo is the freight consolidation which has been undertaken by a New York organization in cooperation with American Airlines. This project is carried on as a part of the experimental work American is doing with Consolidated Vultee's Model 39.

In the use of a plane as large as this, with a payload of 18,500 pounds, there are as yet relatively few single customers who can furnish a one-lot shipment. American is now running a flight every Friday for one such customer. To accommodate the hundreds of potential air freight users whose total requirements at any one time are far below the 18,500

pound capacity figure, however, American has entered into an arrangement with Air Freight Consolidators, 630 Sackett Street, Brooklyn, whereby this organization takes over the entire cargo facilities of the Model 39 every Tuesday, paying American a flat rate regardless of the amount of space used.

Sidney Glanzberg, president of the Brooklyn company, who has been engaged for some time in the rail and motor freight business, is enthusiastic about the possibilities of the consolidation idea. This practice has been followed for years in rail and motor freight and its application to air is merely an adaptation. Mr. Glanzberg says that with the expiration this month of American's experimental period on the Model 39, a careful

study of the consolidation plan will be made to determine what revisions, if any, are needed before the work is projected to other air carriers.

Air Freight Consolidators has not established a rate scale similar to that which is known as less-carload in rail freight, but has acted as shippers' agents, charging a cost-plus fee for each shipment. While this has afforded greater protection during the experimental period for the consolidators, it is considered quite probable that a pound-mile rate will be developed should the split-load idea be expanded.

Load factor experience has been very encouraging, according to Mr. Glanzberg. With a cargo capacity of 18,500 pounds available, his organization has been able to secure loads averaging 17,500 pounds. The type of cargo has varied but has been predominantly ready-to-wear clothing, department store merchandise, and drugs and chemicals.

Air Express Optimism

Air express executives are predicting their greatest year in history, in volume and revenue, on the basis of record-breaking gains in the first six months of 1945.

Air Express Division of Railway Express Agency notes increases in domestic air express shipments from 824,875 for the first half of 1944 to 1,060,729 for the corresponding period this year, a gain of 28.6 percent. Gross revenue, meanwhile, went up 52.6 percent. Internationally the gain in shipments was 37.4 percent, from 111,403 to 153,078.



AIR FREIGHT EXPERIMENT:

Indication of the cost ranges which may be expected of non-scheduled air cargo operations should be gained at an early date by National Skyway Freight Corp., which operates cross-country service from Long Beach (Calif.) Municipal Airport. One of the company's fleet of Conestogas is shown at the California terminal after arriving from New York with a load of household furniture. Shown in the cargo hold of one of their fleet are three of the company's ex-Flying Tiger officers: Robert W. Prescott, president, center; Robert P. Hedman, vice-president in charge of operations, left; and Jack Cornelius, vice-president in charge of maintenance.



PICAO Unit Heads Named By Warner

Temporary chairmanship appointments prepare navigation and transport committees for meetings next month.

Temporary chairmen of the important Air Navigation and Air Transport committees of the Provisional International Civil Aviation Organization's Interim Council have been appointed by Dr. Edward Warner, president.

Named were A. R. McComb, Australian delegate, for the navigation post and Dr. F. H. Copes van Hasselt, delegate of The Netherlands, for the transport assignment.

The selections were announced shortly after adjournment of the council's first session. Full membership of the two committees will not be known for some time, as every state signatory to the Interim Agreement has the right to appoint a representative.

Office Duration—The two delegates will hold office for 30 days following first meetings of the committees, Oct. 2 and 3. Their appointments will be ratified or changed when the council reconvenes Oct. 15. Normally, the council itself would elect heads of the committees, but authority to make the temporary appointments was given the president to eliminate need for a special meeting before the committees were convened.

McComb's Air Navigation Committee and sub-committees will study and advise international standards for communications procedures, air navigation aids, air traffic control practices, rules of the air, licensing of personnel, airworthiness, meteorological protection, aeronautical maps and charts, and accident investigation.

The Air Transport Committee and its subsidiary groups will deal with operational, economic, statistical and legal aspects of international air transportation.

McComb, a veteran of the Australian Flying Corps in World War I, has played a leading role in development of civil airfields in Australia in recent years. In 1919, he made the overland survey in Australia for the Ross Smith pioneer flight from England. In 1937-38, he was in England with the British Air Ministry, organizing the Singapore-Sydney end of the Anglo-Australian air mail route. He is at present chief inspector of

Pogue Predictions

L. Welch Pogue, Civil Aeronautics Board chairman, foresees:

► Cargo revenue "some day" exceeding that from passengers.

► U. S. commercial airlines maintaining their good competitive position with foreign air carriers in international air service.

► Volume of domestic service expanding through increased operation on existing trunk lines.

► "A very liberal testing" of traffic potentialities in smaller communities.

Pogue declared, in a recent radio address, that the factor most essential to full development of civil aviation is a national realization that "civil aviation will be as important to peace as military aviation has just proved itself to be in war." He advocated support of technical advances and government programs designed to assist aviation's growth.

ground organization for the Civil Air Board.

► Dr. Copes van Hasselt is director of civil aviation for the Royal Netherlands Government. He practiced law in Java until 1941, when he joined the Netherlands East Indies Air Force. He escaped the Japanese and was sent to the U. S. as personnel officer of the Dutch flying school at Jackson, Miss. He attended the Chicago International Civil Aviation Conference as adviser on civil aviation to the Netherlands Government in London.

