

# Aviation News

McGRAW-HILL PUBLISHING COMPANY, INC.

FEBRUARY 7, 1944

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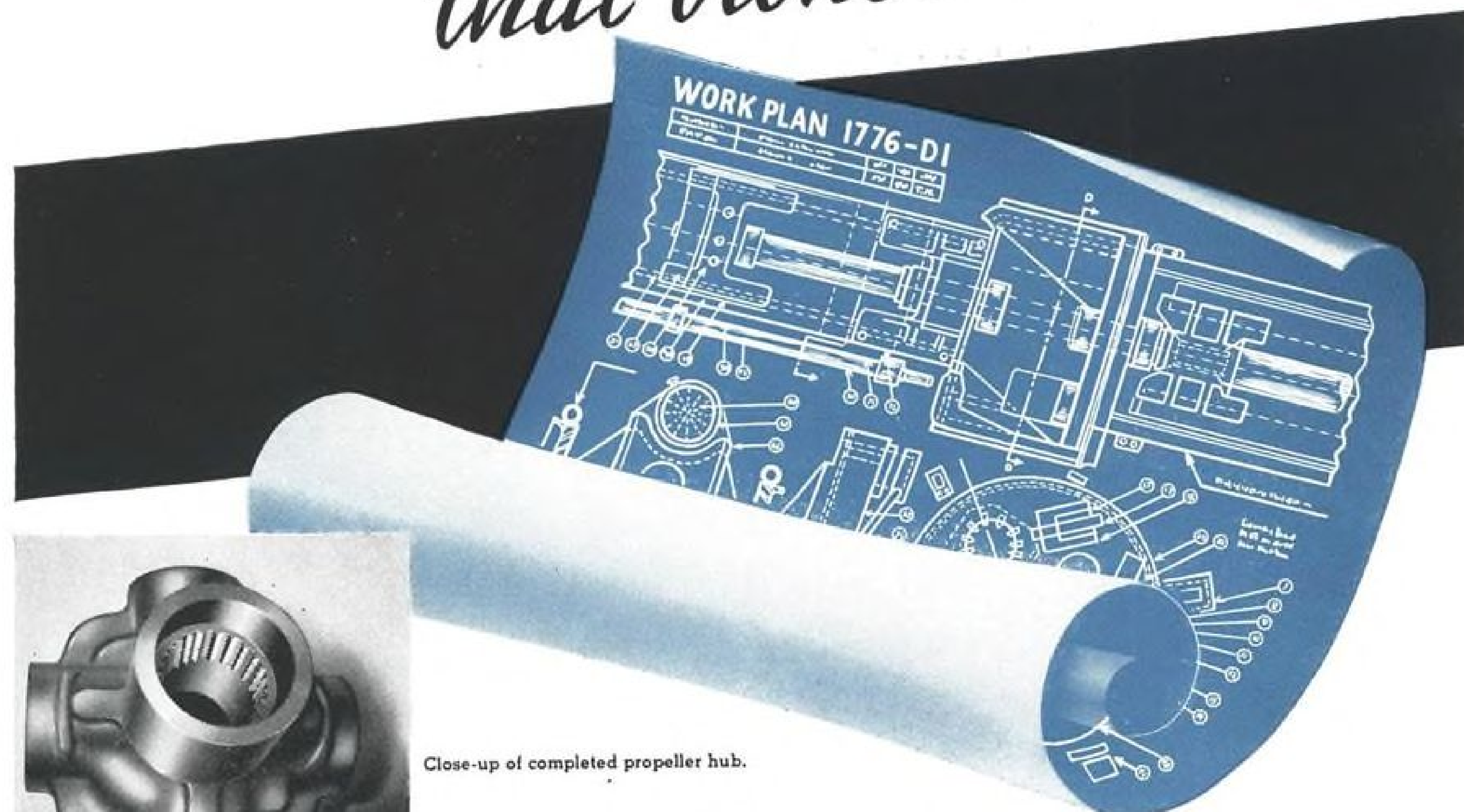
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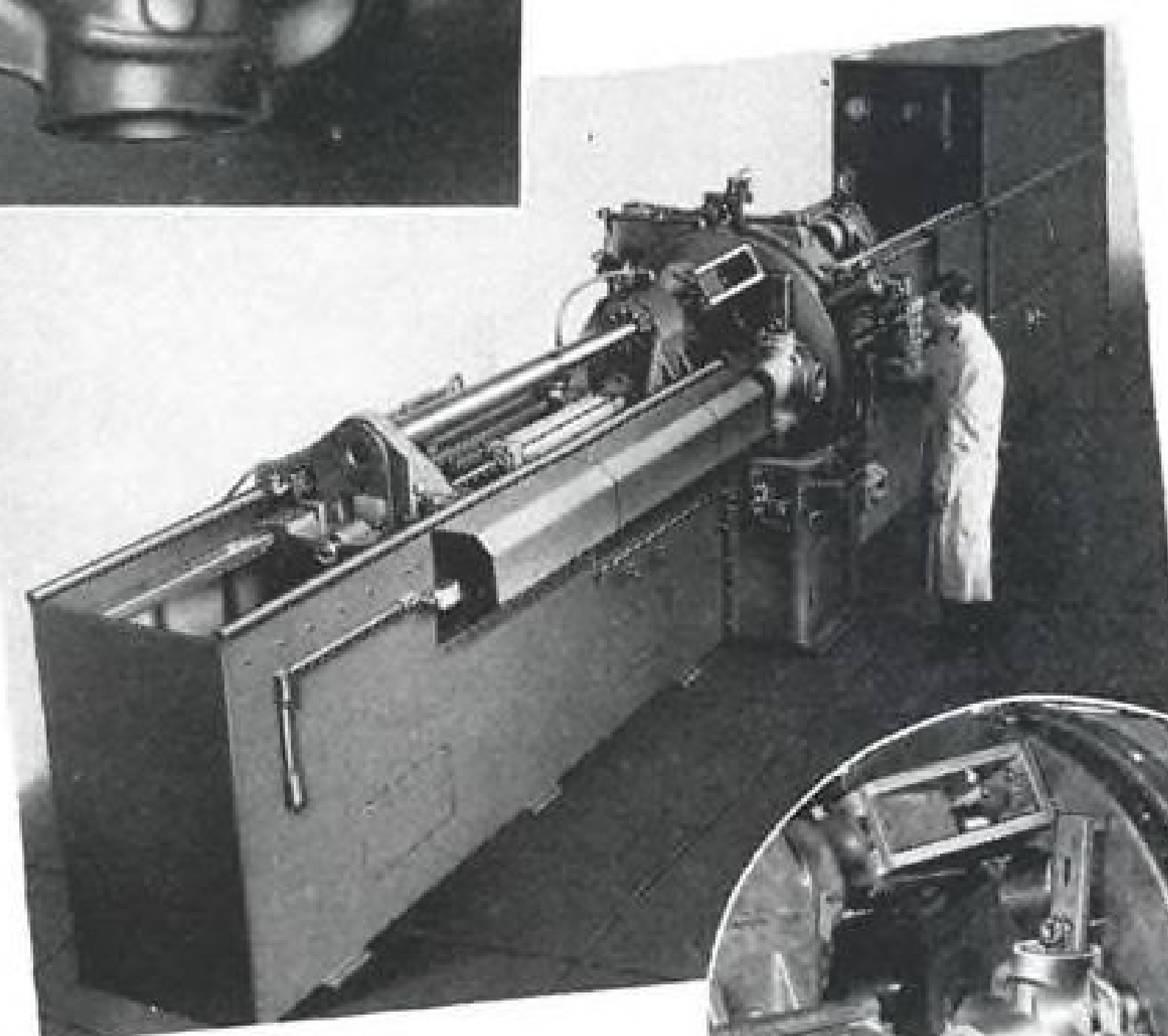
**Directs AAF Training:** Lieut. Gen. B. K. Yount, commanding general of the Training Command, providing airmen for the world's greatest air force in a program of such scope and complexity and volume as to overshadow the largest of the great business corporations. Over 100,000 pilots have been graduated from the command's schools.



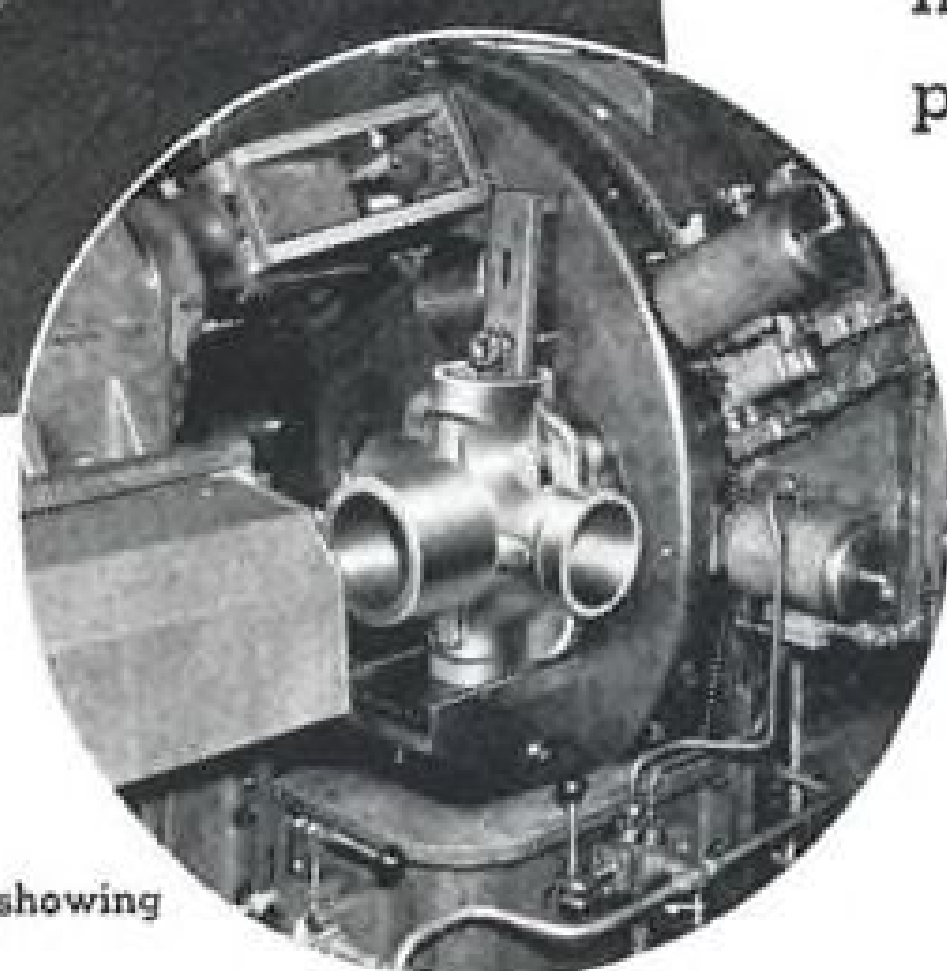
# THE PIECE OF PAPER that broke a bottleneck



Close-up of completed propeller hub.



The Lapointe HP-150 which broaches 2 propeller hubs at one time.



Close-up of loading position showing automatic fixture.

"Work plan — 1776-D1" was the appropriate nomenclature for the machine and broaches which today are making production figures unbelievable a few short months ago. They are the chief bottleneck breakers in putting out spline propeller hubs for a new type aircraft propeller. Made of especially hard steel, these new propellers could be turned out in mass production with the precision tolerances desired only by broaching. Exact production figures are a secret but hub splining is no longer the bottleneck.

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

THE AVIATION NEWS

Washington Observer

**SUPER-SECRET "SUPERFORTRESS"** — It was not a unique position in which American newsmen found themselves when copies of the British magazine "Flight" arrived here carrying details of the B-29 "Superfortress," restricted information in this country. Such situations have developed before and probably will again before the war's end, but that doesn't make them any more pleasant. The AAF has said little about the B-29 other than that it does exist, that it has a name and that it dwarfs our present four-engine bombers. Regarding the story in "Flight," the AAF has noted it, but is not saying whether the detailed data are right or wrong and AAF review is not passing any B-29 specifications. Our Allies seem to be the best source for information on our new equipment.

★

**VIZ—THE B-29**—It should be no comfort to the enemy to know that the B-29, according to *Flight*, can carry 16,500 to 17,500 pounds of bombs for 1,000-mile range or 6,000 pounds for a 3,000-mile range—figures looked upon here with some doubt. The wing span is listed at 141 feet, compared with 100 feet on the *Fortress*, and the weight at between 100,000 and 120,000 pounds as against about 60,000 for the B-17. *Flight* says the B-29 is powered by Wright 2,000 hp. engines and three-bladed propellers and that it retains the general features of the B-17, but has double tires on each wheel of its tricycle landing gear. Side turrets operated by remote control are said to have replaced the *Fortress* waist positions. Heavily armored, of course, the B-29 is said to have a chin turret, dorsal, ball and tail turrets. It sounds like good news for our side and bad news for the Axis.

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**KAISER-HUGHES CONTRACT**—All indications late last week pointed to cancellation of the Kaiser-Hughes giant cargo plane project soon. It is understood that a report prepared by WPB's aircraft consultant, Grover Loening, makes clear that neither of the two flying models under contract can fly for many months, and that production could not be undertaken for some months more. One of the three planes authorized under the contract was to be built for static tests only. The report was requested by top WPB authorities in connection with the utilization of manpower and materials which might be devoted to combat craft now flying instead of to experimental cargo planes.

**NEW NAVY LIBERATOR**—While it has been known for some time that the familiar twin tail which identifies Consolidated's *Liberator* bomber was to be replaced by a single-tail on the new Navy version, photographs had been forbidden until the Navy approved picturization of a desk-model, shown here. The single tail



changes the identity of the airplane, somewhat, although the engine mounts and nose remain strictly *Liberator*. Some design changes and improvements have been made and it appears that the length of the plane has been somewhat increased. Built to exact scale are the models of Convair planes turned out by assembly line methods in the model shop. Dies and molds—miniature counterparts of the tools used in producing the actual planes—turn out the fuselages and motor sections and other parts of such desk-size models as this PB4Y2.

★ ★ ★

**GAS TAX FOR AIR FIELDS**—There is talk in some state legislatures of utilizing taxes from the sale of gasoline for aviation purposes for improving airways and airports. Some enthusiastic legislators even go so far as to envision a chain of state-operated airports, claiming that revenue from such a source could support such a set-up. Taxes on automobile motor fuel have long been used in many states for highway construction and improvement and, taking this as a cue, aviation-minded legislators believe it could be applied to airports and landing strips.



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## AVIATION NEWS

February 7, 1944

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BLAINE STUBBLEFIELD, Special Assignments	
SCHOLER BANGS.....	Pacific Coast Editor
ALEXANDER MCSURELY.....	Mid-West Editor
DALLAS MALLARD.....	Art Director

Publication and Executive Offices,  
330 W. 42nd St., N. Y. 18, N. Y.

Editorial Headquarters,  
1252 National Press Building,  
Washington, D. C.

Mid-West Office, 955 Reibold Bldg., Dayton, O.  
Pacific Coast Office, 601 W. 5th St., Los Angeles

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THE WIND BLOWS EASTWARD—Although it is still the strategy of the United Nations to whip Germany first, there are numerous incidents which draw attention to the Pacific. It is no secret that a substantial amount of Britain's war effort has been switched to the East and still more important switches are under way. The announcement that airmen of the British Fleet Air Arm are training with Americans in the United States for the action in the Pacific is only one of the weather-vanes showing how the wind is blowing. The release of reports of the revolting Jap atrocities on Bataan and elsewhere is another.

SHIFT IN POST-WAR THINKING—Some of the 16 domestic airlines which joined in a declaration of policy in favor of post-war competition in international air transportation may be leaving the fold, if new reports of a shift in thinking on this question prove correct. While they may not actually withdraw from membership in the Airlines Committee for United States Air Policy, some sources are saying that a study of this problem has turned up new factors which may call for a reconsideration.

COMPLETE COVERAGE—The Navy doesn't often go in for gags but this montage, like all Official Navy Photographs, executed by "Photographer Anonymous, Second Class," shows how Navy photographers get complete coverage. This was a card sent out by Utility Squad-



ron 7, San Diego, and symbolizes (with a few liberties) the indefatigable Navy photographer, who has covered the war from Pearl Harbor through the battles of the Coral Sea, Midway, the Solomons, Aleutians, West Africa, etc., as well as the activities of countless shore stations and outlying bases.

LONG-TERM INVASION—A high government official speaking to several friends, gave

## Washington Observer

his hearers a new light on the possible magnitude of our impending military operations in Europe. It shows how our Army and Navy top-command must look at this war. The official had been asked why so many landing craft are being built, many of which probably won't be ready until after the invasion starts. "Suppose," the official asked, "that invasion takes five years?"

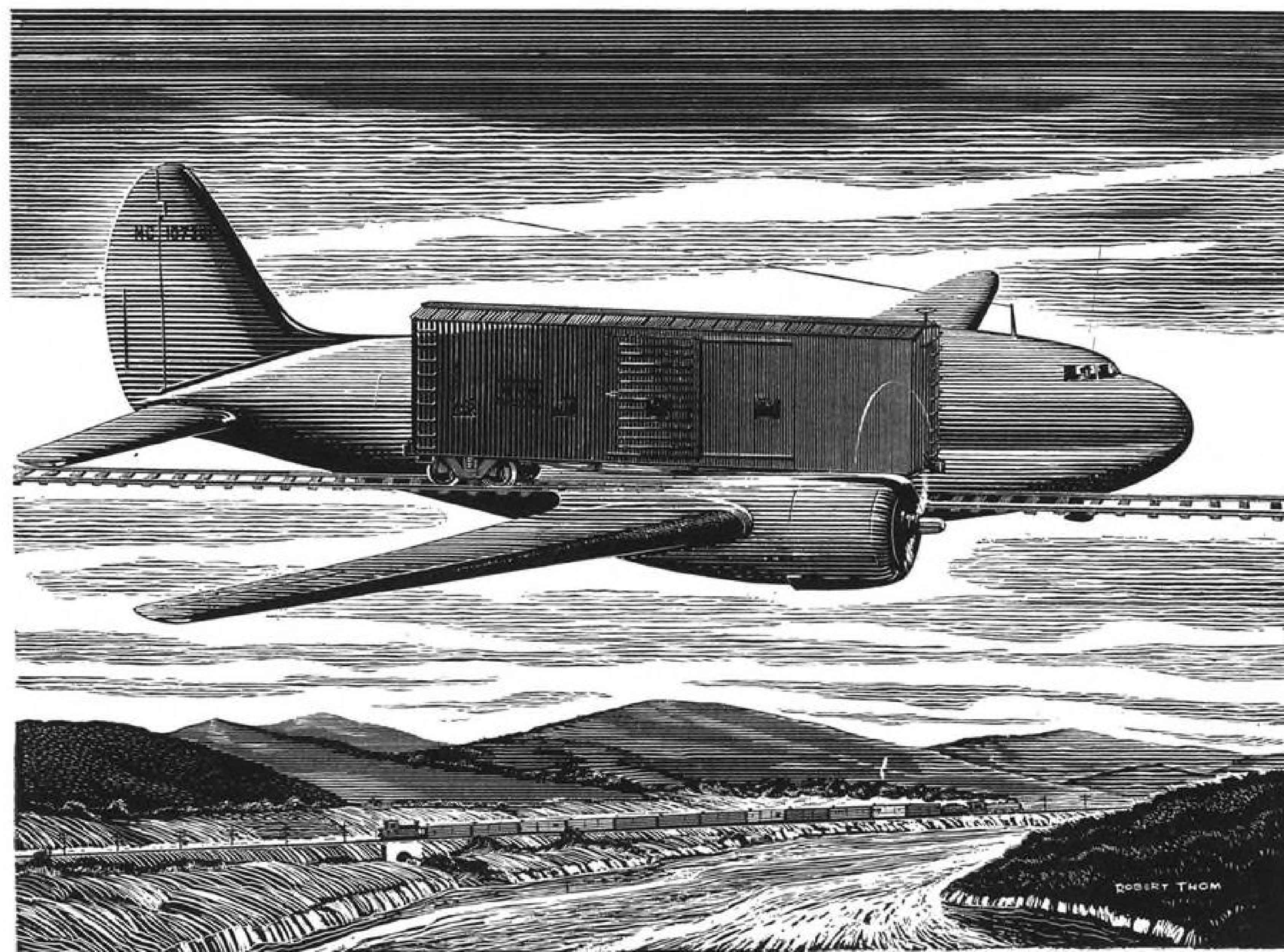
ELECTRONICS FUTURE—WPB officials believe the public will gain more benefit, and quicker, from wartime developments in electronics than from any other technical field. Conversion of the industry should move along rapidly. Every home eventually will enjoy its advantages. Aircraft instrument landing systems and instrument flying (radar) equipment will be outstanding aviation aids.

BEARINGS STILL TIGHT—One of the toughest material problems WPB has to deal with currently is ball bearings, which are scarce. Efforts have been made to stop everything else in the regions of bearing plants and there are still shortages—and, paradoxically, unemployment. Wages are involved and complex labor relations, but WPB says the problem will be solved. Materials, generally, however, are in good shape. Steel plate is somewhat short on account of requirements for landing craft. There is said to be an excess of copper at the moment, but it cannot be released until the war's end is in plain sight.

MANPOWER NEEDS—The simple and factual question as to what the manpower needs of the nation will be for the next six months has been answered clearly and definitely by WMC's Paul McNutt. By next July, he says, the labor force of the nation will reach 65.7 million—a net gain of 900,000 in the current year. Most of that increase, however, is in the armed forces, which puts a greater burden on the civilian population. Recruitment was easy when civilian industries were closing down for lack of materials and it was easy when people were unemployed and there were foot-loose people in homes. Now the problem is tougher and it means scraping the bottom of the barrel.

CUTBACK FALLACY—Some loose discussion of contract changes has resulted in fallacious conclusions on cutbacks—particularly if a plant or a community has an axe to grind. Contracts have been canceled of course, but an example of the actual situation is seen in a situation of a few weeks ago when the procurement agencies advised of reductions which totaled nearly 150,000 workers. Those cutbacks were widely publicized. At the same time there were unfilled needs for 500,000 for the same period.





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## Training Command Bares Scope Of Pilot School Operations

More than 100,000 graduated from AAF's nationwide network of flying and technical schools from Jan. 1, 1939, to Nov. 30, 1943, Training Command reveals.

Daily accomplishments of the Army Air Forces in combat overshadow in dramatics, but not in importance, the complex individual training required to produce the manpower for this, the world's greatest air force, which now has in excess of 2,300,000 officers and enlisted men.

Lt. Gen. B. K. Yount is Commanding General of the AAF Training Command and Brig. Gen. R. W. Harper is assistant chief of Air Staff.

From Jan. 1, 1939, to Nov. 30, 1943, the Army Air Forces has graduated from its nationwide network of flying and technical schools 100,799 pilots, all qualified as fighter or bomber combat flyers except 3,491 glider pilots, 2,348 liaison and 444 women pilots.

► **Others Trained** — In addition, these schools have turned out 20,086 bombardiers, 18,905 navigators, 107,218 aerial flexible gunners, and 555,891 ground and air combat crew technicians.

