Aviation News

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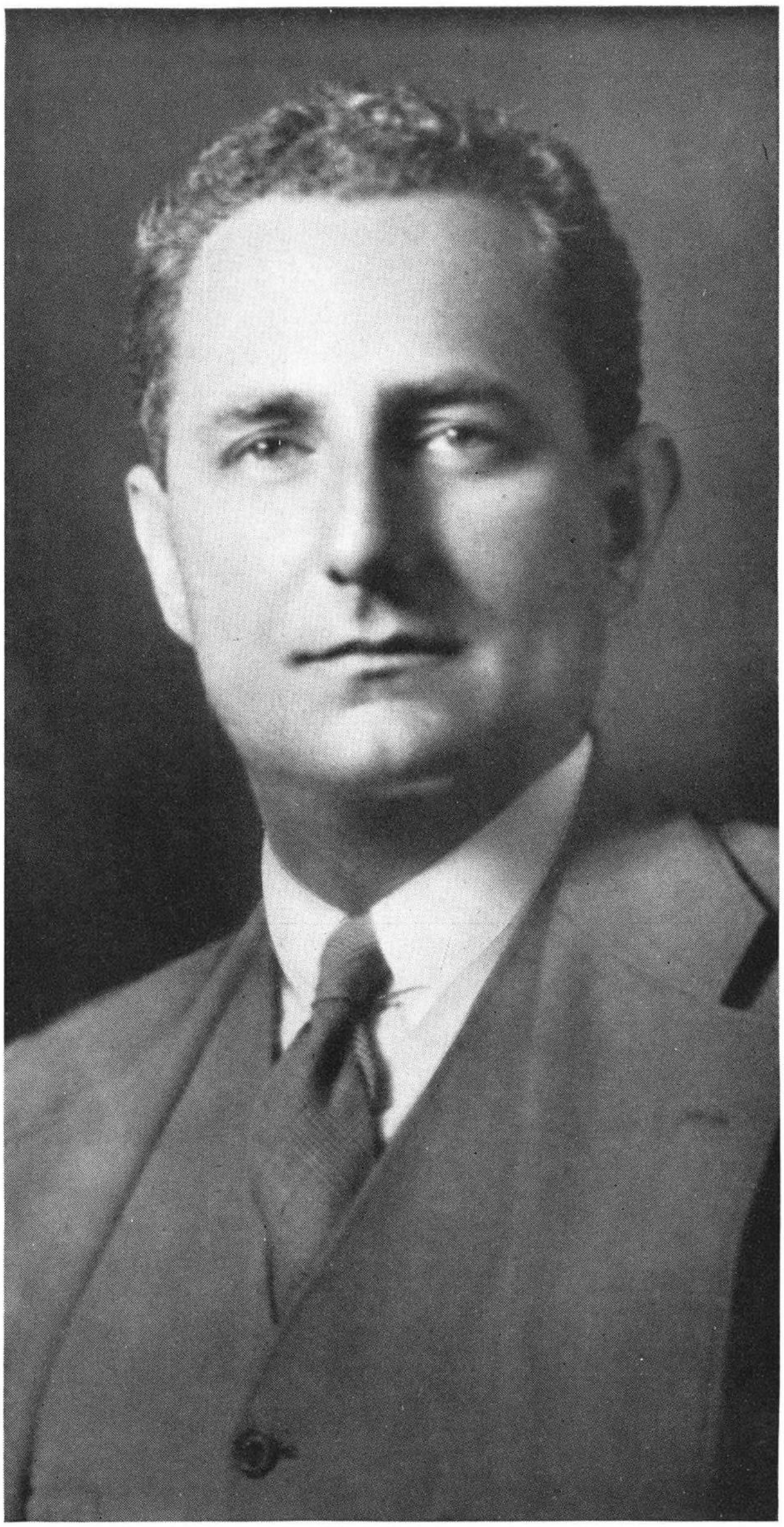
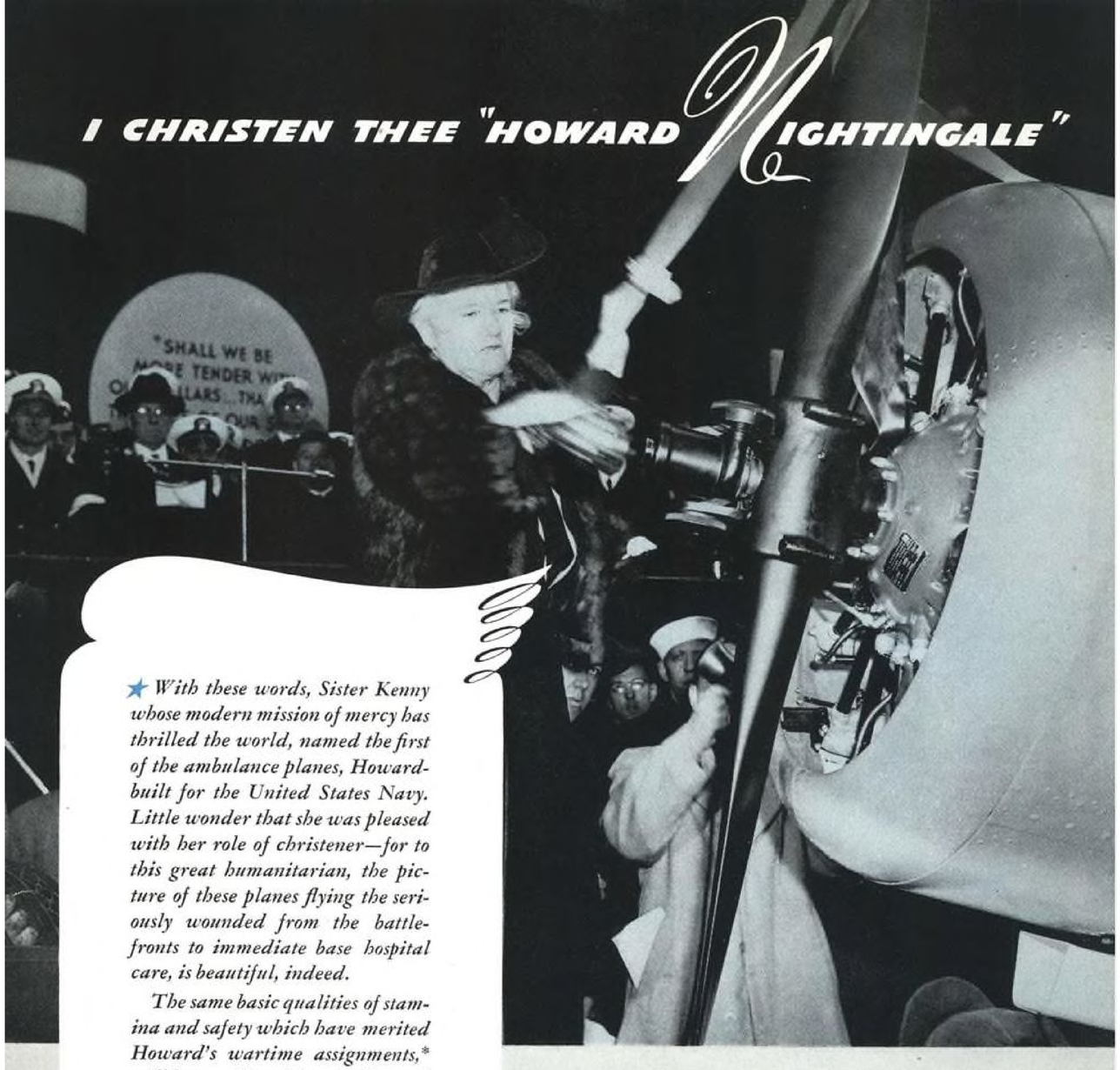