Pickup Air Service To Expand Abroad

Plans for the expansion of All American Aviation, the country's only "pickup" airline, extend to the foreign as well as the domestic field, according to the annual report to stockholders by Halsey R. Bazley, president.

Arrangements have been completed or are being negotiated for establishment of air pickup in several countries, and the expectation is that the service will start in the next six months in Canada, Brazil and Colombia. It is in Brazil that the company has completed organization of a subsidiary development and service company, Equipamento All American Avia-

tion, S. A., (AVIATION NEWS, July 9).

► **National Plans** — Domestically, the service plans straight air pickup routes and combined passenger-pickup routes. Applications have been filed for 18,481 route miles to serve 1,156 communities on 66 routes.

Operation of all this mileage, Bazley estimates, would require 128 aircraft of both single and twin-engine types. As of July, All American was operating a fleet of nine Stinson Reliants. It had been allocated two Douglas DC-2's, but these, say Civil Aeronautics Board sources, were resold.

Although the line's total business for the fiscal year ended July 30 was \$3,800,000, compared with \$3,475,000 in the year preceding, profits were down to \$191,771 from \$238,577. Bazley said the decline was due to an operating loss of \$73,931 in the air transport division, and a \$62,967 deferred charges write-off in connection with route surveys and new route applications.

► **Present Operation** — The company serves 117 communities in six states. Authorization by the Post Office Department of additional flights increased daily scheduled mileage 1,342 miles to a total of 5,238. Mail traffic was up 42.4 percent, express 13.7 percent. Main effort of the company's manufacturing division went to production of equipments and experimental projects for the military.

TWA Officials Touring N. Atlantic Route Points

A group of Transcontinental & Western Air officials left New York last week for the British Isles and Continental Europe to study prospects for North Atlantic routes recently certificated to the company by the Civil Aeronautics Board.

The delegation was headed by T. B. Wilson, chairman of TWA's board, who has charge of TWA foreign operations. With him were George Spater, David E. Midgely, Harold F. Blackburn, Dallas Blair-Smith and O. T. Thomsen.

► **Travel Task** — They were traveling to Eire by American Export Airlines, and the remainder of the way "by whatever type of conveyance is available."

Jack Nichols, TWA vice-president, went to Cairo for the same purpose some time ago.

Carriers Begin Readjustment To Non-Priority Travel Status

Belief that wartime control of service patterns may follow priority air travel out of existence on Oct. 15 also expressed; problems of shifting ticket and space procedures emerge immediately.

The airlines' long tussle with domestic air priorities will end Oct. 15 after an interim 30-day period during which, some airline and military sources believe, volume of this type of travel may dwindle of its own accord to virtually nothing.

There also is reason to expect that controls over the wartime air service pattern, whereby the Civil Aeronautics Board and the Army had final say on changes proposed by the carriers, will cease to exist when, or shortly after, priorities controls are removed.

► **First Step**—A sharp curtailment in priorities become effective Sept. 15, with the telescoping of the present four classes into one, abolishment of all so-called leave type and automatic priorities usually included in "travel by air" military orders, fewer military requirements for expedited official travel, and stringent screening of both military and civilian requests. War Department estimates are that this will cut the volume of priorities from 100,000 to 15,000 or less.

About 56 percent of the priority travel has been by troops, mostly enlisted men, on leave after return or before departure to foreign theaters. For the most part the

remainder has been directed orders and cases that before VJ day were considered urgent. Priorities granted after Sept. 15, say Air Transport Command sources, will be confined, generally, to air travel directly concerned with supervision and implementation of demobilization and occupation—in effect, completion of the war effort.

Coincident with discontinuation of domestic priorities controls, those on civilian airline services to South and Central America and Alaska also will be dropped. The War Department explained that military services paralleling these commercial routes will accommodate urgent military traffic. Priority controls on civil trans-Atlantic and trans-Pacific airline services will continue "for the present."

► **Line 'Breather'**—The new directive's provision of a breathing spell from Sept. 15 to Oct. 15 is in line with the airlines' desire for a gradual curtailment to permit adjustment in the changeover to full non-priority operation. There was some concern that if priorities were cut off too abruptly their reinstatement might be necessary. Actually, the carriers have 40 days notice that priorities will be discontinued, since the War Department announcement was made Sept. 5. Moreover, the move has been expected.

One airline spokesman said the change back to a non-priority basis might prove as complicated as priorities did originally. Airline reservation and ticketing personnel is accustomed to the priority system—many have not worked under any other—and changes in methods of bookkeeping and readjustment of the delicate balance of space control will present problems.

At least one transcontinental operator is considering booking non-priority passengers up to 75 percent of its space for the 30-day period after Sept. 15, but admits frankly that it does not know what changes in procedure will be necessary after Oct. 15.

► **Control Inception**—Wartime ser-

vice pattern controls were initiated early in 1942 under the same executive order that permitted the inauguration of formal priorities, and were administered primarily in consideration of wartime priority traffic. Originally, proposed changes in the service pattern were subject to approval by the military director of civil aviation, and later by the Air Transport Command. In March, 1944, Army relinquished to the board the duty of passing on such changes—a nominal delegation since CAB recommendations in that regard generally had been accepted by the military. ATC officials say any remaining vestige of military control over the air service pattern will go out with priorities. Board sources say CAB probably will request official termination of wartime service pattern controls through a letter to the War Department after priorities cease.