These technicians are those who have been graduated from basic courses only and the figure does not reveal the total number of technicians produced nor does it give a true picture of the extensive technical training given. For example, it includes 240,360 airplane mechanics, 100,339 radio operator mechanics, 70,165 armorers, 46,052 clerks, and 98,974 specialists of a miscellaneous nature covering about 25 different categories, including sheet metal workers, parachute riggers, welders, instrument men, link trainer operators, cryptographers, photographers and photo technicians, tire rebuilders and special purpose motor vehicle maintenance men.

► **Double in Lead**—In addition to the well over a half million basic technical course graduates, 64,230

were graduated from officers' courses, 114,082 from factory courses and 52,196 from advanced courses.

Because most gunners on heavy and medium bombers, double in lead, as it were, a high percentage of the 107,218 graduates of the flexible gunnery courses also had completed the basic technical courses in mechanics, radio or armament.

► **Five Courses Studied**—The complexity of the training is further indicated by the fact that a technician in training for specialized duty with the new Superfortress must complete five different courses before joining his combat crew, including a basic mechanic's

course, advanced courses as an electrical specialist, advanced courses in mechanics and electricity at the factory in which the bomber is made, and finally, a course for armorers.

An indication of the gigantic nature of the job is seen when it is compared with the 1939 graduates, which numbered only 696 pilots from two schools.

► **Covers Wide Field**—The Training Command now, from the standpoint of territory covered, personnel employed, administered and trained, equipment operated and facilities owned, overshadows the largest of the world's great business corporations.

It operates installations of one kind or another in all 48 states—a total of 455—and individuals under training command jurisdiction as of Nov. 30, last, totaled 1,020,777. Approximately 29,000 training planes of all types were in use in the command at the end of 1943 and during the eleven months ending last Nov. 30, Training Command students flew an average of 25,600 hours per fatal accident.



### NAVY CHIEFS SEE RYAN'S NEW PLANE:

Left to right are Ben T. Salmon, Ryan chief engineer; Rear Admiral D. C. Ramsey, chief of the U. S. Navy Bureau of Aeronautics; Artemus L. Gates, Assistant Secretary of Navy for Air; and T. Claude Ryan, president of Ryan Aircraft Corp., as they watched construction in San Diego last week of a new secret warplane built by Ryan. Many officials say it will be months before further publicity will be permitted. Rumors include talk of a jet propulsion craft.



# Competition War Between U.S., British Plane Designers Looms

West Coast aviation industry leaders forecast stiff battle for commercial air supremacy; England's policy of revealing plans for huge transports studied.

By SCHOLER BANGS

Casual inquiry within the West Coast aircraft industry discloses the conviction, in authoritative circles, that a crucial battle of wits is brewing between British and American airplane designers.

That Britain and America will be in stiff post-war competition for commercial air supremacy and attending international prestige is a conclusion that only time will prove.

► **Smoke Screen**—However, among western aircraft experts are those who are convinced that:

► Britain's apparent willingness to allow publication of post-war airplane designs is a smoke screen that fools no one among American engineering circles.

► Ultimate designs of American post-war planes and engines will be guarded as jealously as military secrets, if not more so, until they

have reached the actual flight stage.

They believe Britain has under wraps other post-war designs while parading in print sketches such as those of the proposed 130,000-lb. Miles "X" submitted to the British Ministry of Aircraft Production.

While holding to this conviction, they confess they do not know whether Britain's post-war airliners finally will appear as larger or smaller types. They believe, though, that they will be excellent in design and economy, and probably able to compete with the best this nation will produce.

► **Mum on Jet Propulsion**—It is expected on the West Coast that the present military hush on details of jet propulsion will extend well into the post-war period for reasons of commercial security, and that manufacturers and their research

engineers will be equally reticent in discussing the commercial possibilities of supersonic flight.

► **LIGHT PLANE OUTLOOK:** In southern California automobile dealers are studying the possibilities of post-war light plane franchises. They believe the Southwest will be the biggest market for family flyabouts and base expectations of successful sales on their automobile selling experience.

"Steady customers" of Los Angeles automobile dealers prior to the war seldom kept their cars long. Yearly trade-ins helped boom western new car sales. Western car owners were in sharp contrast with east coast buyers, who would keep an automobile for from six to twelve years before buying a new one.

► **LABOR RELATIONS:** A potential influence in development of labor relations policies in the West Coast aircraft industry is the offering by Morris B. Pendleton, vice-chairman of the Los Angeles Citizens Manpower Committee, of a "Ten Commandments" suggestion:

Maintain fair pay for services rendered. Afford each employee opportunity to advance within the company. Fill vacancies by promotions, if present employees are qualified. Provide safe, healthful and harmonious working conditions. Assure each employee the

right to discuss freely with executives any matter concerning his own or the company's welfare. Treat all employees fairly and without discrimination. Live up to the spirit—as well as the letter—of all agreements with labor organizations and promote a better mutual understanding and relationship by fair and considerate dealings with their representatives. Carry on daily work in a spirit of friendliness and cooperation. Do all within power to make the company a satisfactory place in which to work, and a pride to the community.

Complete unionization of all major West Coast aircraft factories—with Douglas plants the scene of final labor unionization balloting—offers a prime test of the "commandments." A delicate balance of employee good will, the objective of the "commandments," exists in the possibility that plants well supplied with labor may withdraw various employee benefits that formerly induced workers to be content without union representation. Some plants may, without injustice, suggest that the unions assume responsibility for continuation of those benefits.

## FEDERAL DIGEST

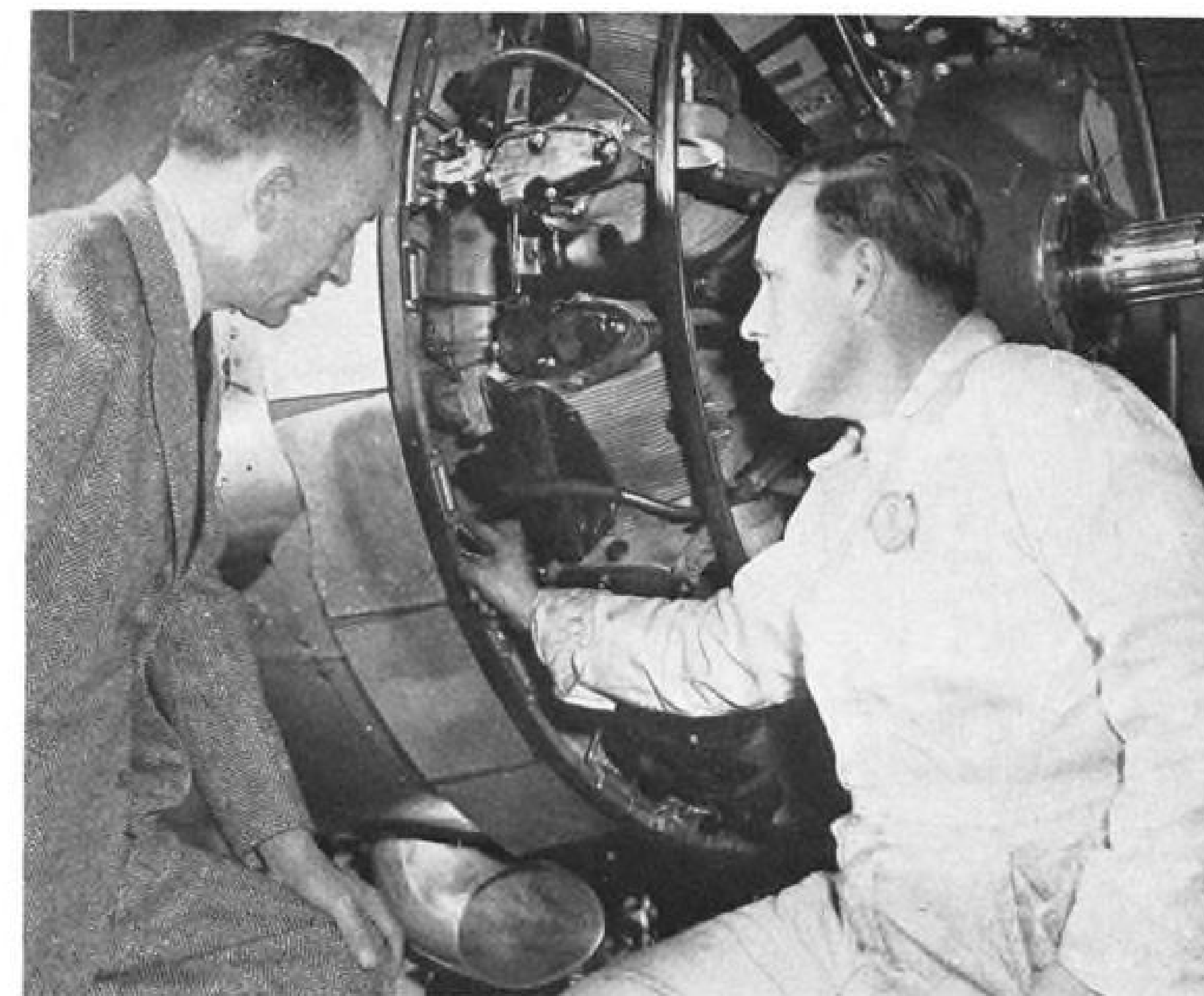
### Parts Pool Formed For AAF and RCAF

Summary of week's activities in U. S. and war agencies.

A joint supply pool to speed equipment and parts to RCAF antisubmarine bases and to equip American troops stationed in Canada has been set up under operation of the U. S. Army Air Service Command, the War Dept. announced.

The new system of joint supply shortens the arrival time of spare parts at Canadian antisubmarine control bases making equipment necessary to keep planes in the air over the North Atlantic available to the RCAF. In addition, it eliminates such difficulties as flying supplies under abnormal weather conditions and duplicating requisitioned spare parts.

► **Motion Pictures**—A motion picture branch has been set up in the Industrial Services Division of the War Department to increase distribution of films that show the American worker the course of the war and the workers' part in it. The branch will have offices at



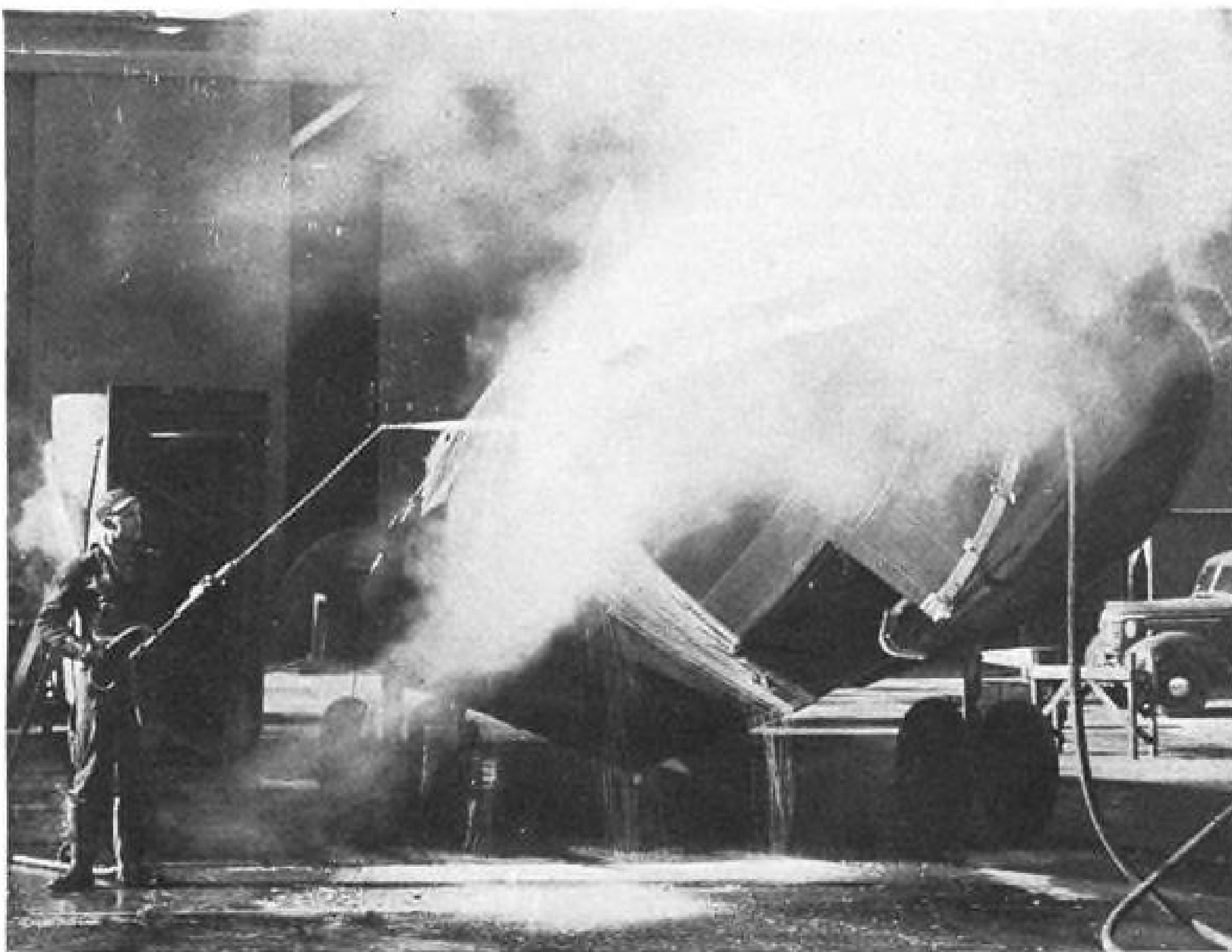
### TWA'S NEW TYPE BUSHING FOR COWL FLAPS:

Transcontinental & Western Air is replacing metal bushings on engine cowl flap assemblies with rubber bushings developed by Ian H. Easterwood (right), TWA mechanic at Kansas City. William Maxfield (left), superintendent of maintenance, describes the idea as "the greatest single economical suggestion ever made by a TWA employee."



### CONVAIR TESTS HULLS OF FLYING BOATS:

Thousands of gallons of water are pumped into the six massive compartments of Consolidated Vultee Aircraft Corp. Coronado flying boats to test absolute watertightness up to the level of maximum load waterline. Note jacks and wood contour braces hold-



ing the hull firm against warping and bulging under pressure of the internal load. Convair Catalinas, on the other hand, are spray tested with a high pressure hose battering all hull seams. Photographs were taken at Consolidated Vultee's San Diego plants.

1501 Broadway, New York. A. L. Mayer is civilian consultant.

► **War Production Board**—WPB and Dept. of Labor have opened a drive to reduce industrial accidents which killed 18,400 workers in 1943 and caused loss of 56,800 man-days. The Industrial Health and Safety Section of WPB's Office of Labor Production will direct the campaign.

Chairman Donald Nelson has announced appointment of Lewis S. Greenleaf, Jr., as Director of the New York regional office of WPB. Harcourt Amory has been named Deputy vice-chairman of WPB for Field Operations.

► **Construction**—Total volume of construction activity in the U. S. in November was \$401,298,000, the Board said. This is 13 percent less than in October, and 2 percent under the November schedule.

More than 34 billion board feet of lumber will be needed to meet the war requirements of the nation in 1944, according to J. Philip Boyd, director of WPB's Lumber and Lumber Products division. Construction for the Army, Navy, Maritime Commission and Air Corps alone will utilize 5 billion board feet.

► **Conservation**—The eleventh "Ma-

terial Substitutions and Supply List" has been issued by WPB's Conservation division. This official list carries some 450 materials needed in the war effort, arranged in groups, showing those whose supply is insufficient for essential needs, those in approximate balance, and those in excess of essential requirements.

The report shows an easing of copper and steel while chemicals and plastics are somewhat tighter than on the previous listings. The list may be obtained from the Editor, Conservation division, Room 2616 Tempo "D," Washington 25, D. C.

► **Office of Price Administration**—A number of changes have been made in mill ceiling prices for Southern pine lumber in order to permit production of types of material needed in the war program.

Passenger car tire rationing program has been shifted from a "mileage" to an "occupational" basis. Hereafter, eligibility will be determined by the purpose for which a person drives his automobile rather than the distances he drives in a given month. After Feb. 1, any person who drives his car in connection with a highly essential occupation, regardless of his



gasoline ration, may apply for a Grade I tire.

► **Price Reports Eased**—OPA says manufacturers of certain rubber commodities purchased for Government use need no longer file maximum price reports in connection with experimental production and small orders. Parachute parts and equipment are included in the

commodities to which OPA referred. The amendment requires manufacturers affected to make reports of maximum prices when orders have been received for more than one unit and total sales reach \$1,000.

► **PAW**—Higher relative priority ratings have been given to refining of 80-octane all-purpose military

gasoline and 73-octane aviation gasoline by Petroleum Administrator for War Ickes. PAW said the 73-octane aviation gasoline is used primarily in training planes. In the relative priority groupings, these two important military petroleum products have moved from Group III to Group II, second preference and critical.

► **Defense Plant Corp.**—Packard Motor Car Co., Detroit, has increased its contract with Defense Plant Corp., to provide additional equipment at a Detroit plant to cost \$120,000, resulting in an overall commitment of approximately \$2,650,000.

DPC announces an increase in its contract with Republic Aviation Corp., Farmingdale, Long Island, to provide additional plant facilities at Farmingdale to cost \$150,000, resulting in an overall commitment of \$18,000,000.

The Budd Wheel Co., Detroit, Mich., has increased its Defense Plant Corp. contract to provide equipment and machinery at a plant in Detroit approximately \$60,000.

## Chambe Simula'es 80,000-ft. Altitude

Convair laboratory drops temperature to 100 below zero to study flight conditions.

A massive ten-ton altichamber now in use at Consolidated Vultee Aircraft Corp., San Diego, simulates flight conditions—even fog—as high as 42,000 feet for people and 15 miles for materials.

Through its system of vacuum pumps, refrigerator units, pipes and valves, flight conditions at all levels and in all weather situations can be simulated exactly within the big cylinder in a matter of minutes. One valve will vary atmospheric conditions from sea level to 80,000 feet. Another will drop the temperature to as low as —100 degrees F.

► **Heavily Insulated**—The altichamber is 23 feet long and 9 feet in diameter, with steel welded walls, insulated with nine inches of cork outside and three inches inside. It is used for testing and training flying personnel in use of high altitude flying equipment, provides facilities for carefully controlled aero-medical research and also is used in the testing of materials, equipment and instruments under the same pressure and temperature

conditions that are encountered in actual flight.

Regular phonographic recording equipment registers every word that is spoken during tests in the altichamber.

► **Verbal Record**—Engineer Philip Shaw explained it is to provide a verbal record of anything that might go wrong. Such a record can be used in ascertaining difficulties encountered.

Immediately after each test, the men involved listen to a playback of the recording made while they were in the altichamber. Shaw, who is in charge of the chamber, as a member of the test laboratories, participated in the design and building of the equipment. Dell Fuller is his assistant.

Aero-medical research at Convair was opened by Dr. H. F. Helmholtz, Jr., and recently Dr. A. Randolph Sweeney has become associated with the laboratory. Both men went to Consolidated Vultee from the Mayo Aero Medical Unit, a pioneer group in aeromedical research.

Another member of the group is Marjorie Remmer, a veteran of more than 300 "flights" in the chamber, and paradoxically enough, she has done almost no flying in airplanes.

Miss Remmer is one of the few women in the country engaged in high altitude investigation.

## Weight Output Up

Aircraft industry production men in preliminary estimates of January plane output set the total at slightly under December's 8,802 in units, although indications are that the total weight for the month—the only exact yardstick—will show an increase.

The emphasis on the heavy bomber program is pointed up in the January production with both the *Liberator* and *Flying Fortresses* total called excellent, in addition to stepped up output of *Superfortresses*.

Officials of the War Production Board have said repeatedly that unit production will not show gains and that the emphasis will be on poundage. The so-called "numbers racket" in aircraft production—unit output—does not give a true picture of the industry's effort and government and military men are endeavoring to correct the situation in cooperation with the industry.

# Disposal of Vast U. S. Holdings Vital Factor in Post-War Aviation

Industry closely following proposed formulas for reconversion of plants to peacetime basis.

Most important single phase of the broad subject of reconversion—certainly so far as the aircraft industry is concerned—is the pattern for disposing of the vast government holdings in American industry.

When the moment comes for the government to get out of the various businesses into which it was forced by the war, the industries will be faced with a tremendous plant expansion, disposition of which could easily mean life or death to any company.

► **WPB Reports**—The War Production Board has reported that at the end of November, 1943, the last month for which figures had been computed, the total value of war industrial facilities financed by the government was \$14,860,529,000. Of this, facilities valued at \$13,529,599,000 had already been put in place.

The extent that the government has surpassed private industry in constructing facilities is indicated in WPB's report of the value of privately financed industrial expansion as measured by estimated cost of 15,860 certificates of necessity approved as of Nov. 30, 1943. While the government has scheduled facilities having a value of \$14,860,529,000, private expansion has totaled only \$4,918,000,000.

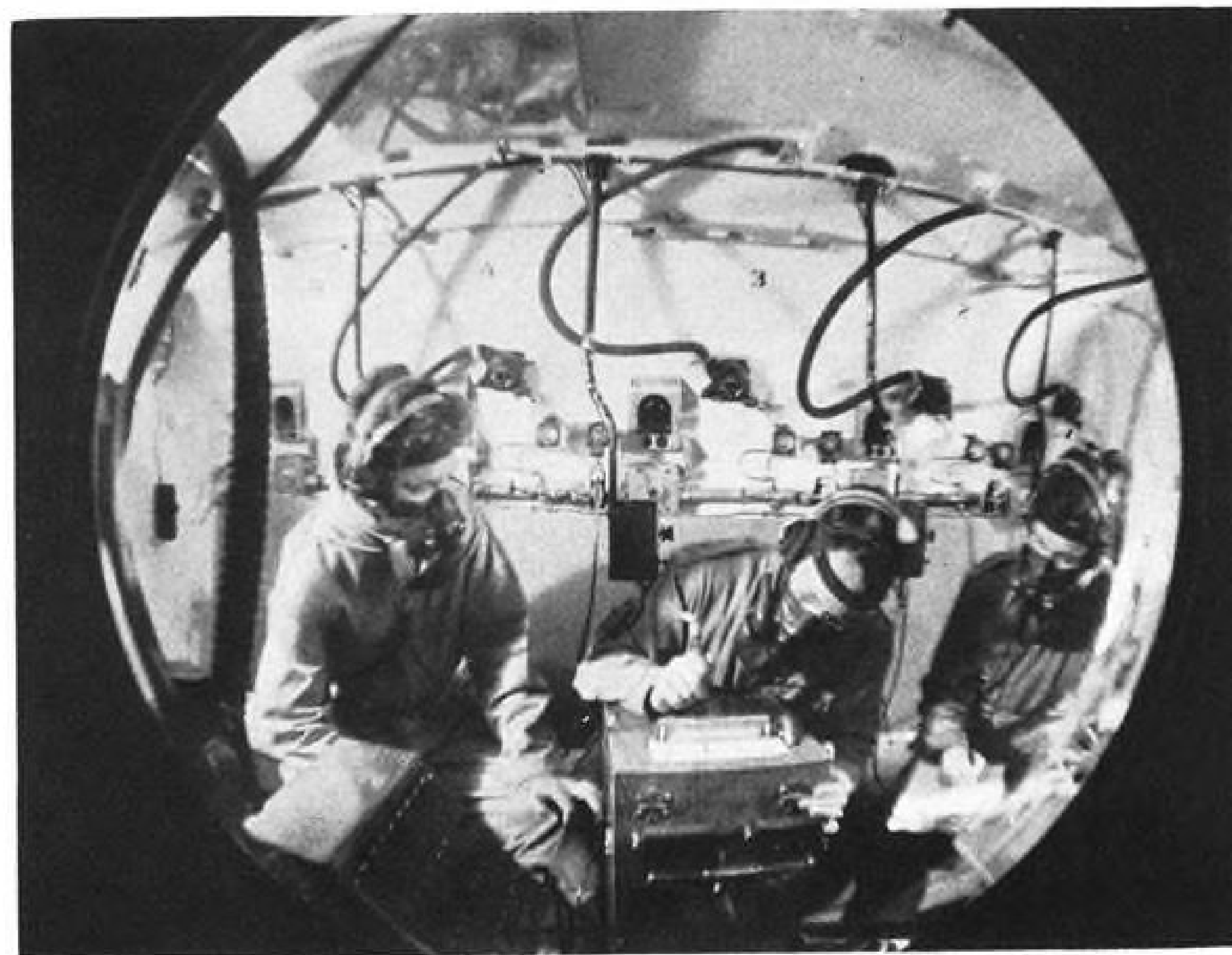
► **Aircraft Facilities Second**—Government-financed aircraft facilities scheduled as of Nov. 30, 1943, totaled approximately \$3,148,000,000, of which about \$2,635,000,000 was actually in place. Of the amount scheduled, roughly \$1,962,000,000 was for machinery and equipment while the remaining \$1,186,000,000 went for construction.