Heads United Aircraft: *Forty-year-old H. Mansfield Horner, moved up from general manager of Pratt & Whitney Aircraft to presidency of United Aircraft Corporation in realignment of top executive officers.*



★ *With these words, Sister Kenny whose modern mission of mercy has thrilled the world, named the first of the ambulance planes, Howard-built for the United States Navy. Little wonder that she was pleased with her role of christener—for to this great humanitarian, the picture of these planes flying the seriously wounded from the battle-fronts to immediate base hospital care, is beautiful, indeed.*

The same basic qualities of stamina and safety which have merited Howard's wartime assignments, will be equally evident in Howard planes when they again serve a peacetime America.*

★ ★ ★

** Howard Nightingale ambulance planes (GH-2) and advanced trainer planes (NH-1) are built for the United States Navy. For the United States Army, primary trainer planes (PT-23)*

Howard AIRCRAFT CORPORATION

CHICAGO AND ST. CHARLES • ILLINOIS

Washington Observer

SECRETS OUT—Speculation was rife in the capital the past week on the unusual number of heretofore closely held military secrets which have come to light through official sources, and further speculation on the possible meaning of these disclosures in connection with the perennial guessing contest on the invasion of Europe. The fact that "Mitchell" bombers now mount 75 mm. cannon first came in a brief dispatch from Australia and was quickly supplemented and augmented by the War Department. Finally revealed was the new water injection device which adds power to warplane engines. Then there was the night operation of the "Catalinas," with accounts of the destruction they have wrought. There were hints from the Navy that we have secret weapons which pale any conceived by our enemies, and the Chief of Ordnance referred to other mysterious arms.

★

ATTACKS ON BERLIN—In aviation circles and out, the speculation that centered around the disclosure of our new weapons shared discussion with the bombings of Berlin, in which air power apparently is having free rein to bomb the enemy into submission. The definite results are eagerly awaited by all proponents of air power. British and American air officers assure all that the terrible visitations on the center of Nazi-land will increase in fury. Some observers see in the attacks a chance for air power to bring the enemy to a point of surrender. Others hold that air power alone will not do the job. Whatever the answer, there is a definite feeling here of big things in the offing.

★ ★ ★

THE "FLYING FORTRESS" NAME—"Flying Fortress" has always seemed a particularly appropriate name for Boeing's great bomber, but a different viewpoint has been expressed by Air Marshal Sir William Walsh, head of the RAF delegation in the United States. Sir William says he often thinks "Flying Fortress" is a "bad name," and explains that it gives the impression of something defensive, while in fact it is highly offensive. He suggests Flying Battleships, perhaps, as a more apt name "because they are battleships in the truest sense—they fight." Sir William may have something there, but Flying Fortress to most people suggests anything but defensive action and the "Flying Fortress" will stand long in aviation history for its feats, regardless of its name.

★ ★ ★

DAY OF INFAMY—Word went out from the White House to the various war agencies to soft pedal any ideas they may have had on Pearl Harbor anniversary statements or releases and that any observance of Dec. 7 should be as solemn as a "day of infamy" calls for. Neither the Office of War Information nor the War Production Board, for example, had any official statements, nor was there anything special from either the Army or Navy.

★

TWO YEARS AFTER—Even the most sober reflection of the attack on Pearl Harbor cannot obscure the magnificent job done by the aircraft industry since that day, a task which some of the most conservative members of the industry privately thought would be impossible when the President called for 50,000 airplanes and then for airplanes at the rate of 100,000 a year from an industry which was hardly out of swaddling clothes. Aircraft unit production for November was close to 9,000. That is the aircraft industry's answer.

★ ★ ★

THE *MITCHELL'S* CANNON—Disclosure of the B-25's terrific new firepower with the installation of a 75 mm. cannon in a redesigned

Projectile for new 75 mm. airplane cannon

nose reveals another triumph for aircraft engineers and designers who have long wrestled with problems attendant upon putting bigger and bigger guns and more firepower onto warplanes. The Observer forecast this greatly in-

AVIATION NEWS

December 6, 1943

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

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Washington Observer

creased armament on our planes last summer. Installation of this cannon is of vast importance to prosecution of the war. The American aircraft industry and the Army Air Forces have again done the impossible.