Any immediate difference in the service pattern is unlikely, however, after the board no longer passes on schedules and equipment, because of the time necessary to make changes. The way may be eased for operation of some routes hitherto not served because of the war situation, but this would require board action, since such suspensions are authorized by special exemption order. More requests may be expected for non-stop privileges, always subject to board approval, and it is certain that more cities of small size, heretofore passed over by the big airlines, will be served soon.

New Airmail Rate Accepted By Three

Three of the "Big Four" air carriers—American Airlines, Eastern Air Lines, and United Air Lines—have formally expressed their willingness to accept Civil Aeronautics Board's proposed new mail pay rate of 45 cents per ton-mile (AVIATION NEWS, Aug. 20).

The fourth—Transcontinental & Western Air—has decided to do the same but will ask the board to make the rate effective, as far as TWA is concerned, on Oct. 1.

► **Retroactive**—As proposed by CAB, the rate would be retroactive to Jan. 1, the date on which the board served its original orders to show cause why mail pay should not be reduced from the present 60 cents per ton-mile to 32 cents.

The position of American, East-

ern, and United was made known at brief hearings before Examiner Charles J. Frederick. The three lines went on record as having no objection to the 45-cent rate. They made clear, however, that their failure to object now was not to be construed as binding in future rate proceedings.

Mark Anniversary Of Air Mail Flight

Postmaster General Robert E. Hannegan was guest of honor at a luncheon in New York Friday, commemorating the twenty-fifth anniversary of the first flight of trans-continental air mail, sponsored by the Wings Club and the Aviation Section, New York Board of Trade.

James P. Murray, now resident vice-president of Boeing Aircraft at Washington, D. C., who flew the Chicago-to-Salt Lake City leg on the first flight, was present.

Sumner Sewall, former Governor of Maine, now president of American Export Airlines, introduced Mr. Hannegan. Following his address, presentation of a commemorative plaque to City of New York was made by Cyril Thompson, vice-president, United Air Lines, to the Mayor marking the occasion.

Representatives of military, naval, industrial and civic life present included: Major General Samuel E. Anderson, A.A.F., representing General H. H. Arnold; Rear Admiral Charles E. Rosendahl, U.S.N.; J. A. Zellers, chairman Industry Group, War Labor Board, NY Region, vice-president, Remington-Rand; John B. Glenn,

OPPORTUNITY

Foreman—Engine Overhaul Shop. Qualified to supervise and direct personnel in accessory, propeller and Pratt & Whitney engine overhaul. Must be well qualified in regard to production methods and have had experience as Foreman or Inspector with airline or comparable experience.

P-150, AVIATION NEWS

330 W. 42 St., New York 18, N. Y.

Aircraft Structural Engineer

Must be familiar with weight and balance procedure, repair of aircraft structure and aircraft overhaul. Must have some knowledge of aircraft and structural design. Airline experience.

P-151, AVIATION NEWS

330 West 42nd Street New York 18, N. Y.

CHIEF AIRLINE ENGINEER

Familiar with all phases of airline operation. Powerplant, airplane overhaul, airports and airways, airport buildings and facilities. Must have had airline experience.

P-152, Aviation News

330 W. 42 St., New York 18, N. Y.

Baby Flights

Transcontinental & Western Air soon may tap a heretofore only casually exploited source of passenger revenues by featuring one or more daily transcontinental trips as "Baby Flights."

TWA officials believe that as travel restrictions are lifted an increasingly large number of mothers with infants will turn to air travel to minimize the inconveniences of lengthy surface transport journeys.

If infant travel develops as expected, TWA may offer flights specially equipped for infant care and feeding. Stewards for such flights would be selected and trained for that type of service.

president, New York Board of Trade; Hon. John McKenzie, commissioner, Dept. of Marine and Aviation; Reed Chambers, president, Wings Club; Col. Allan M. Pope, president, Commerce and Industry Association, Inc.; Leroy A. Lincoln, president, Metropolitan Life Insurance Co. and president of the Chamber of Commerce of the State of New York.

Attention!

Manufacturers of aircraft products. Established organization—with proven record of sales to the aircraft industry, can now handle several additional items. Your sales forces, because of reduced volume, may now be excessive. If so, a discussion of the advantages of appointing our firm as your sales representatives on the East Coast would be mutually desirable.

HANSELL & COMPANY

12 SOUTH 12th STREET
PHILADELPHIA 7, PA.

122 EAST 42nd STREET
NEW YORK, N. Y.

Brazil, Peru Schedule Air Talks With Burden

William A. M. Burden, Assistant Secretary of Commerce, has gone to Brazil and Peru to discuss civil aviation topics with officials of those republics.

On Burden's agenda are post-war development of civil aviation, integration of the airways system in the western hemisphere, aviation training and education, and air safety.

► **Hemisphere Hope**—Representatives of all South American nations, with the exception of Argentina, expressed the hope at last year's International Civil Aviation Conference at Chicago, that a single airways system might be adopted for the western hemisphere. Argentina was not represented at the meeting. Canada and the Republic of Mexico already use airway facilities and methods of the Civil Aeronautics Administration.

One of the high points of Burden's trip may be a visit with Adolph Berle, Jr., U. S. ambassador to Brazil, who, while Assistant Secretary of State presided over the Chicago conference.

For Efficient Cleaning



Chart Copyrighted 1942
by Kelite Products, Inc.