The fact that aircraft facilities rank second in a listing of the ten major industrial categories in which the government has interests is all the more reason why the aircraft industry should be concerned with disposal plans. When the day for disposal arrives, based on present volume, only ordnance plants will exceed aircraft in value.

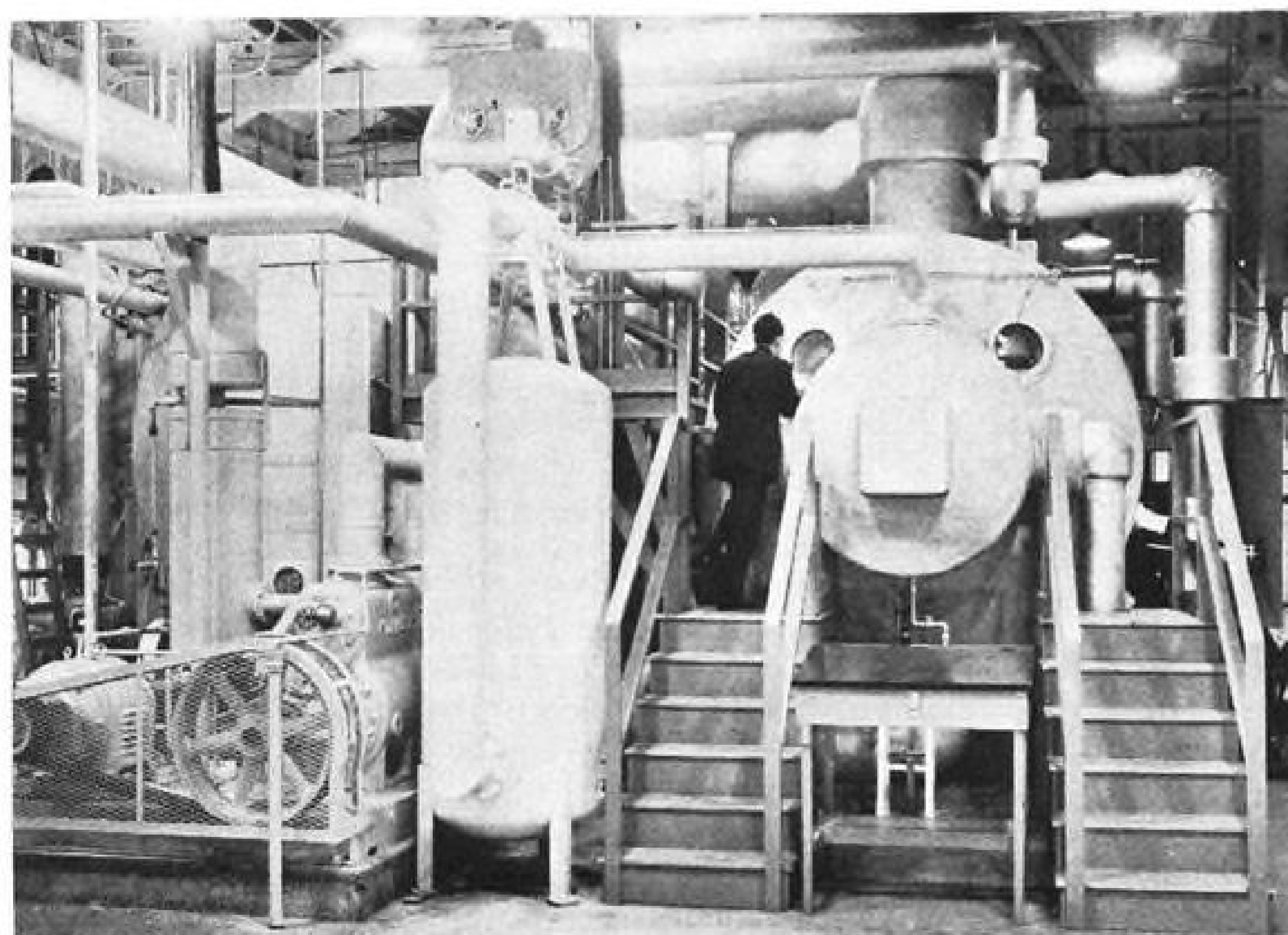
► **Military Secret**—How the aircraft plants are divided by agency is still a military secret so far as any

formal announcement is concerned, although it is generally known that Army Air Force plants far exceed those of the Navy Bureau of Aeronautics in value.

How much 1944 will add to the aircraft industry is also an unknown factor, but it has been announced that new authorizations



**Convair Tests Altitude Chamber:** The huge ten-ton altichamber at Consolidated Vultee's San Diego plant can vary atmospheric pressures from sea level to 80,000 feet and drop temperatures as low as —100 degrees F. Shown above is a periscope view of the interior of the chamber as seen from the operator's table located outside, enabling observation of the movements of all personnel during a "flight." Other view shows Dr. A. R. Sweeney, assistant flight surgeon, observing a test through a heavy glass port. This is a rear view of the altichamber showing the relative size of its companion freezing chamber and a portion of the compressing equipment.



## UPENDED FUSELAGE:

*Fairchild Engine and Airplane Corp. plant at Burlington, turning out this Fairchild Gunner, utilized this striking method of working on the forward end of the rear section of the fuselage.*

for plant expansion are becoming effective and that there will be substantial activity at least during the first quarter. The value of construction and machinery and equipment combined in the aircraft category declined consistently during each of the four quarters of



1943, with the rates approximating \$338,000,000, \$306,000,000, \$209,000,000, and \$155,000,000.

► **Questions**—At any rate, there is already a tremendous aircraft plant owned by the government, and it is getting larger every day. Among questions to be decided before disposal begins are these fundamentals:

Will the plants be disposed of in such a way as to encourage post-war competition within industry?

Will facilities be disposed of to smaller plants and thus put them in a position to compete with large companies?

Will the large producers be made larger, thus squeezing the smaller companies out? In addition to these questions, there will be others growing out of the disposition of aircraft component plants and aircraft armament and munitions plants. Since many of the latter type will have a gloomy post-war outlook, an entirely different pattern of treatment may be needed in their disposal.

One thing seems certain and that is that the aircraft industry will be treated with the same formula devised for all industry. With a problem so staggering, it would be impossible for each industry to be dealt with individually.

► **Senate Group to Report**—Some light probably will be thrown on the disposal picture this week when the Senate's Special Committee on Post-war Economic Planning and Policy Committee issues its report. This report, which is expected to contain the framework for legislation on the subject of disposal, will deal with all aspects of industrial demobilization. Like the Murray Bill for contract termina-

tion, the legislation on the broader aspects of reconversion is expected to provide for a central demobilization unit which would operate through existing agencies.

Considerable interest is attached to the Senate Committee's forthcoming report, since it is said to have approval of all four Committees working on the question and undoubtedly will resemble whatever formula or pattern is finally accepted.

► **House Swings Into Step**—Meanwhile the House of Representatives swung into step with the Senate, as Rep. Colmer set about to organize his Post-War Economic Planning and Policy Committee. The question of disposal of facilities also will be studied by the Colmer group and an effort will be made to reconcile their findings with that of the parallel Senate Committee.

## N. Y. CAP to Meet

Group staffs of the New York wing of the Civil Air Patrol will hold their winter meeting at Rochester, N. Y., Feb. 26 and 27, with Col. Earle Johnson, A. C., national commander of the CAP, and his staff as guests.

Discussions will deal with present problems and future plans, and CAP responsibility in connection with airplanes and equipment recently placed at its disposal by the Army Air Forces to aid in AAF recruiting work.

Wing commanders and staffs from other states will attend the meeting, which will be open to all members of the Civil Air Patrol organization.

## William B. Mayo Ford Aide, Dies

Chief engineer was responsible for motor magnate's entrance into aviation.

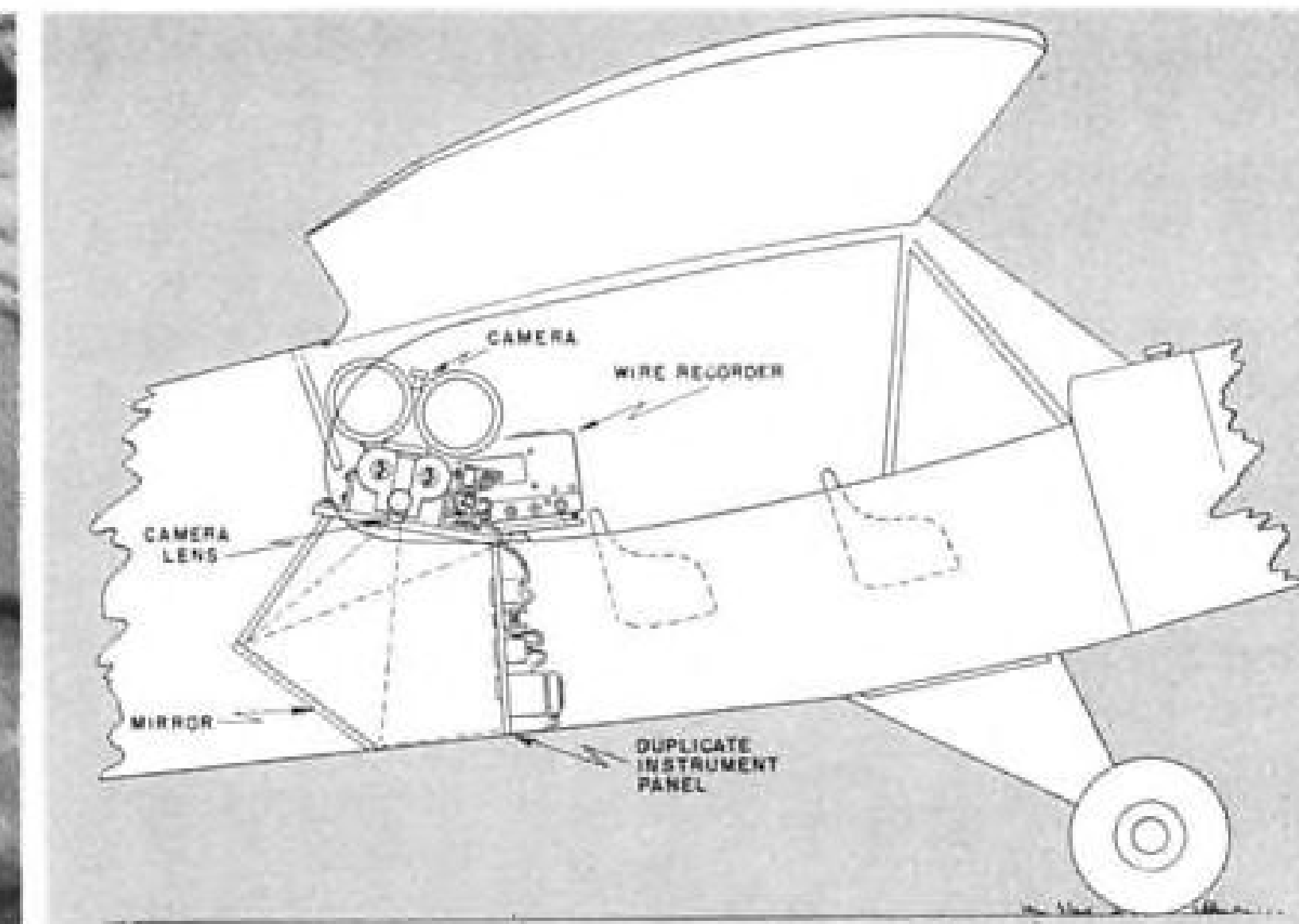
William B. Mayo, former chief engineer of the Ford Motor Co., and the man largely responsible for Henry Ford's entry into the aircraft industry, died last week in Henry Ford Hospital, Detroit. He was 78 years old.

Mr. Mayo joined the Ford organization in 1913, his first task being the construction of the power plant building for the Highland Park plant. After that, he constructed the River Rouge works, set up various assembly plants throughout the United States, electrified the Ford railroad and traveled extensively to investigate various manufacturing processes in which the company was interested.

► **Studied Aviation in Europe**—In 1920, at Ford's request, he went to Europe to study the aircraft industry there and on his return advised Ford to open an airplane factory in Detroit.

Mr. Mayo was an organizing director of the American Airports Corp. in 1928 and was active in aviation affairs. In 1932 he was chairman of the Board of Control of the National Aircraft show at Detroit. He also had been vice-president of Stout Metal Airplane Co. and a director of United Aircraft Corp.

► **Urged Air Defense**—He was president of the Detroit Aviation Society and had been a member of the National Aeronautic Association Committee on awards.



### FIRST INSTRUCTIONAL USE OF WIRE RECORDER:

Civil Aeronautics Administration is making limited use of this wire recording device to study instructor-student conversations in training planes. General use will be delayed because of military orders. Navy has used the machine in its own instruction and the AAF has employed it to bring back records of battle

sounds and fighter conversations, but CAA believes its own use was the first application of the recorder to instructional study in any country. Its program also includes duplicate instrument panel photographs made in flight. The drawing shows arrangement of camera and recorder in the plane.

## Efficiency of Plane Industry Amazes House Inspection Group

Report of Military Affairs Subcommittee reveals "remarkable progress" of industry in production, design and training during last few years.

A Congressional Committee which has just completed an extensive survey of Army air installations, including aircraft manufacturing plants, has submitted a statement loaded with significance for the industry in a conclusion that "the report we give is an optimistic one. The over-all picture as we have seen it is good."

At a time when many government spokesmen, both civil and military, are warning that the entire war effort may fail, if industry—particularly the aircraft industry—does not come through, aviation observers in Washington took heart from a statement by a House Military Affairs subcommittee that "the progress that has been made during the past few years is remarkable. This applies to production, to design and to training—all being done in mass quantities with an efficiency and a result never dreamed of a few years ago."

► **Added Importance**—This, of course, has been said before in substance. And Congress generally has been sympathetic to the problems of the aircraft industry. But the fact that the subcommittee's

survey was so thorough and covered so much ground, have given it added importance.

Chairman of this subcommittee is Rep. John J. Sparkman, of Alabama, whose interest in aviation is genuine and profound and who, while critically fair, shows an understanding of the problems of the industry. Other members on the tour, which Sparkman emphasized was not an investigation but an inspection, were: Rep. Thomason, of Texas; Rep. Kilday, of Texas; Rep. Clason, of Massachusetts; Rep. Martin, of Iowa; Rep. Elston, of Ohio. Accompanying officers from the War Department were Lt. Col. Robert H. Thompson and Lt. Col. George B. Inge, both of the General Staff.

► **All on Schedule**—Among the items noted in the report of particular significance to the industry was the comment that "the fact that every plant we visited is on schedule in turning out the finished plane speaks well for the manner in which the work has been organized and production maintained with a steady flow."

The report noted that those

charged with the responsibility of designing the best planes possible have profited from the experience gained by the use of the planes in actual combat and "there has been no hesitancy in making changes when combat experience has shown them to be necessary or desirable."

► **Last Word in Planes**—Speaking of new models produced by the aircraft industry, the report expressed amazement at the work done, saying that virtually every new plane that goes into service is the last word in that category of combat plane. "We are hardly more than accustomed to its performance when new and improved models of the same type are out, and before long that type loses its first position to some new plane designed to do the same job more effectively," the report added.

It emphasizes that these new planes are not the product of the moment, but that "they require months and years to design, build, test and bring to completion," a situation which Sparkman's committee understands, but which is not understood by uninformed critics of the industry.

► **New Models**—"The announcements of these new models from time to time indicate the continuous work toward improvement of our fighting planes," the report says. "We may be assured that careful research, study and experimentation will continue at all times and serve to give our fighting forces the very best in air equipment."



### NOSE-LOADING PLYWOOD CURTISS "CARAVAN":

Two new views of the Curtiss Caravan C-76, on which contracts were canceled some months ago after about 20 had been built, largely of plywood. These craft

are still in use, however, under experimental loadings and runs. Note that the opening nose section itself has considerable additional cargo space.



Committee members said they saw many types of planes being built—some of them not yet made public as to details, and none was disclosed, but the report went on to say that “we have been greatly impressed by these planes and new changes in models already in use,” and added that “we feel confident that more and more the enemy will feel the growing might of our air power.”

► **Manpower Hoarding**—The Committee’s report recognizes the manpower problem and says that charges that aircraft companies have hoarded manpower in the past undoubtedly were based upon facts, and then goes on to indicate that such is not the case today.

“Their officials were aware that heavier production burdens would constantly be placed upon them,” the report says. “They perhaps naturally sought to protect themselves insofar as possible by retaining all men and women in their employ at all times.

► **Cooperation Cited**—“Yet in one plant the officials cut in half the number of their employees at one time because materials for planes did not arrive as expected. At a later date, they built their force up again. The procedure was wasteful of money, yet it is difficult to find that anyone acted otherwise than prudently under the stress of war needs and conditions,” the report recited.

In regard to the Pacific Coast inspection, the Committee said the officials of the Aircraft War Production Council “have cooperated splendidly with each other, not only in placing technical knowledge and even materials on occasion at the service of the other plants but also in progressive efforts to improve the conditions prevailing in the entire industry by joint collaboration.”

## Northwest Exposition

Plans are well under way for a Northwest Aviation Exposition, to be held in the Minneapolis Auditorium Mar. 25 to Apr. 1 under sponsorship of the greater Twin Cities Chapter of the National Aeronautic Association.

Space already spoken for indicates to Tom Moore, president of the Minneapolis Civic and Commerce Association and chairman of the Arrangements Committee, that displays will be offered by manufacturers of planes, engines, propellers, automatic flying controls, oxygen masks, instrument panels.

## Army Urged to Study Airfield Disposal

House group asks consideration with view to coordination with civil airports.

The War Dept. should be giving consideration to what it wants to do about Army air fields after the war, with an eye to proper coordination with civil fields, says a House Military Affairs Subcommittee back from a tour of Army installations and plane production plants.

The subcommittee’s report added to studies being made by Civil Aeronautics Administration, the Army and Navy and Post-war Congressional Committees of possible disposal after the war of some of the airports built by the government.

Headed by Representative Sparkman of Alabama, the members acknowledged that it was too early to expect suggestions to Congress from the War Department as to which Army air fields will be retained after the war, but suggested that study be made and recommendations submitted as early as possible.

► **CAA Seeks Assignment**—In other quarters, meanwhile, the CAA was reported to hold the opinion that it should have the assignment of handling the disposal program, since most of the CAA ports and some of

the others are so situated as to be valuable to municipalities. No doubt local and federal authority will regulate the installations, even if some are transferred to private hands for entrance into municipal service.

The subcommittee, in its report, put “cooperation and coordination between Army and Navy air fields with municipal and commercial fields” on a par with study of the disposal problem. Few of these fields, the subcommittee pointed out, “Have not been constructed entirely or at least in part with government money. The taxpayers have the same interest in them as in Army fields.”

► **Joint Program Proposed**—The report explained that the suggestion was not being made that the Army exercise direct control or authority over municipal or commercial fields, “But only to work out a joint program of operation that would be in the public interest.”

The Congressmen also hope the department, “as soon as consistent with the war effort,” will make recommendations not only to air fields it would like to retain for necessary Army use but also as to what disposition is to be made of the remaining fields which will continue in operation.

► **Port Needs Cited**—Adequate and modern air fields, properly located and sufficiently large and well equipped to meet any situation, will be a necessity in meeting future air problems, the report contended.

The subcommittee also urged that careful attention be given a plan to continue the usefulness of private schools now in the primary training program, declaring them “a great asset,” and commenting that “Their value in any post-war air program should not be overlooked.”

► **Long-Term Leases Unlikely**—No alternative use for an air field has been developed, but there are various specialized purposes to which they can be put. A given port, for instance, may be used for passenger and mail services, while another might be used for cargo, though such a separation of purpose probably is some distance in the future.

The likelihood is that the government will not enter into long-term leases, in any event. CAA feels that such a lease might make it hard to replace a lessee whose interests might not coincide with those of the Community where the lease was held.

## \$20,000,000 Coast Airport Planned

1400-acre track in San Francisco Bay area to be surveyed.

Private capitalization of a \$20,-000,000 San Francisco Bay area airport is in prospect and surveys for a 1,400-acre site will be made by an engineer employed for the purpose by Parr Terminal Co., of San Francisco.

The survey results from activity of San Francisco’s Foreign Trade Association—composed of shipping leaders, engineers and financiers—in urging long range development of at least three major airports in the bay area to assure San Francisco of a dominant position in post-war trans-Pacific and domestic air commerce.

► **Improvements Pledged**—San Francisco recently gained a pledge of \$10,000,000 worth of federal improvements, including a seaplane base at Mills Field municipal airport, by assigning title to Treasure Island in San Francisco Bay to the federal government for use as a permanent Navy base.

Parr Terminal Co., operator of shipping terminals on the San Francisco waterfront, will give first consideration to East Bay land between Berkeley and Albany as a possible airport site.

## New Constant-Speed Propeller Developed

Zimmer-Thompson product said to need no outside source of power for operation.

Development of an inexpensive and simple automatic constant-speed propeller for light planes is claimed by Lloyd H. Leonard, chief engineer of Zimmer-Thompson Corp. The propeller does not require any outside source of motive power for its operation, as is the case with electrically or hydraulically operated constant-speed propellers.