PH CONTROL

has proved to be the key to a new, high standard of efficiency in metal cleaning and processing. It is one of the reasons why Kelite materials are the number one choice of the Aircraft Industry.

A. C. Stripper—removes paint rapidly. Protexol—"wets out" oil, grease. KDL No. 1—simplifies hot tank cleaning. KDL No. 28—wipes off exhaust stains. Super Ketrex—soaks off carbon, sludge, grease. Process K—removes scale, corrosion.

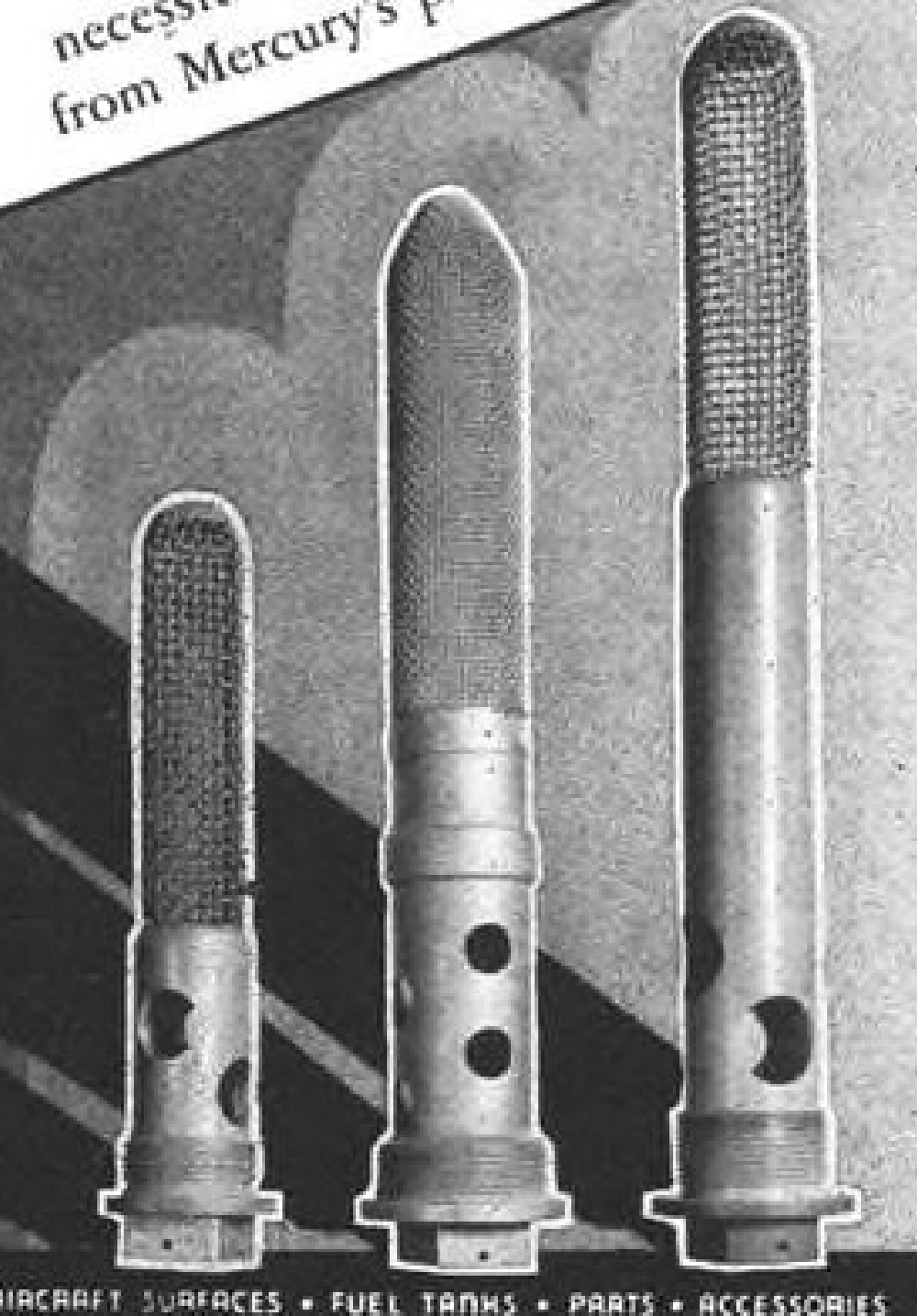
Kelite Products, Inc.

909 East 60th St., Los Angeles 1, Calif.
"Kelite" Reg. U. S. Pat. Off.

KELITE-O
SCIENTIFIC CLEANING THROUGH PH CONTROL



• From the giant spars for mighty cargo planes to the small but vital strainers guarding the flyer's fuel, the necessities for aerial warfare come from Mercury's plants...on schedule!



AIRCRAFT SURFACES • FUEL TANKS • PARTS • ACCESSORIES

TCA Route To South America

An international route from Montreal to South America has been discussed for government-owned Trans-Canada Airlines for some time. Definite plans are understood to have been made and test flights flown over the route, but little information thereon has been available.

Now, it is learned on good authority that the TCA route will start and end at Montreal, operating via the Bahama Islands, Jamaica, Trinidad and then north to Bermuda to Montreal. **► Direct Schedule**—Because there would be heavy traffic to Bermuda in the winter months when many Canadians go there, as well as the Bahamas, for the winter, there undoubtedly will be also a direct run south from Montreal to Bermuda, in addition to the circle route.

TCA expects that by 1950 its

domestic Canadian runs will carry 10 times the traffic they did in 1939. TCA operating costs in the period since it first began operations late in 1937 to the end of 1944 have dropped nearly 40 percent per ton mile, and cuts in rates all along the line are expected at an early date.

TCA officials have expressed the opinion that by 1950 about half of Canada's population will benefit directly from air transportation with increases in routes and expanded use of air facilities for mail, express, and passengers. Currently about 125,000 persons consistently use air transport in some form or other in Canada.

► Growth Forecast—Officials also expect that there will be about 14 principal Canadian domestic air transport routes, and that private flying in Canada by 1950 will be five times what it was in 1939.

Reservation Code Revisions Planned

Early consideration may be given by the airlines to methods of simplifying and widening use of the Interline Reservations Code, with special attention to establishment of a single Code for use both domestically and internationally by airline traffic and operations departments and the Civil Aeronautics Authority and other agencies dealing with airline communications problems.

The problem was tabled at a meeting recently of the reservations committee of the Air Traffic

Conference, a division of the Air Transport Association, for post-war discussion, with the suggestion that in the meantime committee members submit recommendations. CAA is interested in a single Code but, because of war-caused lack of manpower and mechanical equipment, cannot now consider extensive changes that might change automatic radio transmitting devices.

► Volume Problem—Among other problems discussed by the committee was volume handling of passengers and baggage after the airlines start using larger planes. Suggesting that use of standard weights for passengers and baggage might help here, the group recommended that the Air Traffic Conference assign the problem to a committee for study and report.

Essair Asks Interstate Routes In CAB Request

Essair, Inc., of Dallas, Tex., only feederline in the nation with a CAB certificate, has applied to the Civil Aeronautics Board for two new routes which, if granted, would make the company an interstate operator.

The application, for two routes between Houston, Tex., and New Orleans, La., is a revision of an original request for only one route between these points. Essair now operates between Amarillo and Houston.

EXCELLENT OPENING FOR RADIO SALES ENGINEER

Leading national concern with headquarters in Southern California has opening for Sales Engineer experienced in mobile radio communication systems. VHF and/or airline experience desirable. Graduate electrical or radio engineer preferred. Does not have to be a design engineer but should be able to analyze requirements and recommend proper equipment. Please state qualifications and salary desired. Enclose recent snapshot.

SW-154, AVIATION NEWS
68 Post St., San Francisco 4, Calif.

CAB SCHEDULE

- Sept. 10. Briefs due for West Coast case. (Docket 250 et al.)
- Sept. 10. Exchange of exhibits in Great Lakes Area case. Postponed from Sept. 1. (Docket 535 et al.)
- Sept. 10. Meeting with industry on proposed revision of Part 04 of Civil Air Regulations, on airworthiness requirements for transport airplanes.
- Sept. 11. Exceptions to examiners' report due in Pacific case. (Docket 547 et al.)
- Sept. 12. Hearing on Bristol Bay applications of Walatka Air Service et al. in Anchorage, Alaska. (Docket 1309.)
- Sept. 15. Briefs due for Southeastern States case. (Docket 501 et al.)
- Sept. 17. Rebuttal exhibits due on Baltimore's application for designation as a coterminal on North Atlantic routes. (Docket 1975.)
- Sept. 19. Hearing on Petersen-Bristol Bay acquisition in Anchorage, Alaska. (Docket 1965.)
- Sept. 21. Exchange of rebuttal exhibits in Great Lakes Area case. (Docket 535 et al.)
- Sept. 21. Tentative hearing date on Baltimore's application for designation as a coterminal on North Atlantic routes. Postponed from tentative date of Sept. 13. (Docket 1975.)
- Sept. 24. Oral argument in Hawaiian case. (Docket 851 et al.)
- Sept. 29. Hearing on Northern Airways' application for pickup service in Alaska, at Fairbanks. (Docket 1835.)
- Oct. 1. Briefs due in Pacific case. (Docket 547 et al.)
- Oct. 1. Hearing in Great Lakes Area proceeding. (Docket 535 et al.)
- Oct. 1. Exchange of exhibits in the Mississippi Valley case. (Docket 548 et al.)
- Oct. 1. Oral argument in Rocky Mountain Area proceeding. Postponed from Sept. 10. (Docket 152 et al.)
- Oct. 4. Oral argument in Florida case. Postponed from Sept. 5 and 17. (Docket 489 et al.)
- Oct. 8. Oral argument in West Coast case. (Docket 250 et al.)
- Oct. 22. Rebuttal exhibits due in Mississippi Valley case. (Docket 548 et al.)
- Nov. 5. Hearing in Mississippi Valley case. (Docket 548 et al.)
- Nov. 20. Rebuttal exhibits due in Middle Atlantic case. (Docket 674 et al.)
- Nov. 30. Exchange of exhibits in Middle Atlantic case. Postponed from Nov. 1. (Docket 674 et al.)
- Dec. 3. Kansas City-Memphis-Florida hearing. (Docket 1051 et al.)
- Dec. 3. Tentative hearing date in Middle Atlantic case. (Docket 674 et al.)
- Dec. 3. Tentative hearing date in Kansas City-Memphis-Florida case. (Docket 1051.)
- Dec. 7. Exchange of exhibits in Kansas City-Memphis-Florida case. Postponed from Nov. 1. (Docket 1051 et al.)
- Dec. 24. Rebuttal exhibits due in Kansas City-Memphis-Florida case. Postponed from Nov. 20. Hearing, previously set tentatively for Dec. 3, postponed to unspecified time in January. (Docket 1051 et al.)