Called the “Iso-Rev,” the product utilizes the energy of the rotating propeller shaft for its operation. Leonard said the propeller, together with its automatic governor and pilot’s selector control, forms a single, self-contained unit which can be easily and quickly installed in any light or medium horsepower airplane.

► **Mechanical Operation**—He explained that the entire operation

## Minnow and Shark

The air transport industry’s back fence squabble between the four lines doing 80 percent of the business and the twelve others transacting the other 20 percent broke out again in an address by Carleton Putnam, president of Chicago & Southern, one of the 12.

“One of the troubles with the phrase ‘free enterprise’ is that so few people agree on what it means. The shark grunts it while swallowing the minnows, and the minnows die with ‘free enterprise’ in their prayers,” he said.

“I maintain that in air transportation we can have economic health without great combines and consolidations. . . . I cannot stand idly by and listen to talk about free enterprise as if it sim-

ply meant freedom for the biggest fish who gets there first to eat everything else in the pool.”

In addition to the big four airlines, Putnam pointed to the “powerful ground carriers—railroad, bus and steamship companies . . . bringing great pressure to bear on Congress.” Thus the small airlines face danger from two fronts, he said.

“I believe the CAB is conscious of the danger and will strive to administer the law to avoid this pitfall,” he added, referring to the large airlines. To battle the “complete strangulation” by big railroad corporations and “the railroad mentality,” he urged a fight to keep surface carriers out of the air.

of the propeller is accomplished by mechanical means and is positive in action, and that its response to required changes in propeller pitch is rapid and the propeller pitch change is accomplished quickly without hunting.

Leonard said the mechanism consists of two parallel V-belt pulley systems linking the propeller shaft with an adjacent governor shaft. One pulley system has a fixed drive ratio, while the other is comprised of split pulleys and has a variable ratio.

The difference between the two ratios will cause the blade pitch to change. The ratio of the variable drive is controlled by the action of a centrifugal governor. When any deviation from the desired speed setting occurs, the governor changes the ratio of the variable drive, causing the pitch change which corrects deviation and returns the propeller and engine to the selected speed.

## Budget Bureau Curbs Flight Strip Outlay

26 completed along highways, mostly on East and West Coast.

A program which resulted in the construction of 26 flight strips—airplane landing fields adjacent to public highways in various parts of the country—has now been completed and it is learned that the Bureau of the Budget refuses to approve further allotments.

While definite location of the strips was not made known, an official of the Public Roads Adminis-

tration said they were located for the most part on the East and West Coasts, with few in the central part of the country.

► **Authorization**—The Public Roads Administration, under the 1941 Defense Highway Act, was authorized to build these strips adjacent to highways in cooperation with the Army Air Forces, which designated the locations of the strips.

It is understood that Gen. H. H. Arnold, Commanding General of the AAF, was enthusiastic about the flight strip program and would like to see more of them constructed.

## Technical Air School Set Up in Brazil

Established at Sao Paulo under direction of U. S. Embry-Riddle organization.

A technical aviation school for the Brazilian Air Force has been established at Sao Paulo, Brazil, under the direction of the U. S. Embry-Riddle School of Aviation.

John Paul Riddle, president of the Embry-Riddle school, has been in Brazil with trained American instructors to organize the school where 500 students soon will be enrolled. The courses vary from 22 to 36 weeks. Riddle has been working with Dr. Joaquim Pedro Salgado Filho, Brazilian Air Minister, who visited the United States recently.

The Embry-Riddle organization, headquartered in Miami, Fla., has five training fields in this country and has been training U. S. pilots and mechanics for the AAF under contract since 1940.



## THE AIR WAR

### COMMENTARY

# Rome Landings Show Cost to Nazis Of Lack of Air Reconnaissance

Allies plastered fields near Italian capital, making enemy's use of observation planes impossible before surprise landing behind German lines.

After bucking the line by frontal assault in southern Italy for some 20 weeks, a sudden end run brought Allied invasion forces ashore 30 miles south of Rome in a surprise move which may well break the stalemate of the Italian campaign. Surprise is the most deadly of all weapons. It is effected by doing the unexpected and thereby creating a situation for which the enemy is unprepared.

Surprise can be secured by concealing preparation, by disguising the intention or by the rapidity of execution. It may take the form of time, place or direction of blow, amount of force employed or type of tactics used. If surprise is secured, it must be followed up effectively or disaster will result.

► **General Wilson's Statement**—Gen. Sir. Henry M. Wilson, Allied Commander in Chief of the Medi-

terranean theater, said the Germans, because of the surprise of the landings, "were not in a position to attack our beachhead during the first 48 hours, thereby giving us time to get ashore support weapons. . . . This was due almost entirely to the action of the air force, which by attacking the enemy's airports in the Rome area, disrupted his means of reconnaissance and threw them out of gear at the crucial time when the convoys were leaving and proceeding northward up the beaches.

"No enemy aircraft came over." Blessed contrast to Salerno. For many days after the landing most of the German planes encountered were not bombers or fighters, but reconnaissance planes.

► **Air Reconnaissance Vital**—Up-to-the-minute knowledge of the enemy's movements, position and strength is of the essence of military intelligence. During the first World War the ability of the "aeroplane" to see over the next hill to find out what the enemy was up to, and in general to greatly enhance the scope of intelligence in time, distance and speed, was widely hailed as its most valuable contribution to warfare. Although not often in the news, except as having taken photographs vividly depicting the damage done to military objectives by bombing planes, air reconnaissance is still an extremely vital function.

► **Putting Out the Enemy's Eyes**—Moreover, it works both ways. Not only do we need to know the enemy's plans, but we must keep him from learning ours. Before the surprise landing at Nettuno, Allied bombers and fighter-bombers of Gen. Eaker's Mediterranean Allied Air Forces carried out smashing attacks on half a dozen important fighter airfields in the Rome area, and to the east and northeast at Avezzano, Aquila and Rieti, as well as the fighter fields near the actual landing area, such as Littoria and Frosinone.

It is from some of these fields that the fast German reconnaissance planes operate, and their complete neutralization was one of the big factors in the surprise landing. This was almost an exact duplication of a similar operation last April whereby a concentration of attacks on airfields by the Tactical Air Force kept enemy fighters and reconnaissance aircraft out of the skies, enabling General Montgomery to spring a surprise which breached the Mareth Line.

► **An Example from the Russian Front**—In modern air reconnais-



## HE'S FINDING OUT HOW TIRES GROW ... TO IMPROVE AIRPLANE DESIGN

It has long been known that tires tend to grow in radius as a result of centrifugal force, affecting the amount of clearance needed between a tire and its landing gear strut. But how much do they grow? This fact is important to designers of today's faster-landing aircraft.

B. F. Goodrich engineers set out to actually measure tire growth. They used a tire-testing machine which accurately simulates take-offs at speeds up to 140 mph. A telescopic sight with a hairline

rule was focused at a fixed point on the tire's circumference, and the take-off speed was varied from 140 mph down to 0 mph. Several sizes of tires were tested and carefully measured at these speeds.

Our engineers discovered that tire growth varied only with the speed, and very little with the size of the tire tested.

In other words, at the same speed, a

30" and a 56" smooth contour tire grow about the same amount.

Facts gained this way are of material help in designing landing gear and tires that will afford maximum safety for modern aircraft.



Today, all our research and production facilities are geared to total war. Tomorrow, the "know how" we're gaining now will help bring you a world of safer flight. The B. F. Goodrich Co., Aeronautical Division, Akron, O.

MAKERS OF MORE THAN 80 RUBBER AND SYNTHETIC RUBBER AVIATION PRODUCTS



### UNPACKING INCENDIARIES FOR JAPS:

Carrier crewmen are pictured here unpacking incendiary bombs and, in background, loading them aboard planes which a short time later rained fire and destruction on Jap-held Tarawa in the Gilbert Islands.



sance, speed is of the essence. The British use special versions of the *Spitfire* and *Mosquito*, and the Army Air Force's F-5 is a photographic model of the Lockheed *Lightning*. The Germans depend on extreme altitude as well as speed for taking their photos and getting back safely, using special versions of the JU-86 and other fast high altitude planes. The Russians maintain the most complete possible air reconnaissance over the entire battle area, in all kinds of weather, using special models of their best fighters and bombers.

On a certain vital sector it was foreseen that the Germans would use tanks for a break-through. Aerial photography indicated no tanks to a depth of ten miles behind the front line. Reconnaissance pilots in Pe-2 dive-bombers (a ship roughly corresponding to the JU-88) scouted the railway traffic deep in the enemy rear.

Picking up the scent it was finally discovered that six freight trains laden with tanks were being unloaded at a certain station and making off for a concentration site. Enemy anti-tank artillery and fighter planes were spotted in the district where the tanks were con-

## Cannon Heads 12th

Announcement that Maj. Gen. John K. Cannon has been appointed commanding general of the United States 12th Air Force, leaves only one top position to be announced among the fifteen U. S. air forces. In the Jan. 17 issue of *AVIATION NEWS*, an air force chart showed both commanders of the twelfth and thirteenth yet to be announced.

Cannon also will serve as commander of the tactical air force, which is composed of American and British units operating with Lieut. Gen. Mark W. Clark's 5th Army and the British 8th Army. The 12th Air Force is located in Northwest Africa.

centrated in the woods. Short-range low altitude reconnaissance revealed the exact position and incendiaries were dropped. The tanks came crawling out, and the *Petlyakov-2's*, now equipped as dive bombers, dealt them a smashing blow. The German break-through failed to come off.

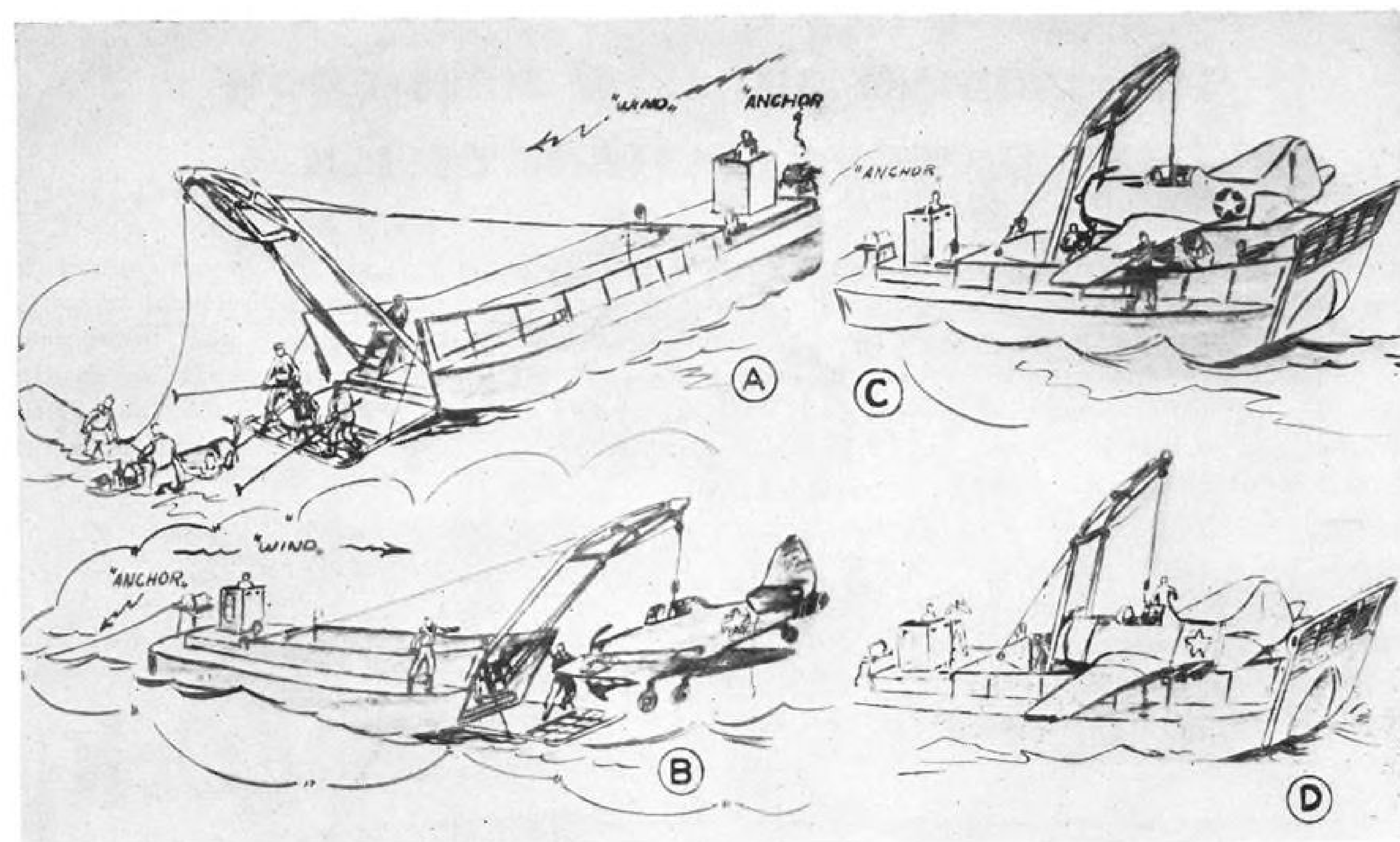
► **Strategic Bombing Ally**—In the sphere of strategic bombardment, photographic reconnaissance is also an indispensable ally. The all-air victory of Pantelleria would have been impossible without it. The selection of industrial and communications targets and accurate assessment of damage is dependent on eyes from the air. "The nation with the best air reconnaissance will win the next war." This statement by a high-ranking German officer, made half a dozen years ago, is well on the way to final proof.

—NAVIGATOR

## Safety Record Hailed

Commercial airlines have been praised by the Civil Aeronautics Board for their 1943 safety record. CAB figures showed that the average of approximately 1.4 passenger fatalities for every 100 million passenger-miles flown was lowest since 1939, when the average was down to 1.2.

The 16 domestic passenger-carrying lines flew about 1,650,000,000 passenger-miles last year, the Board said, or about 900 million more than in 1939.



## HIGGINS PROPOSES SPECIAL AIRCRAFT SALVAGE BARGE:

Higgins Industries, Inc., which is producing landing barges for the Navy, has proposed construction of a special version which can salvage aircraft quickly from the sea. These company drawings indicate the

stages in the operation. Officials believe the barges would have important post-war possibilities in civil aviation. Some preliminary tests already have been made, by permission of the Navy Department.

## PERSONNEL

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Mundy L. Peale, vice-president and divisional manager of the Evansville division of Republic Aviation Corp., has been elected to the board of directors.

Paul Biklen, public relations director of Kaiser Cargo, Inc., Fleetwings division, has been granted a leave of absence to join the Navy, as an ensign. During his absence Lloyd J. Derrickson, a member of the public relations department, will handle public relations for the company.

Richard W. Corns has been named assistant general traffic manager of B. F. Goodrich Co.

H. W. Crowther has been appointed assistant system superintendent of maintenance for Transcontinental and Western Air, Inc., with headquarters in Kansas City. He has been on a special assignment in TWA's modification center in Kansas City. Other maintenance department personnel changes include: V. A. Blackwell, formerly supervisor of service, to supervisor of overhaul; W. P. Dahnke, formerly supervisor of overhaul, to staff assistant; E. T. Huff, supervisor of service; K. K. Kay, foreman of maintenance service, all at Kansas City; and G. A. Putnam, transferred to Burbank, Calif., as maintenance foreman.

Danilo Clemente Frey, of Argentina, who has been in the United States under the auspices of the American Aviation Training Program, has left for Buenos Aires.

Col. Vasco Socco, former representative of the Brazilian Air Force on the joint Brazilian-United States Defense Committee, has arrived in Washington from Italy.

Court P. Shropshire, traffic manager of the Nashville division of Consolidated Vultee Aircraft Corp., has been elected chairman of the rate and classification committee of the Central Region of the Aeronautical Chamber of Commerce. Harold Mengert, chief project engineer of Nashville division of Convair, has been assigned to Stout Research division.

Philip Walsh, production manager for General Motors, has returned from a trip to Buenos Aires.

F. H. Smith has been named Sperry's flight operations superintendent of research laboratories, succeeding G. E. Bevins, who becomes liaison supervisor of these laboratories.

W. Paul Eddy, Jr. (photo), has been appointed as materials engineer of Pratt and Whitney Aircraft division, United Aircraft Corp., by acting General Manager William P. Gwinn. Eddy joins Pratt and Whitney after fifteen years of materials work in the General Motors organization where he was in charge of metallurgy, welding engineering, and service engineering for the truck and coach division.



Lt. Raymond Billett, partner of Keibon, McCormick & Co., Chicago investment house, has been elected to the Board of Directors of Chicago & Southern Air Lines.

Lt. Col. John B. Jacob, USMCR, has been reassigned after serving with the engineering division of the Bureau of Aeronautics.

First Lt. Robert H. McGee, formerly AAF Intelligence officer in the Inglewood, Calif., area, has been assigned to the same duty in the San Diego area. McGee succeeds Capt. Will J. Sibley, recently promoted to intelligence officer for the central procurement district with headquarters at Detroit.

E. R. Witchley, assistant chief inspector of Kellett Aircraft, has been named subcontract sales representative on the West Coast. S. J. Deichert replaces Witchley.

W. V. Trelease, general manager of Plant 5, of Kellett Aircraft, has been appointed assistant to Factory manager W. L. Schrader.

Lt. Col. John B. Jacob, USMCR, has been reassigned after serving with the engineering division of the Bureau of Aeronautics.

Comdr. John B. Bowen, Jr., has reported to the Aviation Training division of the Bureau of Aeronautics.

Kenny Carr has transferred from



## PAN AMERICAN EXECUTIVE HONORED:

Juan T. Trippe, left, president of Pan American Airways System, is pictured presenting Atlantic Division Manager John C. Leslie with 15-year service pin at a luncheon at the Cloud Club. Leslie has worked in many capacities for Pan American. He helped to organize the Trans-Pacific Division, which pioneered airways from the U. S. to Australia and the Orient. He was technical adviser in charge of the historic flight of President Roosevelt to Africa for the Casablanca Conference.



## More bombs on target... more planes home!

WHEN ENGLAND DUG OUT of the rubble, the task was to take air warfare to the German enemy. Because of the human ceiling on production, every bomber was precious beyond price. Every crew was part of the life-blood of British self-preservation. Every bomb was critical. The objective was—more bombs on target, more planes and crews safely home!

What new flight training could assure this dual objective? A new device was called for—a team-work trainer—for pilot, navigator, radio operator, bombardier. A celestial navigation trainer, reproducing the heavens at night. A trainer which would "fly" over valleys and mountains, which would show the moving terrain below, and yet be anchored to the ground! Could such a device actually be contrived, and built?

The problem was given Link. Link engineering provided the answer. "secret weapon" until lately, the Link Celestial Navigation Trainer is now, and for some time has been training the United Nations air forces. The objective is being achieved—more bombs on target, more planes home!

LINK AVIATION DEVICES, INC., Binghamton, New York. Makers of Link Trainers, Celestial Navigation Trainers, Link Aviation Sextants, Collimators.

★ ★

Aviation looks to Link for creative engineering and high standards of manufacture. Look for the name LINK on precision products after the war.

Vultee Field to become supervisor of equipment control at Convair's Fort Worth division.

A group of Cuban Air Force men and officers accompanied Lt. Manuel Canamero from Havana to attend a course in technical training at the Embry Riddle School of Aviation in Miami. Gardner Cowles, Jr., president of the Des Moines Register and Tribune, was elected a director of United Air Lines to take the place of Joseph P. Ripley, who recently resigned so that Harriman, Ripley & Co., with which he is associated, might handle United's new financing plan. In addition to heading the Des Moines newspapers, Mr. Cowles is vice-president of the Minneapolis Star Journal and Tribune Co.; president of Look Magazine, the Iowa Broadcasting Co., the South Dakota Broadcasting Co., and Gardner Cowles Foundation.

Lt. Col. Edward C. Parker, USMCR, has been detached from duty in the Production division of the Navy's Bureau of Aeronautics.

Comdr. Samuel G. Mitchell, USN, has been detached from duties in the Flight Training Section of the Bureau of Aeronautics.

L. Raymond Billett, partner of the Chicago investment firm of Kebbon, McCormick and Co., has been elected to the board of directors of Chicago and Southern Air Lines, Inc.

Major Betty Bandel, Air officer of the Women's Army Corps, now inspecting installations in foreign theaters, has been promoted to lieutenant colonel. She was the first WAC to attain the rank of major and her present rank, and is second highest ranking woman in the corps. She supervises the activities of all WACS assigned to work with the Army Air



Lt. Col. Betty Bandel

Forces at posts, camps, and stations in this country and advises on WAC activities in several foreign theaters.

Roswell H. Rausch (below), president of Automatic Paper Machinery Co., of Hoboken, has been elected a di-



Roswell H. Rausch

rector of Fairchild Engine and Airplane Corp. Rausch and J. Fort Johnson, a director of the firm, also were elected to the executive committee.

Carroll E. French has been made director of a newly established industrial relations department of Boeing Aircraft Co. In this type of work for the past 22 years, French will direct these activities at the Seattle and Renton divisions of the company and will act in an advisory capacity for the Wichita and Vancouver, B. C., divisions. Most recently, French has been a staff member of Industrial Relations Counselors, Inc., as chief of survey and counselling, and has made industrial surveys for several aircraft firms as well as other large companies. He was previously director of industrial relations for Colonial Beacon Oil Co. and the Standard Oil Co. of Pa., and was once training director and personnel manager of the Bayonne refinery for Standard Oil of New Jersey. In his new capacity at Boeing, French will direct the personnel division, the medical unit, labor relations unit, training activities, inplant feeding and employees service organizations, such as share-the-ride, transportation, banking facilities, rationing, etc.

Harry T. Parsons has been appointed administrative assistant to C. F. B. Roth, vice-president of Aircooled Motors Corp., in charge of sales. Parsons was an RAF pilot in the World War, and has been connected with Pan American Airways and more recently with Chance Vought division of United Aircraft Corp.

Edward F. Royal, former public relations specialist with Pan American Airways and Catherine A. Noone formerly of American Airlines are members of a new advertising and public relations organization, Royal and de Guzman, located in New York City.

A newly organized department of American Airlines, Operations Research, will be headed by Gage Mace, former director of flight operations. The work handled by this department will entail study and analysis of operating procedures and techniques of the industry, and of American Airlines in particular. He is succeeded as director of flight operations by W. W. Braznell, chief of flying, who, in turn, is succeeded by W. G. Huguen. Concurrently, William H. Miller was named operations manager, a newly created position to expedite procedures. He will supervise all operations departments, including communications maintenance and overhaul, flight operations, station operations, airways and airports. During 15 years with American, Miller has been station manager, division superintendent, flight superintendent and assistant director of flight operations.

Harold Pallas, of Convair's San Diego division, has become assistant chief industrial engineer at the Fort Worth division. Dick Jawitz has gone to Fort Worth as supervisor of operating controls, a post formerly held by J. M. Krull, newly named staff assistant.