CAB ACTION

The Civil Aeronautics Board:

- Permitted Delta Air Corp. to inaugurate, Sept. 1, non-stop services between Monroe, La., and Dallas, Tex., and between Dallas, and New Orleans, La., on AM 24.
- Granted cities of Cincinnati and Lima, Ohio, Nashville, Tenn., and Tri-City Airport Commission of Saginaw, Bay City, and Midland, Mich., permission to intervene in Great Lakes Area case (Docket 535 et al.).
- Dismissed, at applicants' request, applications of Dayton & Western Ohio Airlines (Docket 1427) and Cincinnati & Lake Erie Transportation Co. et al. (Docket 1792) in Great Lakes Area case (Docket 535 et al.).
- Notified Braniff Airways that national defense no longer requires delay in inauguration of service to and from Tulsa and Muskogee, Okla., Fort Smith and Little Rock, Ark., and Memphis, Tenn., on AM 15.
- Reopened Docket 517 and approved United Air Lines' application for non-stop service between Fresno and Sacramento, Calif., on AM 11.
- Approved agreement of Pan American Airways and Braniff Airways relating to air-

NEEDED
ALL TYPES OF EXPERIENCED
AIRCRAFT ENGINEERS

Write
McDONNELL AIRCRAFT CORPORATION
Ambassador Bldg. St. Louis 1

conditioning of Braniff's planes at Brownsville, Tex.

- Approved agreement of American Airlines, Mid-Continent Airlines, Eastern Air Lines, Chicago and Southern Air Lines, and Transcontinental & Western Air relating to management of Lambert-St. Louis Airport.
- Approved amended agreement of Alaska Airlines and other air carriers (members of Air Traffic Conference of America) relating to ATCA resolution providing for proration of costs for maintaining air mail field post offices.

Buffalo Field Charge Objected To By AA

American Airlines doesn't like the rates it pays at Buffalo, N. Y., airport and "naturally" will provide more service to airports offering more favorable leases, says George C. Wright, Buffalo traffic manager for the carrier.

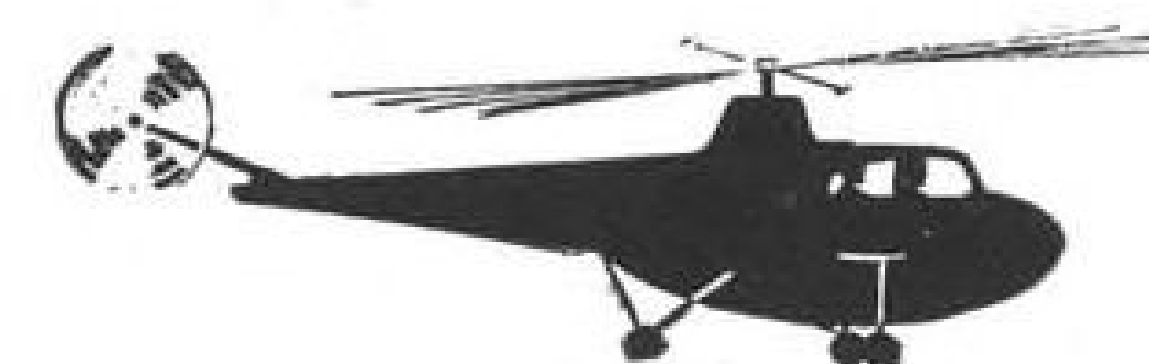
Landing fees at the airport were raised from \$25 to \$50 a month for each scheduled flight early this year. The company is paying the rates but has not signed a proffered lease, which was to run to Jan. 1, 1947. Wright said the increase raised local cost to American from \$600 to \$1,200 a month. **► No Shift**—The line's lease at Niagara Falls calls for landing fees only half as costly as at Buffalo, but Wright said American has no plans—"no thought, even"—of curtailing its service in Buffalo and shifting it to Niagara Falls.



on LUSCOMBE

Prompt repair service now available. If your wood propeller... regardless of its make... needs servicing or repairs, send it to Sensenich.

SENSENICH BROTHERS — Adjacent to Lancaster Municipal Airport, Lancaster, Pa.—West Coast Branch, Glendale, Calif.



THE HELICOPTER

presents future opportunities

If you are interested in this new phase of the aircraft industry, here is your opportunity to grow up with it. Bell Aircraft Corporation is in need of several men of qualified experience to assist in its Helicopter development program. We particularly need: Stress Analysts, Aerodynamicists and Vibration Engineers.

Write to: Chief Engineer, Helicopter Division,
Bell Aircraft Corporation, Buffalo 5, N. Y.

BELL AIRCRAFT CORPORATION
BUFFALO 5, NEW YORK

Where Is Everybody?

A CAB EXAMINERS' REPORT making recommendations to the Board of vital importance to all present and proposed operators of non-scheduled air services was issued Aug. 29, and appeared in AVIATION NEWS Aug. 27. Comments on the report, suggesting registration and certification of all operators, were requested by CAB within 20 days from issuance. The Board made the declaration that, depending upon the nature of such comments, it may assign the subject for oral argument. Believe it or not, despite the long-range significance of the proposals made by the examiners, which may be adopted unchanged by the Board, there had been only one comment filed with the Board up to last Thursday.