W. F. Flanley has been appointed assistant manager of the Renton divi-



W. F. Flanley

sion of Boeing Aircraft Co. Flanley has served as administrative assistant in the Boeing Renton division since Jan. 1, 1942. He was formerly with the International Telephone and Telegraph Co., as vice-president and general manager of a number of its operating companies in Mexico and South America.

Courtney Johnson, recently company war contract representative in Washington, and chairman of materials control committee of Automotive Council for War Production, has been named assistant to the chairman of the board of Studebaker Corp.



## AIRCRAFT PRODUCTION

# Move to End 18-25 Deferments Poses New Problem for Industry

Country confronted with choice of men or bombers, leaders declare; warn of too great drain on plane plant manpower.

By SCOTT HERSHEY

The aircraft industry is vitally affected by the recent statement of Selective Service policy to end all deferments for the 18-to-25-year-old group, of which there are large numbers in the engineering and technical departments of the industry.

The remarks of Maj. Gen. Lewis B. Hershey regarding the manpower situation make it plain that approximately 900,000 men must be delivered to the armed forces in the first three months of this year and then pointedly looks to some 3,000,000 registrants deferred by reason of their occupation in war production or in support of the war effort.

► **Repercussions**—This does not mean all these men are in aircraft plants but, because aircraft work has had a high priority in deferments, it follows that there is a possibility of repercussions in the industry.

In industry circles, it is not believed manpower requirements of the armed services—pointed up by the coming invasion of Europe—will affect the aircraft industry to any great extent except possibly in the 18-to-25-year-old class.

There is a distinct doubt, however, that the occupational deferment line can be held on the 18-25-year-olds if the demands of the armed services continue and if old-

er men with families are being drafted.

► **Boards Reluctant**—Local draft boards are reluctant to leave young, single men deferred in positions in industry—and agriculture—and to induct in their place men who have established family responsibility.

The answer must be, in the opinion of Selective Service, that unless the skill, experience, and responsibility of the young registrant is so great as to thoroughly convince reasonable judgment that the individual should remain at home and a father should go to war in his place, then his occupational deferment can not be justified.

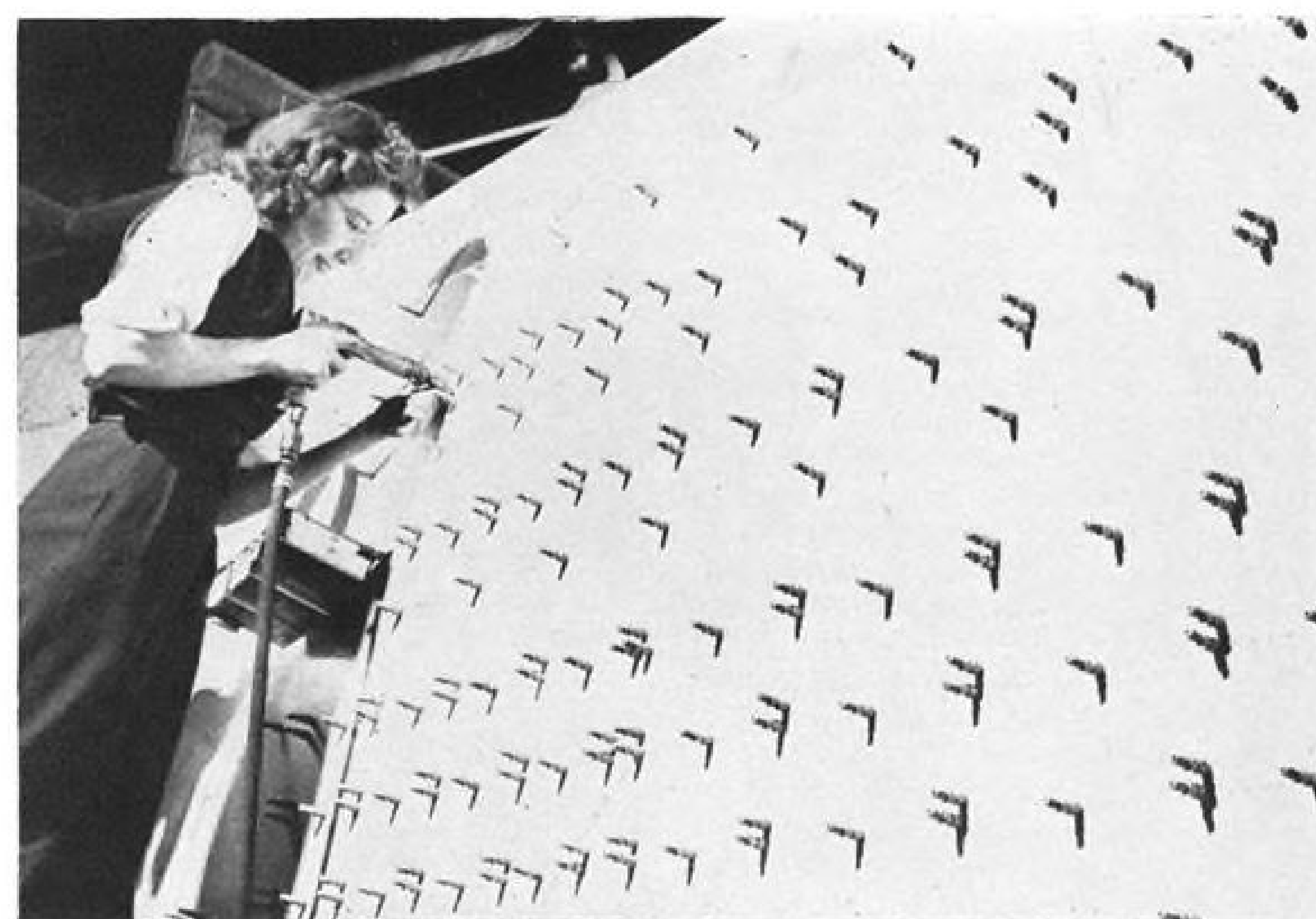
► **Proof Required**—This means that the aircraft industry, which heretofore has generally asked for deferments on the simple grounds that a man is essential or can not be replaced, must now back up their request with definite and strong evidence.

The industry has been under pressure for some time on the replacement program—urged to find a replacement for a young, single man working on an essential job—but the situation actually has been that the "replacement" is also needed on a front-line production job.

► **Men or Airplanes**—Most industry and government observers believe that Gen. Hershey's most recent remarks are unlike some of the others that have come from government, which were the off-again, on-again type, or rather good today and bad tomorrow situation. There is an increasing trend or tendency to reach into industry for men.

The natural reaction of aircraft manufacturers is to inquire whether the armed forces want men or airplanes, but that is over-simplification. They have to have both and there is a definite indication that they are going to get them.

► **Problem**—The Selective Service problem is the top problem of the country at the moment and probably will continue to be for some months. There are underground rumblings in Congress about industry deferments for young, single men, as married constituents with families are drafted and go into the Army or Navy. The aircraft companies, particularly on the West Coast, have a tough problem on their hands in trying to explain to their communities why a 20-year-old technician is more important to the over-all war effort in the engineering department



### RIVETS FOR MARTIN "MARINERS":

Some 23,000 rivets are driven into every 28-foot-long horizontal stabilizer that Westinghouse builds for Glenn L. Martin patrol bombers, the Mariners. To prevent the aluminum skin from being drawn out of place by riveting guns, sheet metal clamps hold the covering tight to the framework until the riveters work up to the clamps. Such precautions enable the worker shown here to produce work that checks to the two-thousandths of an inch.

# AIR POWER THROUGH McQUAY-NORRIS ALTINIZED PISTON RINGS

**PISTONS...PINS...  
HARDENED AND GROUND PARTS**

Every McQuay-Norris part in modern airplane motors is backed by 34 years of experience and progress in precision manufacture. Today the world's largest makers of aircraft motors are availing themselves of our broad background of metallurgical development, heat treating, clinical research and engineering design. Your inquiries are invited.

### PISTON RINGS

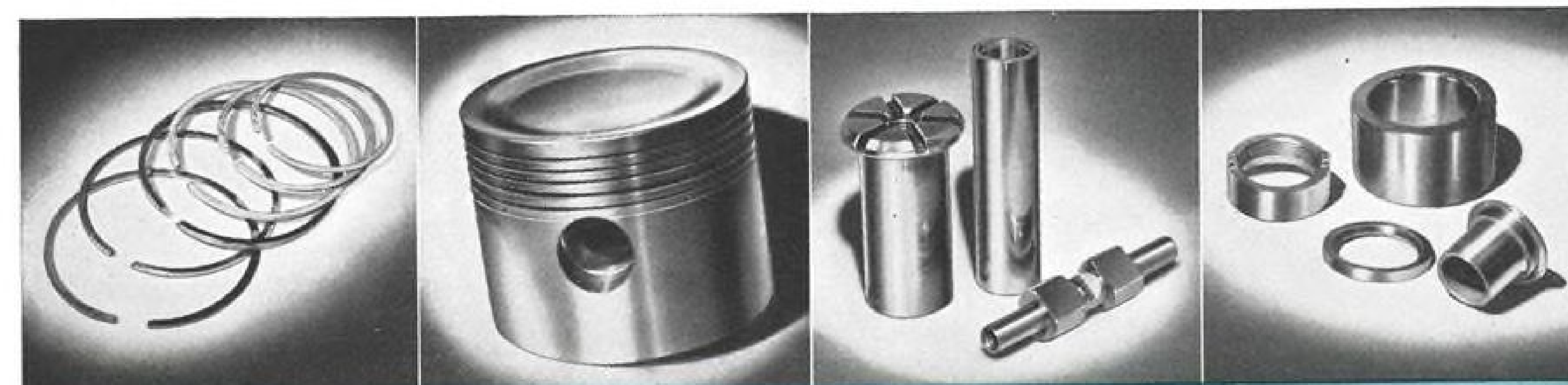
**PARTS FOR  
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**EQUIPMENT FOR  
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Pistons for Oxygen  
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Machined Aluminum Pistons  
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**McQUAY-NORRIS MFG. CO. (AIRCRAFT DIVISION), ST. LOUIS, U.S.A.**  
CANADIAN PLANT, TORONTO, ONTARIO



than he would be in the Army.

Agricultural deferments have been large and if Selective Service dips into the farm worker pool to meet its quotas, it will be increasingly difficult for industry to keep their 18-25-year-olds.

► **1,000,000 Available**—The manpower pool available to Selective Service, consisting of men between 18 and 38, contains approximately 22,000,000 registrants. Of this pool, services, over 3,500,000 have been inducted or enlisted in the armed services, over 3,500,000 have been found physically or mentally disqualified for military service, and 300,000 not available for induction by reason of conscientious objection, family hardship, ministry or deferment or exemption for other reasons. Thus the pool is abruptly reduced to 9,200,000 registrants.

Of this group, approximately 1,000,000 are now in a class available for military service and from this group Selective Service expects to induct not more than 500,000. The remaining pool is then down to 8,200,000 and of course there is a source of supply in those currently becoming 18 years of age, of which there are about 80,000 per month. Experience has shown, however, that only about 50,000 of these can be drafted.

► **300,000 To Be Called**—Figuring that about 300,000 of this group will be drafted during the six-month period, the unaccounted-for

## Budd Ships to Navy

An unannounced number of the new stainless steel Budd transports, the RB-125, is soon to be acquired by the Naval Air Transport Service, it was disclosed in the report of NATS operations compiled by the Office of War Information.

This distinctive-looking plane has recently been engaged in test flights and was observed landing and taking off at Washington's National Airport. A bulbous nose and high tail mark the craft.

A drawing of this airplane appeared in AVIATION NEWS last August with the comment that it was a revolutionary design for a high-efficiency cargo plane with the indication that it would be coming off the assembly lines of Edward G. Budd Manufacturing Co. by the end of 1943. Gross weight at that time was set at about 20,000 pounds. Number to be turned out has not been announced.

requirements are down to approximately 700,000. The balance of the pool of 8,200,000 consists of 3,500,000 registrants in Class 3-A, who were previously deferred by reason of dependency, 3,000,000 deferred by reason of occupation and 1,700,000 deferred because of agricultural occupation. Where the pinch

will come on the aircraft industry is obvious when these figures are analyzed.

The dependency deferments are almost entirely pre-Pearl Harbor fathers and these registrants are, for the most part, of the older age groups in which there will be a higher rate of rejection on physical grounds.

► **Experience Factor**—In addition, and affecting the aircraft industry directly, a larger percentage of these registrants has acquired occupational skills through long experience and will be considered for deferment as necessary men in industry.

At the same time, a great many younger men have acquired technical skills and experience, so that their loss would be serious to aircraft production.

Selective Service is cognizant of this situation, however, and there is a strong feeling in Washington that it will be worked out. Meanwhile, there is a possibility of a definite effect on the aircraft industry, which already has performed a production miracle and is going to have to continue to do it, even in the face of the record-breaking 1944 schedule.

## Airframe Production Shows Weight Gain

December munitions output holds at November level.

The output of munitions last month was at the same level as in November and maintenance of the November production level was accounted for primarily by the fact that airplanes were up five percent by weight (a total of 8,802 planes).

This was disclosed in the official monthly report issued by Donald M. Nelson, chairman of the War Production Board, who noted that munitions production for 1943 was more than 80 percent above the 1942 total. Biggest increases in dollar value were in segments of the production program which are still expanding, with airplanes an outstanding example, being up more than 130 percent, above 1942.

► **Planes Dominate**—Up 15 percent by weight over the November figure, planes in December continued, as in recent months, to dominate the munitions picture. Future months will similarly be featured by what happens in the aircraft group.

Nelson's report, rounding up production, noted as previously an-



### "HELL CAT" STIRS UP AN AUREOLE:

Poised for a takeoff from a carrier, this Grumman Hellcat gathers about itself an "aura" caused by the motion of its propellers. Rapid change of pressure and consequent drop in temperature, most pro-

nounced at the tips of the prop's three blades, create a condensation of moisture. Rotating in accord with the blades, the "halo" moves aft, giving depth and perspective to the phenomenon.

nounced that the aircraft industry produced 85,919 airplanes of all types, compared with a total output of 47,857 planes in 1942.

► **Heavy Types Gain**—Concurrent with this 80 percent increase of production in terms of numbers, the proportion of heavy combat types rose to the extent that airplane production by weight—the only true yardstick—(inclusive of spare parts) increased by 127 percent, from 37,000,000 pounds monthly at the start of 1943 to 84,000,000 pounds in December.

The 85,919 planes turned out in 1943 were the equivalent of 122,000 planes of the 1942-type; and the more than 100,000 planes due to be made during 1944 will be the equivalent of about 167,000 of the earlier types.

► **True Picture**—These figures disclosed in Nelson's report give the true picture of the aircraft industry's contribution to the total war production output.

December production rate, in terms of airframe weight, will have to be increased about 20 percent, exclusive of spares, parts, etc., in order to meet the 1944 goals. The 1944 program, as previously noted, calls for more than 100,000 airplanes, with emphasis on the heavier types.

► **Weight Gains to Continue**—Thus, with the increased production of the heavier bombers of the B-29 type, and the introduction of other

new and high-performance types, there will be a general leveling off of production in numbers, but production of aircraft by weight will continue on the uptrend.

Aircraft, including spares, parts, etc., will remain an expanding program—to go up more than 65 percent in 1944 over the 1943 total.

## Corsair Output Soars

Production of Corsair fighters for the Navy equaled or exceeded production quotas every month of 1943 except February, according to Rex B. Beisel, general manager, Chance Vought division of United Aircraft.

Beisel reported output during the second half of the year came within a few planes of doubling the total for the first six months and that the rate of production increase for last year was over the national average of two and one-half times the 1942 output, with a total of approximately 2,000.

## Gear Firm Perfects New Actuator

A multiple gear reduction torque shaft aircraft actuator has been developed by the Western Gear Works, Pacific Gear plant, designed for extension and retraction of wing flaps, landing gears, landing

gear doors, nose wheels and doors, bomb bay doors or similar applications.

The actuator weighs about 17 pounds, yet has an adjustable maximum slip torque capacity up to 600-inch pounds. It is 14 7/16 inches long, 5 inches wide and 5 1/8 inches high. It has an output speed of 110 rpm. at 573-inch pounds. An externally adjustable clutch guards against overloads. A General Electric motor is used.

## General Acquires Tennessee Aircraft

Adds aluminum alloy fabricating unit to large glider facilities.

General Aircraft Corp., peacetime producer of Skyfarer aircraft, and currently one of the largest manufacturers of gliders for the Army Air Forces, has acquired Tennessee Aircraft Co., of Nashville, Tenn.

H. J. Maynard, Jr., general president, said Lewis E. Reisner, president of the Tennessee firm, will remain in complete charge of its large subcontracting business. Maynard added that acquisition of this company rounds out General Aircraft's operations by adding an established aluminum alloy fabricating unit to its already large glider manufacturing facilities.



### CONVAIR'S UNPUBLICIZED PRODUCTION LINE:

Like a miniature factory assembly line is the Model Shop at Consolidated Vultee Aircraft Corp.'s Downey, Calif., plant, where models of Convair planes, exact even to scale machine guns and carefully formed plexiglass blisters, are constructed for engineering use. Harvey and Howard Doering, twins who build the models, put finishing touches on two of the planes. Planes shown are Navy versions of the Liberator.



# NOW A DOT OF SILVER...

## Increases tube capabilities at 125-mc by more than 20 times!

The new coating of silver around the grid leads of Gammatron tubes answers one of the most baffling problems in high-frequency communication.

Until W. G. Wagener, chief engineer of Heintz and Kaufman Ltd. hit upon this simple solution, the life of all transmitting tubes at high frequencies was relatively short. Even tubes such as the HK-254 lasted only a brief 50 to 100 hours at 125 megacycles when very heavily loaded. The trouble was always the same . . . the glass around the grid lead would crack, and the tube would be ruined.

Heintz and Kaufman engineers found that the grid bead crack was caused by a change in composition of the glass adjacent to the tungsten. This change was due to a minute current flow resulting in electrolysis.

The silver coating now intercepts this current far

enough away from the grid lead so that the glass immediately surrounding the lead retains its normal characteristics. Thus Heintz and Kaufman's patented coating enables such tubes as the HK-54, HK-254, and HK-454 to operate at high frequencies at higher powers for as long as 2000 hours—one Gammatron now outlasts 20 to 40 ordinary tubes without the silver dot!

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*Gammatron Tubes*

## Russell Warns Aircraft Industry Of Heavier Army, Navy Demands

President of AMA says ultimate result of war rests squarely on the shoulders of manufacturers; cites production records to date.

Frank H. Russell, president of the Aircraft Manufacturers Association, warns in his annual report that the war is still far from being won and adds that "we must constantly remember that the primary burden still rests squarely upon the aircraft industry and the ultimate result will depend upon the unfaltering completion of the aviation program in the United States."

"We can take pride, however," he says, "in the realization that the single greatest accomplishment which has brought this country and our Allies so far on our way to final victory has been the tenacity with which our manufacturers have adhered to far-sighted production schedules and the maintenance of supremacy in the quality of our products through persistent leadership in basic research and design of our combat equipment."

► **15 Models Excel**—Russell reported that of 22 types of airplanes now in service, at least 15 different models designed and built in this country have been acknowledged to excel all others in their respective categories.

"Never before has the art of aviation made so much progress," he said, "and through it all, the most advanced ideas have been made available to all manufacturers through this Association. The sound principles underlying our cross-license agreement have been clearly demonstrated."

► **No Patent Fights**—Russell noted that there has been no wasteful litigation or delay due to injurious controversy over patents in the aircraft industry "and it is now inevitable that our leadership in all types of military aircraft will be continued until our enemies have been defeated." Mr. Russell is the father of Frank F. Russell, manager of the National Aircraft War Production Council.

Samuel S. Bradley, principal managing executive of the Association since 1917, was re-elected Chairman of the Board at the Association's recent annual meeting. Bradley, an aviation pioneer and highly regarded throughout the industry, has been the moving

and guiding spirit, with Russell, of the Association which administers the patent cross-licensing agreement for the aircraft industry in the United States.

► **Russell Re-elected**—In addition to Bradley, the Association renamed Russell as president, and John A. Sanborn was re-elected general manager.

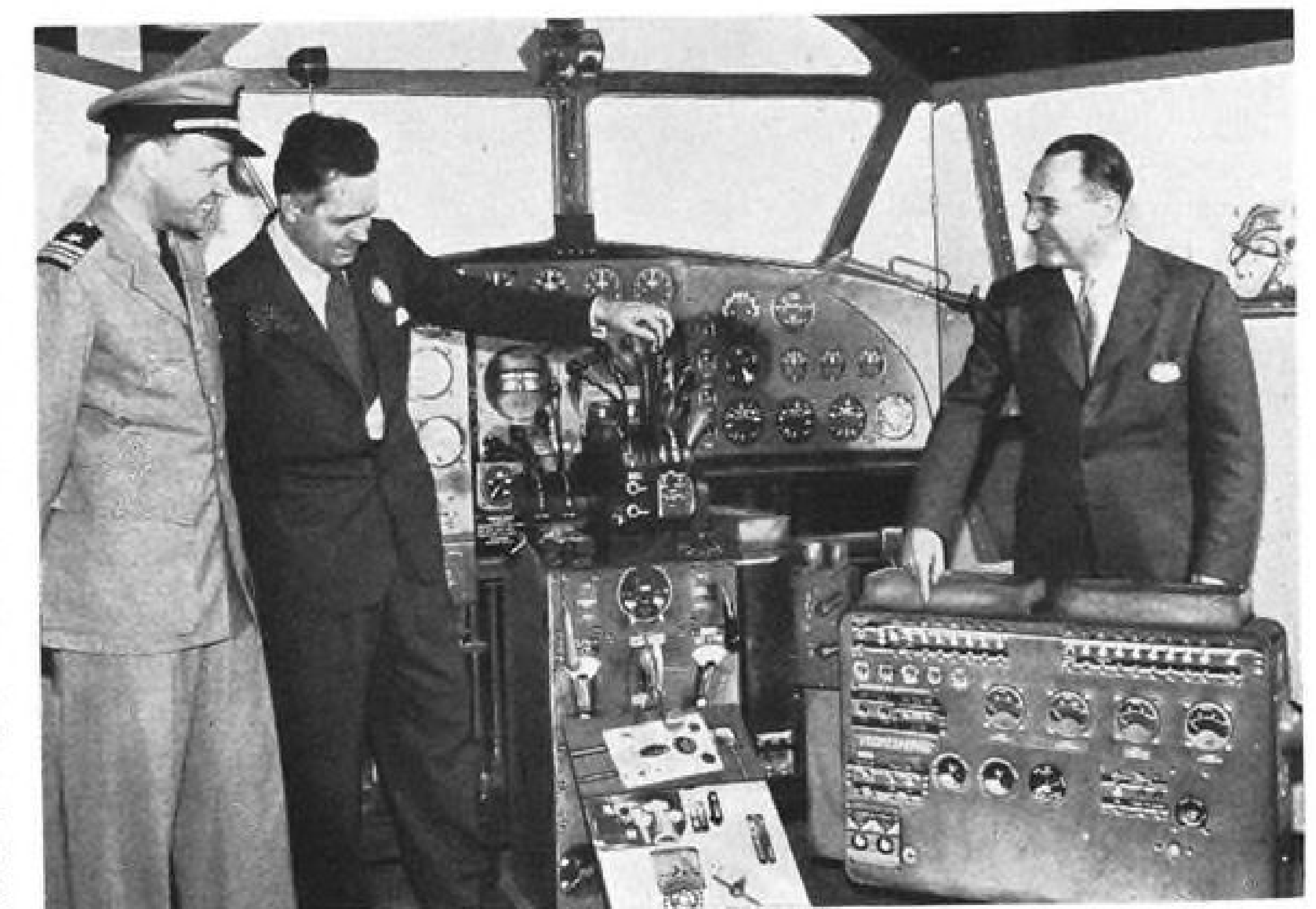
Members of the Association reported 206 patents relating to aircraft during 1943 and a total of 1,434 patents has been brought under the operation of the cross-license agreement to date.

► **Confidence**—Looking ahead, Russell said he had no hesitancy in prophesying "that the same principles which have served as a guide and an inspiration to our manufacturers through this difficult struggle will again carry us on through the period of readjustment

into a corresponding position of world leadership in the field of commercial aviation after the present hostilities have been ended."

The following vice-presidents of the Association were elected: Clayton J. Brukner, Waco Aircraft; Robert E. Gross, Lockheed Aircraft; Joseph T. Hartson, Glenn L. Martin Co.; J. H. Kindelberger, North American Aviation; John M. Rogers, Douglas Aircraft; Raymond S. Pruitt, Consolidated Vultee and Raycroft Walsh, United Aircraft Corp. James P. Murray, of Boeing, was re-elected secretary, and William E. Valk, Curtiss-Wright and Wright Aeronautical Corp., was elected treasurer.

► **Directorate**—The new Board of Directors of the Association for 1944, in addition to Bradley and Russell, are: Alexander T. Burton, North American; Charles H. Chatfield, United Aircraft; Frank N. Fleming, Douglas Aircraft; G. Sumner Ireland, Lockheed Aircraft; George D. Jones, Glenn L. Martin Co.; Charles Kingsley, Grumman Aircraft Engineering Corp.; James P. Murray, Boeing; Raymond S. Pruitt, Consolidated Vultee; William E. Valk, Curtiss-Wright and Ray P. Whitman, Bell Aircraft.



### LOCKHEED'S MOCK-UP PANEL:

Transitional training of future PV-1 and B-17 pilots has been simplified by a new type of instrument panel mock-up recently developed by Lockheed Aircraft Corp. for Army and Navy training centers. It is built to a scale of three-to-one. Instrument dials are enlarged photographs but throttles and engine controls are enlarged, movable versions of those on the planes. The panel serves as a classroom itself. Lt. Comdr. J. O. Christian and Mac Short, Lockheed vice-president in charge of engineering, check with Maurice Cleary, assistant to the vice-president—sales.



## TRANSPORT

### CAB Reveals Data on Survey Of Air Needs in Caribbean

Report of F. H. Crozier's Research and Analysis Division shows need for well-planned coverage with U. S. air routes.

By MERLIN MICKEL

The obvious need for well-planned coverage of the Caribbean area with United States air routes has been pointed up in a comprehensive statistical analysis on the trans-Caribbean and offshore-island areas by F. H. Crozier, of the Civil Aeronautics Board's Research and Analysis Division, and his staff.

Probably the most complete study ever made of this area's air transport history and potential, the analysis leaves conclusions to the Board on all controversial issues. Five months of work by the division went into its preparation, in anticipation of its introduction as an exhibit in board hearings May 15 on the Caribbean route question. Hence the report is heavily documented with tables and charts.

► **Not a New Policy**—The analysis does not represent a new Board

policy. Moreover, it is consistent with detailed studies in connection with domestic new route proceedings, and the Board's new route procedure, which obviously is intended to reduce the necessity for extensive exhibit preparation on the part of the carriers. It also is in line with the Board's efforts at a concise and thorough record in such matters. An example of the latter is the study made some time ago by the division on overseas mail and another on overseas passenger traffic. Only the first of these has been published.

The current report is expected to be of considerable aid to airlines involved in Latin America route applications, in supplement to their own presentations.

► **Strategic Importance**—It demonstrates the strategic importance of the countries in the area—econom-

ically, politically and from a military standpoint. It shows significance of short haul traffic as a support for traffic-poor segments of trunk line systems. And with the Eastern section of the United States the main source and destination of Western Hemisphere air traffic from the Caribbean area and South America, it indicates plainly that the principal air gateways to the South lie in the Floridian and Gulf area, even for traffic from the United States' West Coast. The entire South American contingent is east of Miami's longitude.

The study segregates the region under consideration into three areas on the basis of air travel or geographical characteristics. In the first are Mexico, Cuba and the Bahamas. Air travel with the United States, with which this group is contiguous or adjacent, constitutes all or a major part with each. The second segment, the Caribbean region proper, consists of island and continental shore countries of the Caribbean exclusive of the first group. Included are Central America, Colombia, Venezuela and the island community. "The relatively heavy air traffic generated in this region," says the survey, "combined with transit traffic between North and South America, gives it extreme importance in this study." South America, except Colombia and Venezuela, is in the third section.

► **Representative Years**—The year 1938 was selected as most representative for sea and airborne pas-

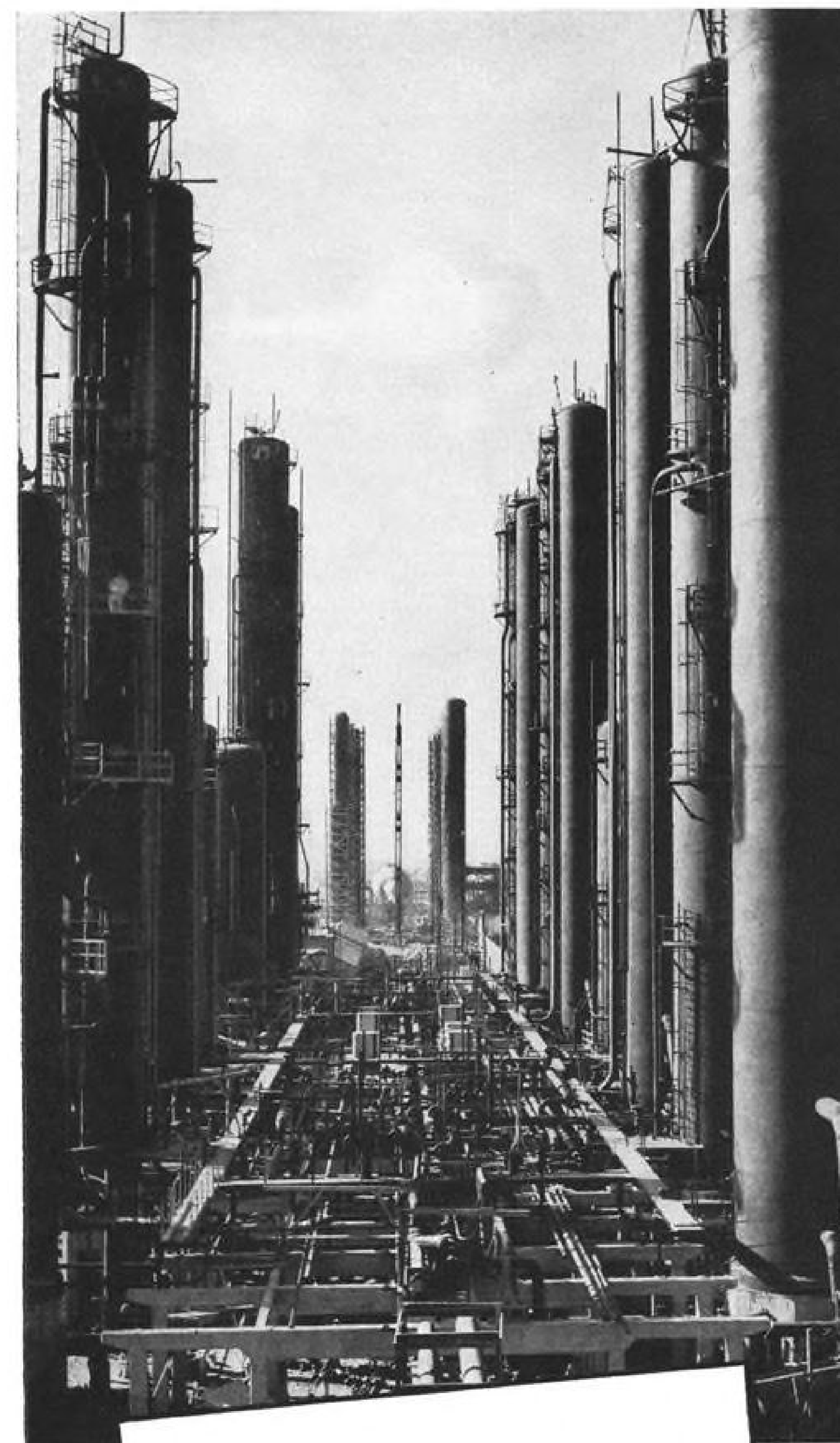


#### CONSULTANTS BUSY AT KANSAS CITY AIRPORT MEETING:

To help delegates with their individual airport problems, this consulting room was set up at the Mid-West Airport Planning Conference at Kansas City. In addition to hearing speakers on the many general problems of development and management, the men

who attended the conference thus were able to talk personally with experts about the questions peculiar to each situation. More than 600 representatives of 140 municipalities in 14 states gathered in the Mid-West metropolis for the meeting.

## COMBINED OPERATIONS... oilmen's style!



BUILT AND OPERATED through oil industry and Government co-operation... without profit... for the successful prosecution of the war... and a victorious peace.

**Combined Operations** is a Commando term for a fierce, concentrated attack on an objective with every available weapon.

And it was with just such tactics that the petroleum industry waged a campaign for one of America's most critical war objectives... *Rubber!*

If America was to have rubber, we needed a lot of butadiene fast! So the Government and representatives of many oil companies held a conference. It was suggested that one big plant could produce more butadiene cheaper and faster than five small plants.

Everyone agreeing, the Neches Butane Products Company was organized by Atlantic, Gulf, Pure, Socony Vacuum, and Texaco. This nonprofit organization had access to the finest research facilities, the pooled technical knowledge, and the best brains in the petroleum industry—at no cost to the Government!

That's... *Combined Operations!*

Well, the problems the Combined Operators ran into were numerous... some of them seemed downright impossible.

*But all of them were licked!*

During the last 24 months, the Neches Butane Products Company has grown from an urgent idea into a plant that will produce enough butadiene to make 246 million pounds of synthetic rubber a year! In just 24 months, 314 bare Texas acres have been covered with a multi-million dollar installation of intricate equipment—equipment that will soon be helping to do the work of 45,000,000 rubber trees!

*Combined Operations with a vengeance!*





senger comparisons, and 1940 was chosen for mail. Because Pan American Airways and Panagra were the United States Flag carriers in the area, and served every principal traffic center, an analysis of the operations of those trunk-lines and their affiliated companies forms the basis for a five-year study—1938 to 1941—of United States air travel in the area.

Of 665,771 air travelers attributed to the total region in 1941, they were credited with 179,847, or 27 per cent. But they accounted for about half the passenger miles flown, the disproportion being due to the longer average journey of the trunk line foreign traveler.

► **Trunk Line Travelers**—Yet in 1941, according to the survey, the total number of travelers carried by both Pan American and Panagra was within the passenger volume range of the medium sized domestic airlines. "They totaled about one-half the number of passengers carried by Pennsylvania-Central, but the passenger miles were approximately twice those flown by this domestic carrier."

Trunk line travelers attributed to the first area—Mexico, Cuba and the Bahamas—were "somewhat more numerous" than those carried domestically by Delta, and the second area accounted for fewer than those who traveled by Chicago and

Southern. No comparison with domestic carriers was made for the third area, because of the long average of its journeys, but the study estimated that passenger miles there ran between 30 and 35 million in 1941.

► **Backbone**—"The backbone of international air service in the whole region under consideration," it is stated, "is quite obviously afforded by travel interchanged with the United States. The relatively heavy air travel in the Caribbean area is almost wholly with the United States. In South America, however, travel with the United States represents an important but not dominant proportion."

"Were the non-United States travel subtracted from the 1941 total flow in this area, it seems quite evident that the remaining traffic would not have afforded very substantial financial support for the number of through international schedules operated in this region during 1941."

► **Availability**—Any appraisal of availability of air travel or air travel growth, the report said, must rely largely on travel originating in or destined to the United States. It was found "almost impossible" to appraise future possibilities for trunk line carriage of express and cargo, but comment was made that "they should be much greater rela-

## Boundary Lines

Elimination of international boundary lines as air traffic transfer point was suggested in the report by CAB's Research and Analysis Division on Latin America service patterns. Citing advantages to travelers to enplane at point of origin and deplane at destination without transfer, the report stated:

"It appears that the convenience of the greatest number of first and second area air travelers would be served by the elimination of the United States international boundary as a necessary transfer point for air traffic."

"This might be accomplished: by extension of international routes to interior United States domestic traffic centers; by extension of United States domestic routes to foreign territorial destinations or by equipment interchange arrangements between international and domestic carriers, depending on the particular cross-boundary and other considerations involved."

The first area in the study includes Mexico, Cuba and the Bahamas. The second comprises island and continental shore countries of the Caribbean exclusive of these, including Central America, Colombia and Venezuela with the island community.

tive to the purchasing power of the region here under consideration than they are in the United States domestic field. They should be particularly good in respect to island and interior continental areas." The assumption was, however, that passengers will continue to be the principal source of trunk line air traffic in the region "until such time as aircraft become available that are especially and successfully designed with a view to the economical transportation of cargo."

► **Advantages**—"It seems clear that the principal advantages of air over sea travel between the United States and Latin America have been in travel time saved and in comfort. In terms of cost, air travel has generally been at a disadvantage."

"Just as it is incompatible with the principles of freight generation to predicate large cargo growth on the basis of the favorable air transport characteristics of cut flowers, drugs and other typical air express items, so it is also un-

reasonable to predict a large air travel increase at fare levels above the range of any considerable total market."

► **Eight Factors Listed**—One thought-provoker in the analysis was its listing of eight factors of primary importance in influencing the growth of international air traffic in Latin America. These were:

► Degree of mutual understanding and good will prevailing among the many separate political entities included in the total region.

► Level of mutual prosperity in these countries.

► Degree of economic, social and cultural intercourse between the various countries, particularly between the United States and the large countries of the south temperate zone (presumably Argentina).

► Levels of rates charged.

► Developmental state of airways and airports.

► Service standards in terms of frequency, adequacy and safety which are provided for and maintained.

► Degree to which conflicting national air transport and non-air transport interests are reconciled and subordinated to the convenience of the international traveler.

► Efficiency of the over-all service pattern, which will evolve through authorization of various routes and service privileges to serve the best interests of international air transportation.

## CAA to Expand Air Traffic Control

Extension of system to quadruple capacity of organization.

Improvements and expansions in its air traffic control system planned by the Civil Aeronautics Administration will increase its capacity to at least four times what it is at present. Furthermore, these plans are ready and can be placed into effect in the immediate future.

Glen A. Gilbert, chief of CAA's Air Traffic Control Division, discussed them in a talk on air traffic control before the American Institute of Electrical Engineers at New York City.

► **Improvement Program**—The improvement program, he says, is being activated as rapidly as circumstances permit. It covers an improved navigation system using very high frequency radio ranges,

provision of more adequate air-ground point-to-point communication facilities, establishment of an automatic system for flight data handling, and improved control procedures.

Where airports now handle about 10 aircraft movements an hour under instrument weather conditions, they may be able to handle 40. And in place of the 10 minute separation between planes on the nation's airways—on some 15 minutes—separation time will be cut to an estimated 5 minutes.

► **Standards**—Gilbert believes the highest standard of efficiency of air traffic control—safe landing of all aircraft at intended destination exactly on schedule, or in normal flight time—"must be closely approached before air transportation can become fully mature." He believes the war will bring technical improvements, but expects delay before they can be worked out to apply to peacetime requirements. Despite developments, the weather will continue after the war to be a factor affecting flying, at least until 1950.

Among the possibilities of future aircraft equipment for air traffic control, he mentioned "collision warning device," "automatic position reporter," and "traffic clearance indicator," the last two of which may eventually combine in a "block signal system," in the distant future.

► **Automatic Reports**—There may come a time, Gilbert says, when voice as a communication medium can be eliminated in the control system, through automatic transmission and posting of position reports, and provision for automatic transmission of control instructions from ground personnel to pilots.

He estimated that ground facilities, to cope with these improvements, will require about 850 air stations in the next few years, more than three times the present number of scheduled air carrier stops. Contemplated is a service pattern to afford traffic control to all air space in continental United States. Civil airways control, of course, would continue.

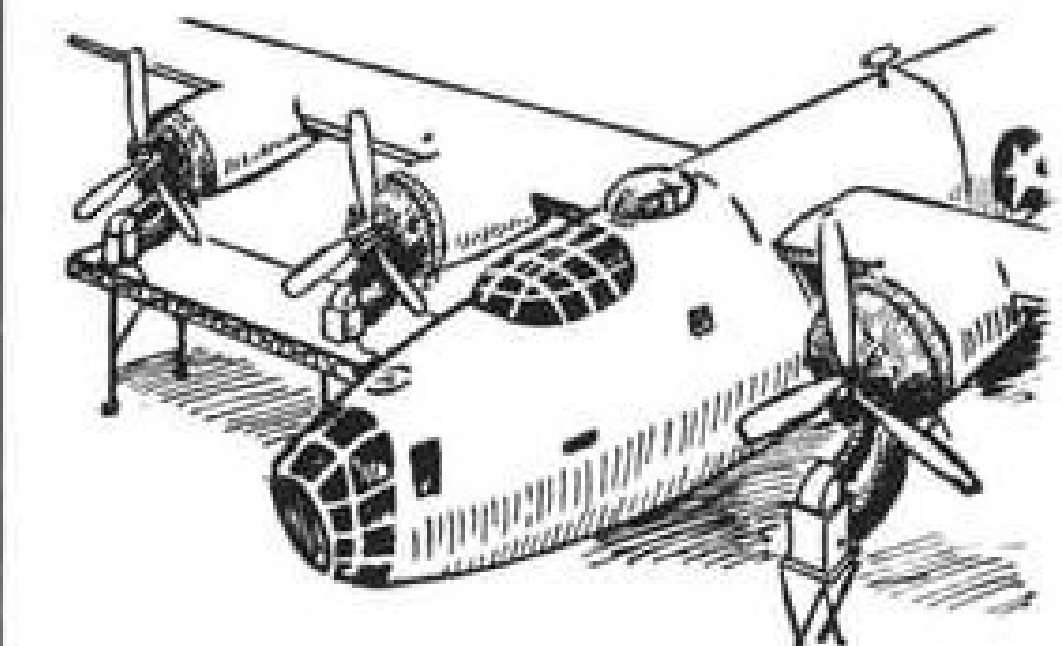
Present airway traffic control centers are connected by about 35,000 miles of leased telephone lines, serving more than 1,600 individual stations. More than 11,000 miles of teletype circuits are in operation, and CAA expects to extend this service to 25,000 miles during the next twelve months.

## HUNTER DEVELOPS SIMPLE GASOLINE UNIT PREHEATER

One-to-an-Engine Method Has Advantages of Flexibility And Fuel Economy

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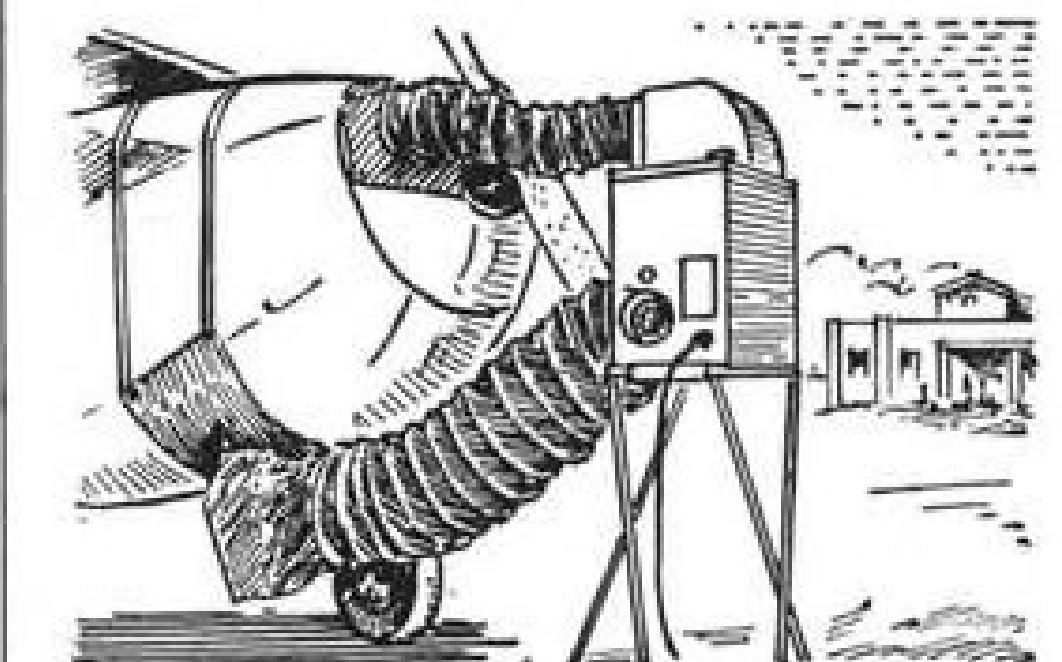
CLEVELAND, OHIO—The problem of pre-heating aircraft engines in severe weather has been simplified by the new gasoline burning preheaters recently announced by Hunter and Company of this city. The Hunter units are light and



compact, can be easily handled by one man, are used one unit to an engine, deliver a blast of hot air directly over all working parts.

The Hunter units can be used economically for either single or multiple engine planes. Each unit, weighing but 47 pounds, delivers up to 25,000 B.t.u. per hour, recirculating heated air in an engine housing through the close-coupled flexible duct system which assures useful delivery of a maximum proportion of heat. This makes it possible to pump hot air over a cold engine in sufficient volume to bring it to easy starting temperature in a matter of minutes, even in severe weather.

Ducts attach to the breather openings of an engine cowl of a small plane, as illustrated below, or to special airtight engine covers provided for radial installations, above. Rapid heating and recirculation of air within the enclosed area results in even heating of all working engine parts. Oil sump, cylinders and valves can be readied as well as carburetion and ignition system, thus preventing the too-well-known dam-



age grind that occurs in the first revs of an engine forced into a cold start.

Complete information on the Hunter Preheater, and delivery dates, may be obtained by writing or wiring Hunter and Co., 1540, E. 17th Street, Cleveland 14, Ohio.