It has been the habit of some fixed-base operators to sit back with an air of hopelessness and label the membership of the Civil Aeronautics Board as a group prejudiced against them. The Board, however, is compelled to base its decisions in large part from the best evidence which it is able to gather. If the non-scheduled operators now muff their opportunity to win an oral argument on this report and present their case to the Board, in a show of strength of unity, let there be no wails of anguish, and no cries of persecution or accusations of sinister influences from the big, bad airlines.

Response from the operators has also been meager, if there has been any at all, on the proposed safety regulations suggested by CAB's Safety Bureau several weeks ago. These appeared in the NEWS, Aug. 27. If adopted, these recommendations would make it impossible for far more than half of today's operators to engage in any transport business.

Apparently the only group which has shown an awareness of the problem is the Aeronautical Training Society, whose newsletter last week told the operators bluntly:

"What will eliminate objectionable features from proposed regulation is a strong response from the grass roots. Representatives of one or two trade associations in Washington can't do the job alone. What the Board will respect, will listen to, what it may even hope for is hundreds of responses, both personal and by mail, from those . . . with a stake in the business. And that means every fixed baser and every distributor and manufacturer of airplanes. If we let the game go by default, we deserve to lose it. And we will

lose it if we keep silent, and give consent to putting the infant in leg irons and handcuffs."

Who is filing official comments with the Board on the examiners' recommendations by the Sept. 11 deadline? Who is requesting an oral argument? Who will present the non-scheduled industry's arguments at that proceeding if it is held? Who is leading any opposition to the proposed safety regulations, comments for which must reach the Board by Oct. 1?

Where is everybody?

Why Aircraft Memorials?

PUBLIC DEMAND has induced Surplus Property Board to extend distribution of war-weary combat planes under its educational program to states, counties and cities who wish to display aircraft as war memorials.

The terms are the same as those under which schools may make purchases: \$350 plus handling and shipping charges for a *Flying Fortress*; \$100 plus charges for a fighter plane.

At first glance, wide use of World War II bombers or fighters may appeal to the public! It gives the government a few dollars in revenue. It would make unnecessary the scrapping of a few planes, a practice which still seems so reprehensible to many citizens who do not understand that an obsolete combat plane has already performed its job, that it is worthless and should not be permitted to figure in any current estimates of our air power. The idea of having on perpetual exhibit in the public square a *Fortress* or *Thunderbolt* from a squadron which was manned by several local boys has its sentimental aspect.

But the other side of the picture is this: the revenue derived is inconsequential. Handling and shipping charges will be costly. The aircraft will serve no useful purpose for the living. Local townsmen could do more for aviation, their community, and their country to construct a local memorial airpark to further flying training for young men who would be called on in a future war. Since there is no provision under the SPB arrangement that cities displaying the aircraft must keep them in good condition, these symbols of our air might well look seedy and outmoded after sitting in the weather and become unsightly objects. Yet who will be bold enough to order a war memorial removed?

We hope SPB will have few customers from local governments for aircraft memorials.

ROBERT H. WOOD



*Almost every American
benefits every day
from the products of*
BORG-WARNER

MILLION-A-DAY PRODUCTION OF AMMUNITION LINKS as painted by James Sessions at the SPRING DIVISION in Bellwood, Illinois. This Borg-Warner plant revolutionized the making of Garand Rifle Clips and initiated several mass-production processes for the manufacture of links for the 50 Caliber Machine Gun that plays a major role in America's air supremacy. In peace it is a leading maker of mechanical precision springs for automotive valves and clutches.

When the last bullet is fired industry's *know-how* will be building a better peacetime world.

Then, as in war, Borg-Warner will again provide important advances. For Borg-Warner makes not only complete products, but also essential parts for products of other industries. For example, Borg-Warner parts today are serving on 9 out of 10 farms, in 9 out of 10 airplanes, in 9 out of 10 makes of automobiles.

Also Norge appliances make the homes of millions more efficient. And these are just a few of the fields in which Borg-Warner products serve Americans daily.

From the beginning, the engineering and large-scale manufacturing of all B-W companies have been guided by the principle: "Design it better, make it better." And this ideal always is working to bring you ever better products at ever lower costs.

Partners with the Aviation industry from the start, Borg-Warner parts today are serving in 9 out of 10 airplanes.