(Advertisement)



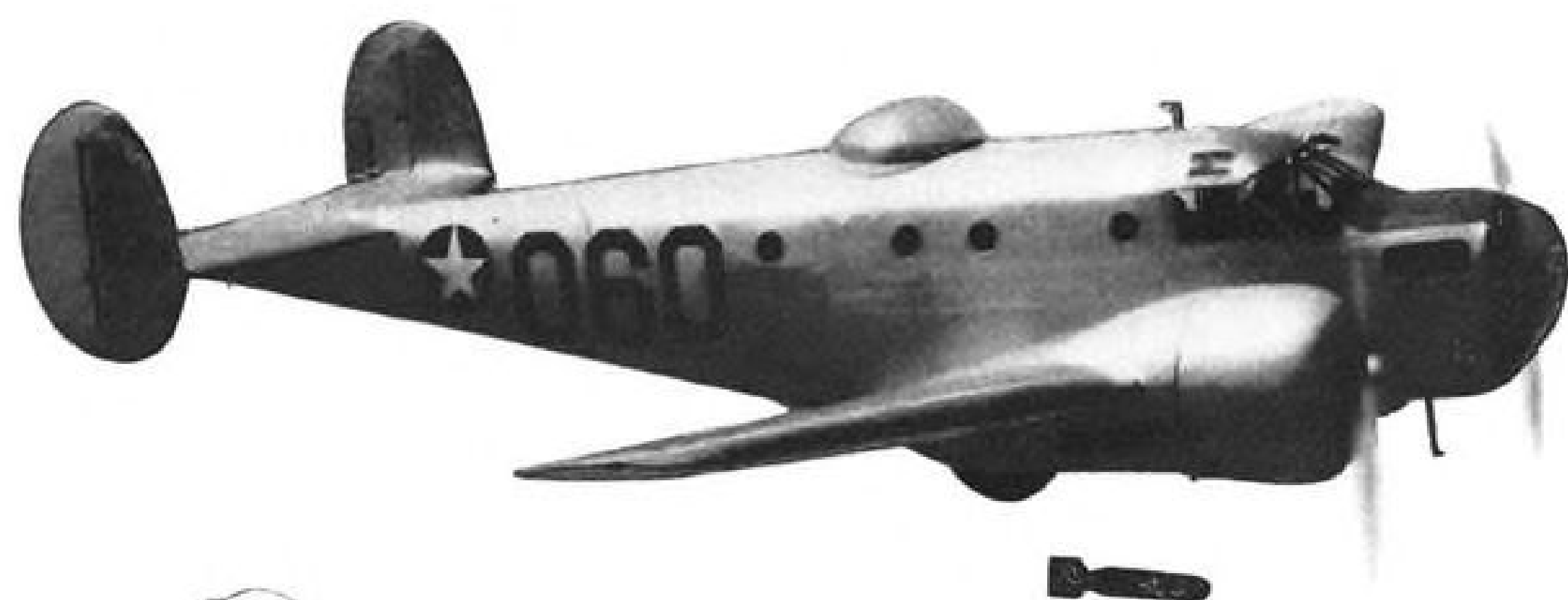
### AIRPORT CONFERENCE SPEAKERS:

Among speakers at the Mid-West Airport Planning Conference at Kansas City were (left to right, seated): Frank W. Hart, educational consultant for the Civil Aeronautics Administration at the University of California; E. Lee Talman, executive vice-president, Transcontinental & Western Air; O. E. Crossey, conference chairman; (standing, left to right) John M. Hagen, Aeronca Aircraft Corp.; Dr. John Monteith, Jr., Washington, U. S. Engineers, and Lou E. Holland of Kansas City.



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Official Photograph U. S. Army Air Forces

# Beech Aircraft

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## Post-War Traffic Possibilities Underestimated, Loening Declares

WPB aircraft consultant sees regulated competition as America's secret weapon against European monopoly system in battle for air transport trade.

One of those who think possibilities of international air travel after the war have been underestimated is Grover Loening, consultant on aircraft at the War Production Board. Traffic in this field, he believes, will be 20 to 50 times the figure estimated by advocates of the "chosen instrument" policy in post-war aviation.

Moreover, he is opposed to this policy. Competition, he thinks, is the life of the future air trade between this country and other nations.

► **Regulated Competition** — "The only secret weapon that we really have with which to win out against the monopolies that the European countries, particularly Great Britain, seem so intent to set up," he says, "is to run our international aviation on a regulated competitive status—competition enough to give the utmost improvement and keenest development in excellence of our service, but a regulated competition that will not allow cut-throat waste."

In this speech to gladden the hearts of domestic airlines, who

favor competition, Loening addressed the Foreign Policy Association at Minneapolis last week on the future of air transport expansion. His address presented his own views, but he speaks with authority.

He was an early aircraft engineer, manufacturer and aviator, and wrote the 1937 report to Congress on Aircraft and the Merchant Marine.

► **Pan American**—Loening said Pan American Airways' foreign business "is almost large enough now to permit others to share in this lucrative field," a field in which he observed that Pan American has done "only moderately good work."

Time, rather than numbers, should be the gauge of post-war trans-Atlantic estimates, he suggested. Anticipating 15 hours for that trip, he said, "what we really should take are the figures in the United States of the number of people on all the railroads and all the buses that take trips to places 15 hours away."

► **United Air Lines**—Thus he figured that United Air Lines' figures

## Highlights

Highlights of speech by Grover Loening, WPB Consultant on Aircraft, before a Minneapolis audience:

► Of the aircraft manufacturing industry: "We are delivering more transport aircraft planes in carrying capacity—in just two weeks—than we had in operation on all the airlines of the United States before Pearl Harbor. Since the replacement of airline equipment was formerly figured on a 20 percent basis, due to use and obsolescence, about two days' deliveries from this industry per year would be all that would be needed to keep our former airline system going."

► Of Pan American Airways, by whom he once was employed: "The transoceanic air mystery built up so cleverly by Pan American Airways to further their development has been exploded, but in no detrimental way to this great company—rather as evidence that we are not dependent on the eggs in this one basket at all."

► Of post-war planning: "Personally, I feel there are too many post-war plans and do not wish to join by submitting an additional one."

► Of the railroads: "As soon as we submit judgment as to aviation's progress and development to the old railroader—twirling his heavy gold watch chain—we will kill it. Everything gets old and lives its life. The railroads cannot be allowed to claim the right of eternal life via the monkey glands of aviation. Their business should be to rival aviation by super streamline trains—super luxury—super cheapness."



### UNITED MECHANIC GETS "NO SMOKING" PAYOFF:

Fifteen years of observance of "No Smoking" signs in hangars paid dividends for Charles Storme, lead mechanic for United Air Lines in Chicago. Co-workers gave him a package of chewing tobacco for each of his 15 years with the company when he received United's 15-year service pin. Storme (center) is shown with (left to right) H. W. Mossman, chief mechanic; O. C. Kline, lead mechanic; R. D. Edwards, UAL Chicago station manager, and William Manley, lead mechanic.

of some 51,000 trans-Atlantic passengers in the first year after the war—or 200,000,000 passenger miles—is too conservative. "Look how prognostications can blow up in your face," he said. "It so happens that Pan American Airways has already officially reported that they flew 475,000,000 passenger miles this last year alone." United and Pan American, he commented, should read each other's articles.

Loening contends that this is not the time to legislate on post-war methods of handling air transport. It's all right to discuss the subject, but "we had better not sign up anything—certainly not anything like a monopoly such as is being



threatened in the Senate right now."

► **Optimistic**—His observations on the domestic situation also were optimistic. Probably the aircraft manufacturing industry will be about 10 percent of its present size (higher than other estimates), but the air transport industry by 1950, he feels, is likely to have about a ten-fold increase in passenger travel, 50-fold in cargo carrying, and 25-fold in private planes. And there is a likelihood that the mail load will be swollen by virtually all first-class mail beyond overnight distances.

"All of this put together, however," he says, "can only make use of three to five thousand large-size transport airplanes." Such an industry, if the war ends soon, should have a gross income of around two billion dollars a year—"not very stupendous" in the domestic field compared with the income.

► **Planes vs. Railroads**—Loening sees a distinct difference between selling transportation by railroad and selling it by air, although the end product—transportation—is the same.

"If the air is going to take some business from the railroads, that is just inexorable progress. As a matter of fact there is fear of this . . ."

That, he believes, is the basis for surface carrier opposition to the Lea Bill, even though they have seized on the states' rights issue as the vehicle for the opposition. Actually, the states' rights matter isn't very serious, "because flying cannot get very far on state operation alone and would sooner or later have to submit to federal regulation."

► **No. 1 Problem**—He sees the question of monopoly vs. competition as the No. 1 problem in the international picture. Pan American, he told the Minneapolis audience, has built up "a great glamour, prestige and mystery of flying the oceans," but actually "did only moderately good work as reviewed in a fair and unbiased way." He saw the war and the Air Transport Command as cutting into Pan American's prestige.

United Air Lines joined Pan American in advocating one-line international operation, with the argument that the percentage of steamship travel the airlines would get would be so small that 15 planes could carry the North Atlantic potential market next year and 43 by 1948, but "actually the traffic will be 20 to 50 times any

## Hits Shippers' Bid

Should shipping companies be allowed to enter the international air transport field? Grover Loening, air consultant at the War Production Board, answers this with another question.

"If the shipping companies were so fast asleep," he said, "in 1937 (when the Maritime Commission gave them the opportunity to enter the air business), as to fail to show any serious interest and to allow the air interests then to completely influence Congress . . . then are we justified in entrusting the further development of aviation to their hands now?"

Besides, "we would be turning over the air business to that section of American international enterprise that allowed foreign vessels in the pre-war era to capture 70 percent of the United States foreign commercial business."

such figure." Arguments for a "chosen instrument," Loening says, "overlook the point that the operator of the fastest, most comfortable and safest airliner" will win in the airline field.

He dismissed questions of air rights or post-war air bases as typically in the field of "vague post-war planning," and said another item that must await war developments is that of freedom of the air, whether it be freedom of transit, freedom of facilities, or freedom of air commerce.

## Mass Air Transport 'Many Years Away'

Patterson says fares must be cut to 1½ cents a mile compared with 5.1 cents of today.

The airplane will not be a mass transport facility for many years, until it can reduce average passenger rates from 5.1 cents to 1½ cents a mile, but domestic air transport within four years after the armistice should increase five times over the best pre-war year.

William A. Patterson, president of United Air Lines and the domestic industry's leading conservative, told a Chicago group that in the Pacific's best year, 1930, when 25,000 travelers crossed that ocean, one 100-passenger airplane a day

would have handled the entire traffic.

► **43 Planes for Atlantic**—Still basing his projections for the future on figures from the past, he repeated his contention that 43 100-passenger planes could handle all North Atlantic "Class A" passenger traffic "which we see for even five years from now."

The five-time growth of domestic air traffic four years after the war would see United with a \$100,000,000 business against \$18,000,000 in 1941; employees totaling 18,500 against 4,300 in 1941, and 50 planes of 50-passengers with 40 planes of 21-passengers instead of 57 of the smaller type three years ago.

► **Out of Subsidy Class**—He said the airlines are on a sound financial basis, out of the subsidy class, that probably the greatest technical development had been in radio devices which will "greatly promote" schedules and safety. He reiterated adherence to the chosen instrument policy for U. S. participation in international flying.

Another United official, Ray D. Kelly, superintendent of development, stressed importance of "down to earth" engineering before another Chicago meeting, using other data from the company's research division.

► **Four Airliner Types**—After the war, aviation no longer will depend so largely on other industries for a wide range of products. Its engineers will seek maximum strength with maximum loads and their success will be reflected in improved articles in other fields.

Kelly sees four possible commercial airliner types within five years after the war:

► A four-engine, 62½-ton, 100-passenger ship of 250 mph. cruising and 3,000 to 3,500-mile range;

► A four-engine, 35-ton moderate range deluxe sleeper;

► A four-engine 25- to 30-ton "coach" or "club" carrier for both passengers and cargo;

► A twin-engine 16-ton carrier of passengers, freight or both.

## Photos Map Fields

Aerial photographs are helping Civil Aeronautics Administration determine soil texture of airport sites. Successful tests have been made at about 25 CAA airport construction jobs. Fred Grieme, chief of Airport Development, believes the development will be of value in foreign operations.



A pre-war U.S.A.A.F. Kellett\* serving as observer in U. S. Army tank maneuvers.

## Pioneering Peacetime Progress

THE above photograph of a Kellett rotary wing aircraft performing in tank maneuvers was taken almost six years ago!

For almost a decade before that, Kellett engineers were developing and manufacturing successful rotary wing ships. And each year since, Kellett has continued to pioneer progress in the science. With each turn of the calendar have come important advances, as continuous research and in-the-air accomplishments have added to the Kellett organization's total experience.

While war continues, all Kellett production is concentrated on military applica-

tions—important fighter and bomber parts, as well as rotary wing aircraft. But when peace comes, our expanding staff of forward-thinking engineers looks to opportunities for Kelletts to save time and cut costs in a wide variety of peacetime applications: the convenient inspection and servicing of cross country electric lines and oil pipe lines; their use as mail and passenger shuttle craft; services to rural communities; the patrolling of forests and borders; spraying crops and trees. Kellett Aircraft Corporation, Upper Darby (Philadelphia), Pennsylvania.

\*Current Kellett models, developed in cooperation with the United States Army Air Forces, may not be illustrated as yet.

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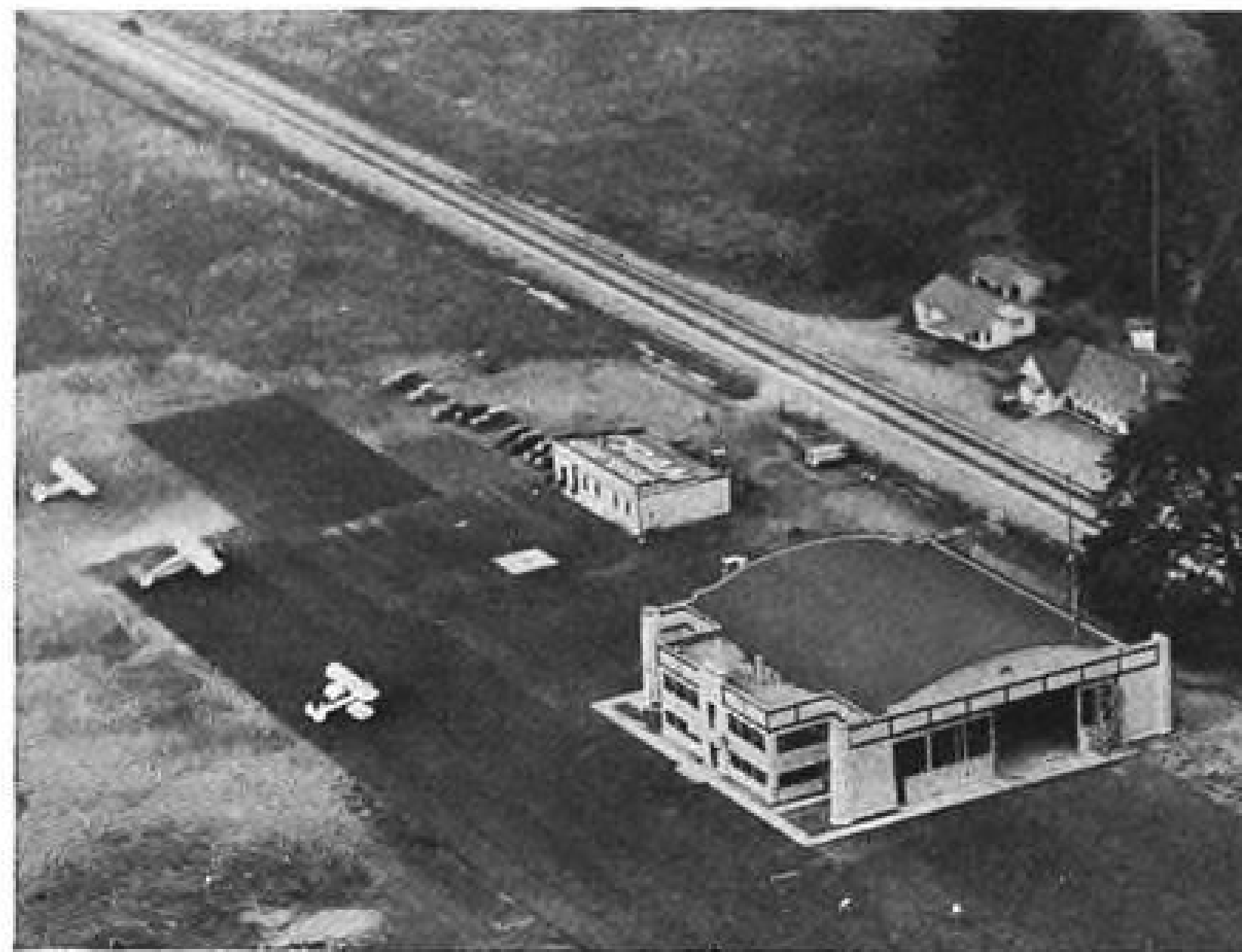
**NAVY AIR BASE HANGAR** (302'x180') Twenty 151' glued-laminated columns were fabricated for this two bay hangar by Timber Structures, Inc. Engineer and contractor: The Austin Company.

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**MUNICIPAL HANGAR.** Pre-Pearl Harbor construction by Timber Structures, Inc. at a municipal airport. Six 80' Bowstring trusses (20' spacing) and supporting columns were furnished for this 80'x100' hangar.



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## AOPA Hails CAB's Simplified Rules

Members urged to send in recommendations for consolidation and forwarding to Board.

The simplified version of air traffic rules suggested recently by the Safety Bureau of the Civil Aeronautics Board received a warm reception with the Aircraft Owners and Pilots Association, which has long protested the rules now on the books.

AOPA not only offered its "heartiest and sincerest congratulations to the Civil Aeronautics Board for this courageous step forward," but printed the proposed revision in its Washington newsletter with the admonition to its member pilots to write their recommendations to AOPA for consolidation and forwarding to the CAB.

► **Opportunity**—"This is probably the most important opportunity you, as a pilot, will have to assist private flying development for the post-war period," the Association told them. Critics have until March 15 to comment.

Meanwhile, feeling was growing in private flying and small plane circles that there should be a further unraveling of restrictive regulations. Reported under discussion were plans of the personal aircraft department of the Aeronautical Chamber of Commerce to propose a new regulations program to the board. CAB officials have frankly stated at various times that they are prepared to receive and consider any ticket which the private flyers themselves care to write.

► **United Front**—Sponsors of simplified regulations know that one of their first important moves must be the presentation of a united

front—or as near united as can be achieved.

In order to do this, they would like to bring together the AOPA, the National Aeronautic Association, the National Air Trades Association, Private Fliers Association, the Aero Chamber's personal aircraft group, and anybody else who wants to join. Of course these organizations will have different ideas and it will be no easy task to bring them to agreement.

Proposals will be made that will startle many a bureaucrat. For example, it will be contended that the government's approved type certificate for each airplane design or modification should be done away with. In place of the ATC, they would simply certify airplane manufacturers to produce whatever airplane designs they choose. The manufacturer can and does hire engineers and inspectors of ability at least comparable to those the government employs. The government's wish to prevent accidents cannot possibly be any more earnest than that of the producer.

► **Certification**—The certification of pilots should be equally simplified, in the opinion of many persons working on the program. It should be the duty of the Civil Aeronautics Board to see that licensed instructors are men of sound experience and judgment. The instructor, in turn, should be responsible for the licensing of new pilots. He should simply okay the man or woman as a person to be trusted with an airplane, or turn him or her down, subject to appeal. There is really no reason for all the costly red tape and examinations, they say. It is just a bad habit.

Contentions that the public must be heavily protected against damage and injury by aircraft are not supported by the facts, say sponsors of rule cutting. Damage and injury by civil aircraft to non-participants are almost negligible, they say.

► **Some Rules Obsolete**—Regulation freedom for airplanes and pilots is supported by the conditions under which automobiles are produced and used, and this record will be brought up and emphasized. Stringent rules now imposed upon owners of private airplanes grew out of early irresponsible building and operation, and are no longer necessary.

It is estimated by those now formulating the simplification plan that the regulation of each pri-

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vately owned airplane, at the beginning of the war, was costing the taxpayers of the country \$2,000 per year, and that in many cases the plane regulated was worth much less than that. It is believed that, when the public is fully informed about this item of taxes, it will react strongly in favor of curtailing red tape.

► **Hammerlock**—The lawyers have a hammerlock regulation and they will be hard to beat, Private Flier Association men believe. Attorneys on the government purse will use every means to continue their jobs. They can argue justifiably that proceedings cannot be taken against unsafe flying and aircraft construction without regulations. For that reason, there will probably be a compromise between those who want a rule for everything, and those who want none.

Those who say that red tape is the main obstacle in the way of private aircraft development will be told, of course, that limited performance of existing airplane types, and the cost of their operation, are the real obstruction. But most everybody agrees that a generous blue-penciling of regulations will help.

## Delta Air Lines Files for New Route

Application seeks to extend line for New Orleans-Cleveland link.

Delta Air Lines has asked the Civil Aeronautics Board for authority to extend its lines to cover a new direct route between New Orleans and Cleveland. Delta's routes now terminate at New Orleans and Cincinnati. The proposed route, via Hattiesburg and Meridian, Miss., Nashville, Lexington, Cincinnati and Columbus, would link the two present routes and add 856 miles to Delta's line.

Among the handful of applicants during the week was the Bremerton-Tacoma Stages of Bremerton, Wash., which proposed scheduled passenger, mail, baggage and light express service by conventional aircraft or helicopter on a circle route from Bremerton via Port Angeles and Port Townsend, Wash.; from Bremerton to Tacoma; Bremerton to Olympia, one route via Bow Lake and Tacoma and the other via Shelton; and from Olympia to Portland, Ore., a total of 365 miles.

► **Nevada Line Files**—Nevada-Pacific airlines at Lovelock, Nev.,

applied for a certificate authorizing scheduled air transportation of Mail, passengers and property over 10 routes in Oregon, California, Idaho, Nevada and Utah, for a total of 2,093 miles. Routes would run from Reno to Medford, Ore.; Medford to Boise, Idaho; Boise to Elko, Nev.; Elko to Ely, Nev.; Elko to Reno; Reno to Tonopah, Nev.; Tonopah to Las Vegas; Fresno, Calif. to Tonopah; Tonopah to Ely, Nev., and Ely to Salt Lake City.

## Jet Airliners Seen Ten Years Distant

Prominent British aircraft designer sees few major changes in immediate postwar era.

Jet propulsion will make progress but will not be in common use for airliners in less than ten years, a leading British aircraft designer believes.

Looking into the future, Roy Chadwick, chief designer of A. V. Roe & Co., maker of the Lancaster bombers and the Avro York, their commercial conversion, says:

► Immediately after the war most airline flying will be at about 200 mph., with some special schedules at 250 mph. cruising. The big jump in speed will come when jet-propelled craft operating at high altitude with pressurized cabins are fully developed, but this is "some way off."

► Chief airliner type will remain the conventional monoplane of today, although the flying wing will be developed in large sizes with power plants enclosed.

► Pressurized cabins "will undoubtedly become common" immediately after the war.

► All sizes of civil airliners from 10,000-15,000-pound feeder-liners to 100-ton craft will be used during the ten years after the war. The helicopter will receive much attention but will represent only a small percentage of civil aircraft.

► Light alloys appear to be the ultimate answer but possibly some synthetic material will be developed in time to replace metal. The stressed-skin monocoque structure will be retained. Smooth covering of surfaces must be developed.

► Much work will be done to provide light, yet comfortable and pleasant furnishings in the cabins. Air conditioning will be an important study.

## Aerovias Braniff Gets Mexican Permit

Application for operation over 2,643 miles of air route approved.

Aerovias Braniff, S. A., a new corporation in Mexico, has acquired permission from the Mexican government to operate 2,643 miles of air route in that country.

T. E. Braniff, president of Braniff Airways, controls the new corporation, but its ownership is to be transferred to Braniff Airways if approval is obtained from the Civil Aeronautics Board.

► **Serves Gateways**—Braniff serves the Laredo-Nuevo and Brownsville-Matamoros gateways, northern termini for the Mexican routes for which operating permit has been obtained. These run from Nuevo Laredo to Mexico City via Ciudad Victoria; Matamoros to Tampico via Ciudad Victoria; Mexico City to Tapachula via Cuernavaca, Cuautla and Salina Cruz; Mexico City to Yucatan via Puebla and Vera Cruz, and Matamoros to Merida on a trans-Gulf flight.

Braniff announced that this mileage would make Aerovias Braniff the largest airline in Mexico next to operations of Pan American Airways and its subsidiaries there.

► **Headquarters in Mexico**—Aerovias Braniff will have headquarters in Mexico and be staffed and operated by Mexican personnel.

## PAA Merges Alaska Trans-Pacific Units

Pan American Airways announces consolidation of its Trans-Pacific and Alaskan air transport operations into a Pacific-Alaska division with headquarters at San Francisco, effective immediately.

The reorganization takes place a month after Pan American grouped its Latin American operations into one Latin American division at Miami. San Francisco has been the base of the Trans-Pacific division, while the base for the Alaska division has been at Seattle, where sector headquarters will be maintained.

► **Personnel**—Manager of the new division is L. C. Reynolds, formerly acting manager of the Trans-Pacific division. O. J. Studeman was named manager of the Alaska sector.

## 2-Minute Record

Capt. G. B. Lothian of Trans-Canada Air Lines, knows how fleeting fame can be. He set a trans-Atlantic speed record and lost it two minutes later.

Lothian's Lancaster flew from Montreal to Great Britain in 11 hours and 16 minutes. Four minutes after Lothian took off, another TCA Lancaster, flown by Capt. M. B. Barclay, left the runway. Two minutes after Lothian landed at the British airport, Barclay's ship arrived, after 11 hours and 14 minutes in the air.

Previous record, set by Capt. Richard Allen in a BOAC B-24 last November, was 11 hours 35 minutes.

Others with Reynolds at San Francisco will be E. H. Nowlin, division accountant; Frank McKenzie, division airways superintendent; J. H. Tilton, division operations manager, and V. A. Kropff, division traffic manager. With Studeman: C. Goodwyn, operations manager; S. D. Smith, traffic manager, and L. D. Warner, accountant.

## Kansas Ports Theme Of Wichita Meeting

State and air problems to be discussed at Feb. 14-15 conference.

Kansas is going to have its own airport conference and those arranging the meeting at Wichita Feb. 14 and 15 say they will attempt to avert some of the confusion and controversy present at earlier meetings at Kansas City and Oklahoma City.

Sponsored by the Kansas State Chamber of Commerce, League of Kansas Municipalities and County Commissioners' Association, with the Wichita Chamber of Commerce as host, the Wichita sessions will be confined to discussions and speeches on post-war airports. Speakers are being asked to limit their remarks to Kansas.

► **Post-War Plans**—Representatives of the three airlines now serving Kansas—TWA, Braniff and Continental—will be asked to explain their post-war plans for the state. Representatives of the four aircraft manufacturing companies in Wichita will describe what they believe the average American town will need in the way of airports.

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# United's Management Stock Plan Revives Question of Bonus System

Despite occasional abuses, providing further incentive to officials is generally profitable to stockholders as well as direct beneficiaries of program.

By ROGER WILCO

The issuance of 100,000 shares of management stock, recently authorized by stockholders of United Air Lines, has again raised the question of the use of bonuses as an additional means of compensation to officials.

When United's stockholders approved this special stock issue at their recent meeting, one individual criticized the plan. In reply, president Patterson said United is the only airline in the country that has not offered its officials a chance to buy stock on advantageous terms. While special deals as an added inducement to management have been known in the air transport industry, by no means have all airlines participated in such arrangements. As far as can be determined, air carriers who have figured prominently in favoring officers with stock bonuses have been: American, Chicago & Southern, Eastern, National, Northeast, Pan American and TWA.

► **Criticized and Defended**—Selling stock to management on advantageous terms is a characteristic well established in American corporate practice. Frequently, much abuse has developed through this arrangement. The principle, however, is a sound one and where applied within the confines of reasonableness, has led to progressive management policies and been to the benefit of the companies involved.

By issuing stock bonuses or selling shares at a discount to officers, a dual purpose is generally intended. One objective is to grant added compensation to the officers concerned. Another is to give the principals a sense of pride and ownership in the enterprise. Both purposes presumably are believed to encourage the best possible ef-

forts of the officers interested in the constructive development of the corporation.

► **Options**—The most logical approach has been found in the use of stock options. By this means, officials are given the right to buy stock of the company at a stipulated price—generally at discount levels—for some period in the future. The theory underlying this arrangement is that if the management is successful the company will prosper, hence the stock will appreciate in price. In this manner, the stockholders and management both benefit. Reduced to its most effective and justifiable form, special stock deals generally should accompany low or nominal salaries.

Much criticism, however, has been attached to those arrangements where cash salaries along with expense accounts have been quite substantial and may be construed to be ample compensation in itself without any added inducements. Further, much censure has been directed in those instances where a limited and select few are the sole beneficiaries of stock plans to the exclusion of others who also play important roles in the affairs of the company.

► **United Stock Plan**—The United management stock proposal has a number of interesting features. While a total of 100,000 shares of this series are authorized, it is likely that this stock will be issued over a period of time. No one person will be entitled to acquire more than an aggregate of 5,000 shares, with about 200 individuals eligible to participate.

The sale price will be at not less than book value (\$12.48 on Sept. 30, 1943) at time of sale, or in no case less than par, \$10. The market

price for the common is currently around \$25 per share. This management stock will be convertible into the common on a share-for-share basis about five years after its acquisition. Generally, the management stock must be offered to the company before the holder can attempt to sell it elsewhere.

► **Other Deals Studied**—It is interesting to examine a number of other special stock arrangements favoring airline managements.

American, in 1938, granted options on 25,000 shares at \$12.50 per share. Since then, the stock has sold for more than \$70 per share and is not far from this level at present. The largest percentage of these options went to C. R. Smith, then president of American.

Pan American granted its president, J. T. Trippe, an option to purchase 50,000 shares of stock at \$15 per share. This contract was made in December, 1935, and was subsequently exercised. With Pan American's stock selling around \$30 per share, the gain realized is evident.

► **Eastern**—Capt. Eddie Rickenbacker received, in 1938, an option to purchase 20,000 shares of Eastern at \$10 per share over a period of years. This was later increased by 5,000 shares. Also, in 1938, 20,000 additional shares were reserved for issuance at the same price to certain officers and employees. This, too, was subsequently increased, 4,005 shares being added. Most of Eastern's options have since been exercised. The price of the company's stock is currently around \$36 per share.

TWA provided an interesting stock purchase plan for employees, starting in April, 1937. A total of not exceeding 50,000 shares was reserved for employee participation at discount levels. Up to Dec. 31, 1940, the stock optioned under the plan was allocated as follows: 1937, 8,079 shares at \$12 per share; 1938, 17,280 shares at \$3.75 per share; 1939, 12,089 shares at \$5.85 per share; 1940, 10,979 shares at \$7.06 per share. Jack Frye and other TWA top officials were the chief beneficiaries of this plan. The company's stock is currently quoted around \$19 per share.

It is evident that special stock deals have ample precedent in the air transport industry. No clear-cut formula is always possible in evaluating these arrangements. For example, many companies may be part of an industry which happens to be riding the tide of success through circumstances beyond

management control. In other words, the course of the business cycle has, in the past, spelled success or failure for many an enterprise despite or without any special efforts on the part of the executive officers.

## AAF Reclaims Oil

Lubricant is used in training flights in U. S., ASC says.

The Air Service Command will reclaim an estimated 5,000,000 gallons of used aviation engine lubricating oil this year, which will be made available for unrestricted use in the Air Forces in continental United States and will effect a saving amounting to approximately a half-million dollars.

The reclamation process involves the re-refining of old oil, which will be processed in eight privately operated refineries, strategically located near centers of military aviation. There are no plans at present to operate refineries overseas for reclamation purposes.

Air Service Command disclosed that 60 percent of all oil used by the AAF is consumed by training and routine flights in the United States. Only about 20 percent of the oil used by the AAF at home can be processed and reused.

## United Discontinues Airport Division

Unit becomes part of Pratt & Whitney organization.

United Airport division of United Aircraft Corp. has been discontinued and has become a major department of Pratt & Whitney Aircraft division of the corporation.

L. L. Snow, who was general manager of the airport division, will continue as airport manager. In addition to Rentschler Field, which has been greatly enlarged in the past few years, the airport department operates an engine overhaul shop, a wind tunnel, now under construction, a service hangar and a shop for manufacture and repair of cylinders.

H. M. Horner, president of the corporation, explained that "one of the prime objectives of this change is to coordinate Airport activities which are and have been so closely related to the Pratt & Whitney division."



**Safety First:** WAC Lt. Chloe E. Doyle and Lt. Col. Harry D. Immel, whose reduction of 49 percent in accident frequency in ASC depots won for the command a Distinguished Service to Safety award.

## 49% Accident Cut Wins Award for ASC

Establishment of a national safety program for depots and installations of Air Service Command has resulted in reducing accident frequency among its civilian employees by 49 percent during 1943, and the award to the command by the National Safety Council of a Distinguished Service to Safety award.

A scroll signifying the award was prepared for presentation Feb. 4 to Maj. Gen. Walter H. Frank, commanding general of ASC, at the Mobile (Ala.) air depot, by Col. John Stilwell, president of the council.

► **Accident Rate Cut**—Major credit for the program is given to Lt. Col. Harry D. Immel, veteran of the World War and former civilian industrial safety engineer in Pennsylvania, who was recalled to active duty last September to organize ASC's safety program, and WAC Lieut. Chloe E. Doyle, former New Rochelle, N. Y., school safety counselor.

Accident frequency rate for ASC depots was 8.27 percent. Best record of any comparable industry, for 1942, according to U. S. Department of Labor, was that of the aircraft industry, which had a frequency rate of 11.4 percent.

## Goodyear Produces New Engine Mount

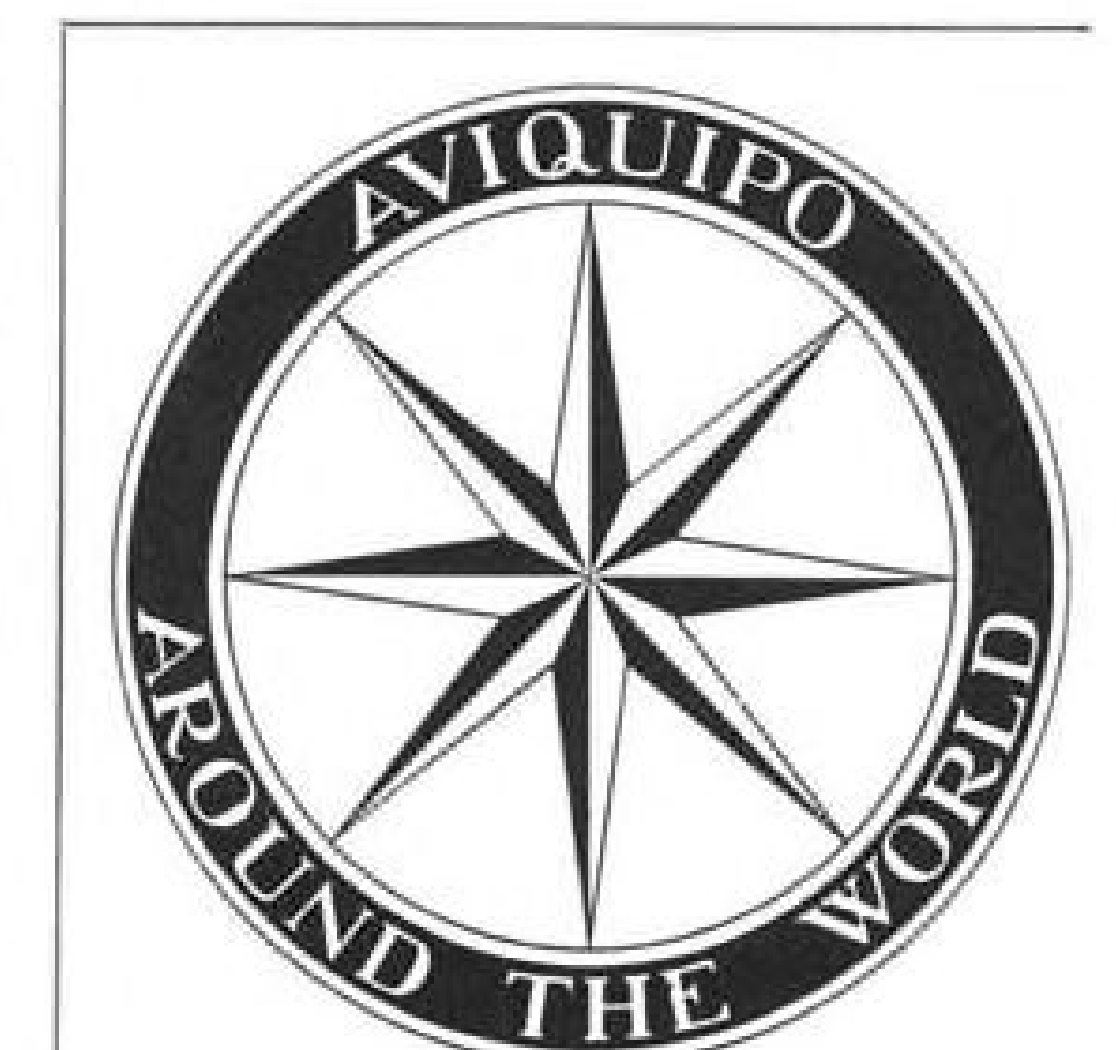
Reduces vibration as well as weight, company reports.

A new type of engine mount, which requires less rubber, has been developed by Goodyear Tire & Rubber Co., and is helping not only to reduce the weight of the *Flying Fortresses*, but also reduces vibration.

W. C. Winings, manager of Goodyear's mechanical goods division, and J. L. Amsdell, mechanical goods engineer, were prime movers in the project. Amsdell said the engine mounts permit the *Flying Fortress* engines to reach their vibration peak much earlier than other types of mounts and that often they reach this peak with the new mount before flying operation ranges are reached.

► **Aids in Bombing**—This, of course, permits more accurate aiming of bomb sights and guns, longer life for the airplane and less nerve-strain for air crews. Amsdell estimated the new mounts decrease the original weight of each *Flying Fortress* by about 15 pounds. When the plane is in the air, the mount means a weight saving of about 45 pounds, he said, on the basis of extra lifting capacity which is needed for each original pound.

He explained that all the engine vibration is absorbed by a natural rubber sleeve in the mount, nine of which are supplied for each *Flying Fortress* engine. In addition, a knuckle in each engine mount is of a plastic which eliminates any need for oiling or greasing. Another feature of the mounts, Amsdell said, is the fact that they are interchangeable with mounts used heretofore. No design change was necessary in the structure to which the engines are suspended and which, in turn, are attached to the wings.





## Personal Flying Previews

SEVERAL WEEKS AGO an employee at Pennsylvania-Central Airlines' Washington base agreed to tutor eight would-be private flyers in ground school. Somebody noted it on a company bulletin board. When the instructor arrived to meet his students on the appointed day there were 105 persons waiting.

They included employees from nearby hangars. Instead of dropping off after two weeks the number rose to more than 150. The astonished founder has a sizable "school" on his hands. PCA discovers it has one of its best employee relations projects to date.

Several classes are being formed. The students have already organized a club and employees among them own about four light planes which, with others, will be pressed into flying service when regulations and weather permit.

The scene switches to Parks Air College:

Employees at all of its five bases were offered free flight training, no ground school provided for whatever. The well known two-place ercoupe, generally credited as being one of the easiest planes to fly, is in use. About 90 percent of the employees signified initial interest. About 75 percent are still taking instruction.

Although the program is nowhere near its completion, Parks officials are confident it indicates already that almost anyone can, in a reasonable time, learn to fly a modern no-spin, no-stall airplane.

These are significant events. It may be argued by the pessimists that both originate within commercial aviation enterprises and thus start with pre-selected groups who would be expected to have manifested a deeper interest in flying than a cross-section of the public. However, aviation should be an old story to those who are in it every day. If such response to personal flying opportunities arises at PCA and Parks, it is difficult to put a ceiling on estimating the number of Americans who will respond to simple, safe flying courses after the war.

# Airport Management

**T**HE NEW INTEREST in airports is one of the brightest spots in aviation.

Slipshod management will not be tolerated after the war. Scheduling of three midwest airport meetings within a period of sixty days, at Kansas City, Fort Wayne, and Wichita, has aroused response which in each case has far exceeded early plans.

Meanwhile, in Washington, the Civil Aeronautics Administration named a consultant to its air-

port division who is preparing to collect data from all 1,700 U. S. publicly owned airports for a study of airport management.

Comparative data will be available to airport managers, owners and the public. CAA emphasizes it will not be a case of telling the people how to run their business, but instead "a fact finding service" offering statistics, cost and revenue systems for those who wish to refer to them. Heretofore adequate management information has been difficult to obtain. With proper procedure, CAA's new study should aid materially to raise standards.

Marked for oblivion are cramped and dirty administration buildings, with inadequate public services, crummy restaurants, and indolent employees. The air traveler of tomorrow has a right to expect the same development and progress in air terminals as in the fast, luxurious airliner that flies between them.

## The Airlines Look South

THE REPORT prepared by the Civil Aeronautics Board's Research and Analysis Division, under F. H. Crozier, on the Caribbean area, to be introduced as an exhibit in coming route hearings, represents the most complete document yet on the subject. It justifies the unprecedented scramble of U. S. Airlines to lay the foundations for service to the south.

Scores of charts, maps and tabulations bring together for the first time much background on the area, based on data from carriers, CAB files, Commerce and State Departments, Post Office, and the Maritime Commission. Emphasis is rightly placed on factual matter. Only in some of the analysis of this information can applying airlines find any cause for controversy.

"Future possibilities for both cultural and recreation travel between the U. S. and the Caribbean area seem almost limitless . . . The influence of high per capita wealth in the U. S. is especially great in the Caribbean area. Travel between the U. S. and off shore island countries appears to depend little on the purchasing power of such countries," the report indicates.

Because of these unique characteristics of the area, plus the ever present national defense element, the Caribbean zone, including Mexico and northern parts of South America, will develop inevitably as one of the greatest aerial networks.

"In no region of the world," the report points out, "does air transportation offer so many advantages over surface transportation. Almost the entire historic market has moved at rates in excess of those which seem compatible with probable future air transport costs."

ROBERT H. WOOD



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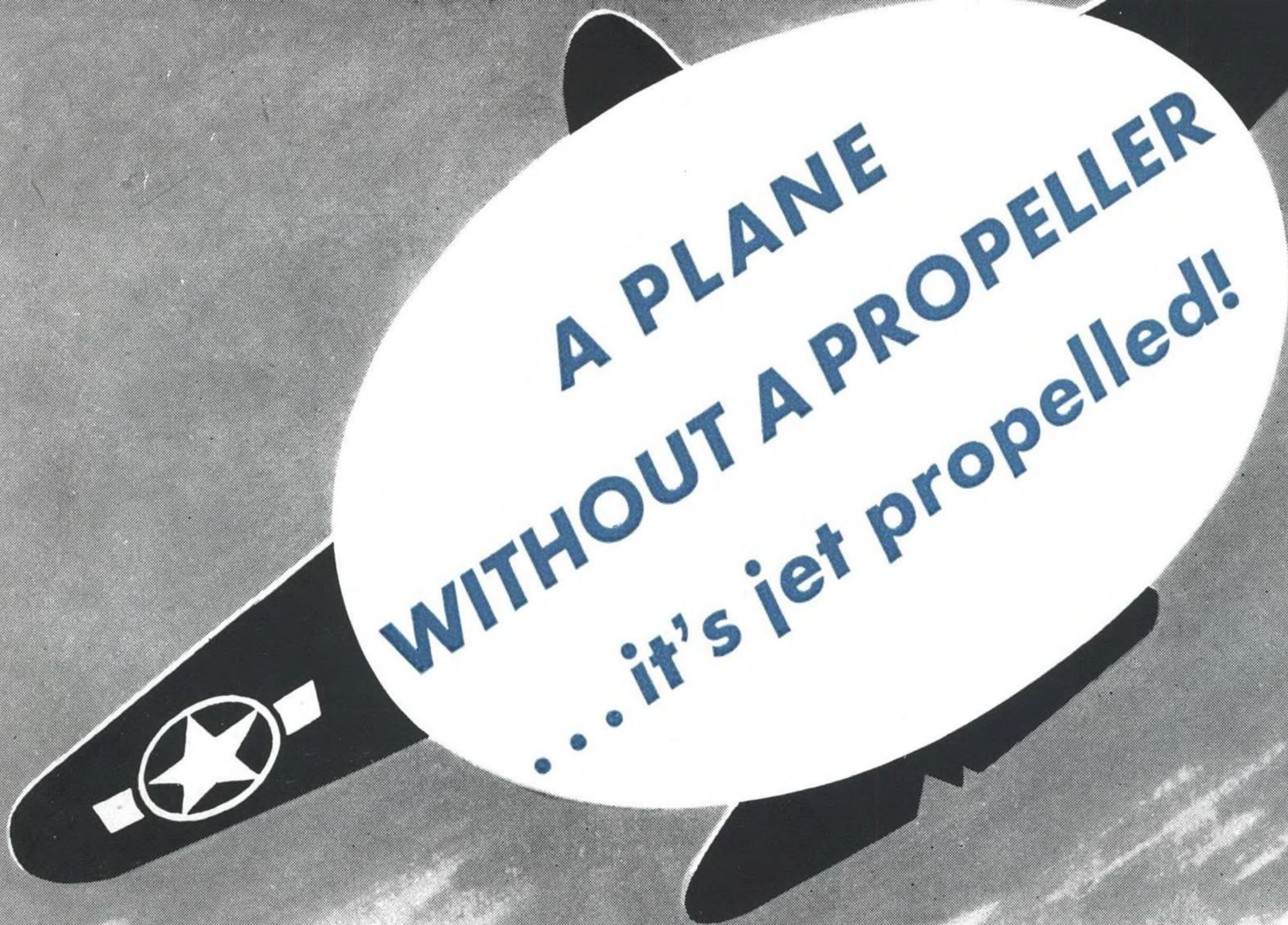
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