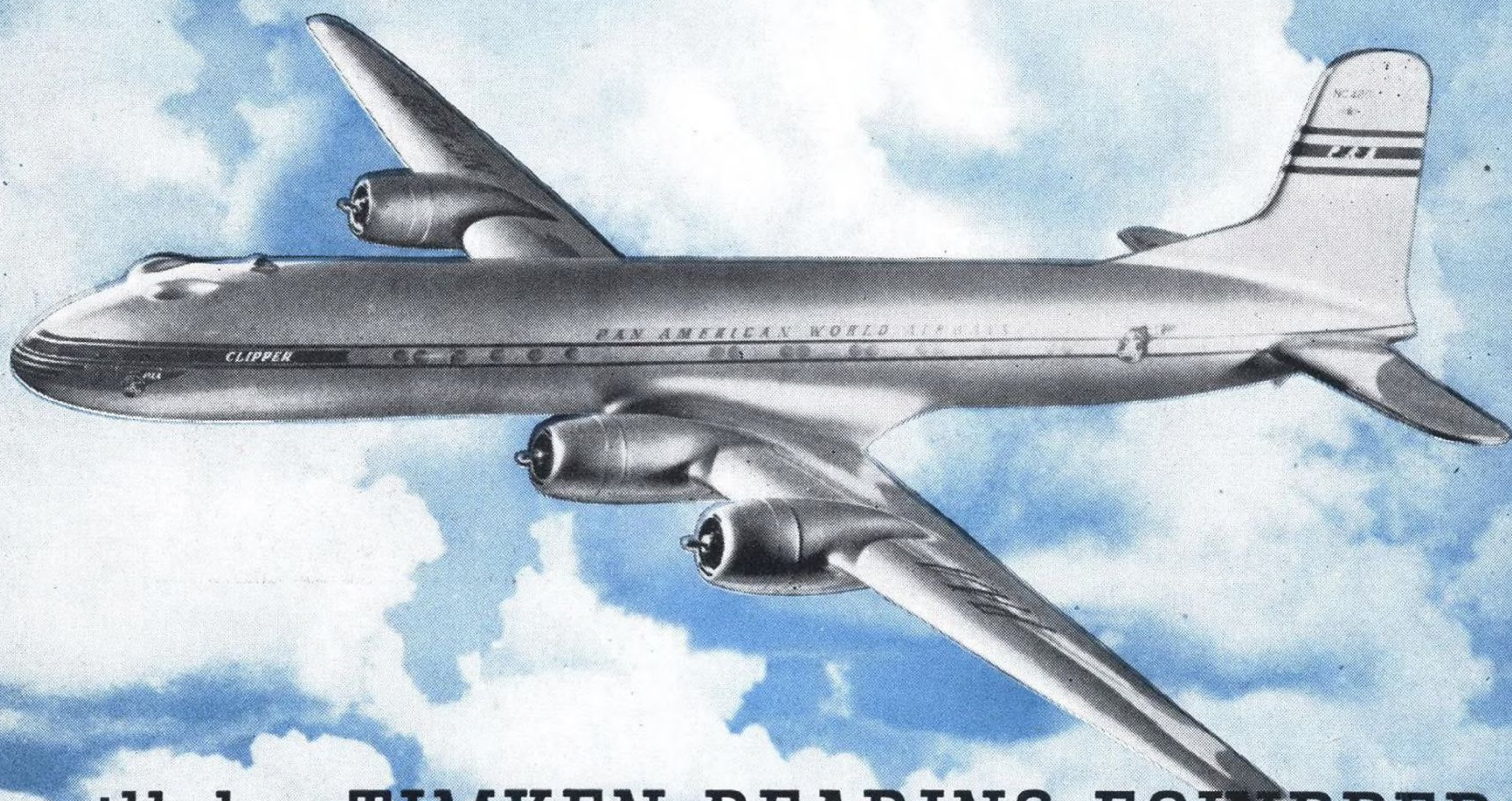


ENGINEERING
B&W
PRODUCTION

HYDRAULIC, VACUUM AND FUEL PUMPS
CARBURETORS • REDUCTION AND PROPELLER GEARS
ENGINE PARTS • UNIVERSAL JOINTS
AIRCRAFT CONTROL CHAINS • AIRCRAFT CLUTCHES
POWER TURRETS • OIL COOLERS
COIL SPRINGS AND FLAT SPRINGS
HELICOPTER TRANSMISSIONS

Peacetime makers of essential operating parts for the automotive, aviation, marine and farm implement industries, and of Norge home appliances . . . these units which form the Borg-Warner Corporation are today devoted exclusively to the needs of war: **BORG & BECK • BORG-WARNER INTERNATIONAL • BORG WARNER SERVICE PARTS • B-W SUPERCHARGERS, INC. • CALUMET STEEL • DETROIT GEAR • DETROIT VAPOR STOVE • INGERSOLL STEEL & DISC • LONG MANUFACTURING • MARBON • MARVEL-SCHLEBLER CARBURETOR • MECHANICS UNIVERSAL JOINT • MORSE CHAIN • NORGE • NORGE MACHINE PRODUCTS • PESCO PRODUCTS • ROCKFORD CLUTCH • SPRING DIVISION • WARNER AUTOMOTIVE PARTS • WARNER GEAR**

Tomorrow's Clippers



will be TIMKEN-BEARING-EQUIPPED

Pan American DC-7 Clipper by Douglas.

Tomorrow, as today, Douglas-built Clippers will fly Pan American World Airways' routes equipped with Timken Bearings. The proposed giant DC-7 substratosphere Clipper shown above may well have them doing matchless service in its wheels, rocker arms, carburetors . . .

Planned to carry 108 passengers and a crew of 13 swiftly and economically on South American routes, this mammoth airliner will have the strength, compactness, light weight and freedom from friction that are

just a few features of Timken Bearings for aircraft. Others equally important are maximum radial and thrust load carrying capacity, economy of maintenance, and power conservation.

If these indispensable bearing features can help meet your aircraft requirements, write us. We'll be glad to make specific recommendations. The Timken Roller Bearing Company, Canton 6, Ohio.

"Be sure the trade-mark 'TIMKEN' is stamped on every bearing you use."

TIMKEN
TRADE-MARK REG. U. S. PAT. OFF.
TAPERED ROLLER BEARINGS