★ ★ ★

AMERICAN SURPLUSES — Disposition of surplus war goods that may total 75 billion dollars is now regarded in some Washington circles as the nation's prime problem, next to winning the war. In this connection, aircraft is by far the largest item among war weapons and supplies, with forecasts that in 1944 warplanes will constitute approximately half the Army's total procurement program. Most recent attack on the problem is a proposal which would set up a property custodian who would be guided by a joint Senate-House special committee. The general trend on disposal of surplus material is to put it in the hands of one central agency.

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INVENTORIES—Inventories in industry generally are reported at new record levels, presenting serious possibilities, particularly so far as the aircraft industry is concerned. Aircraft manufacturers have had to keep much material on hand in order to meet production demands and anticipated orders. There appears to be some question as to whether some of these stocks will be recognized as bought for government account. Some of the inventory, of course, consists of parts unsuited for commercial planes. This problem of the aircraft industry will have its solution largely in government policy and consequently any indications of Government attitude on this problem should be closely watched.

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BRITISH SURPLUSES—In Britain, the government has decided that the Board of Trade will coordinate the disposal of all surplus Government factories, with special attention to the lease of plants urgently needed for peace-time production and to the possibility of converting into trading estates some of the premises no longer required for government work. At the same time, it was not ruled out that the government might retain these factories.

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INTERNATIONAL AIR CONFERENCE—There are strong indications that Canada is anxious that a conference among countries interested in postwar civil aviation should be advanced without delay and not wait for the war's end. Canadian officials have indicated that they feel Canada is well qualified to make a substantial contribution to postwar aviation in the British Empire. Canada has a substantial aviation industry and Trans-Canada Air Lines and Canadian Pacific Air Lines between them are flying at the rate of 13,000,000 miles a year.

ENTERPRISE—Just how ready every hamlet is to receive and support air transportation is demonstrated by a clipping from the Moorpark, Calif., "Enterprise." A news story cites, together, American Airlines' application for extension of its Los Angeles-New York route to London and the application of Southwest Airways for a feeder route to link the nearby town of Oxnard to Los Angeles. The story's two-column headline: "PROPOSED AIR ROUTE TO LINK OXNARD AND LONDON."

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MANPOWER TREND—Unless the Army extends beyond anticipation its demands for increased aircraft production, there probably will be less clamor by western plants for the additional manpower that seemingly does not exist. Indications are that they will make the most of what they have and be able to prove it if any Congressional committee arrives to hold hearings on the now-familiar manpower-hoarding charge.

★

EXPEDITING COMMITTEE—The Aircraft War Production Council, West Coast, has set up a Production Expediting Committee with the objective of creating set-ups within the plants to keep all workers busy all the time by making groups of production workers flexible. Workers caught with a lag in the flow of materials, for example, will be shifted temporarily to sections of the production line which are overloaded with materials and behind schedule.

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MANPOWER AND PRODUCTION SHIFTS—The War Department is giving careful consideration to manpower problems involved in Army production retrenchments. In any production re-scheduling, cut-backs or shut-downs of facilities producing materials for the Army Service Forces or the Army Air Forces, notice is given the War Manpower Commission when the stoppage order is signed. This enables all agencies concerned to work with the employer to determine number and types of workers to be released and to make arrangements for re-employment in other essential industry. As of Oct. 31, latest official figures, 12,383 prime contracts had been terminated since the start of war production, on which the face dollar value of the uncompleted portions was $7,857,241,000.

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VETERANS—Aircraft plant personnel directors see a new production stimulant in the employment of the honorably discharged veterans of World War II. The presence of a veteran with a limp or with some other physical handicap offers a strong psychological curb to absenteeism, work slowdown and quits.

Photo Courtesy Buick Motor Div. — General Motors Corp.

M-H Controls speed aircraft engine testing

SPECIAL automatic remote control devices developed by Minneapolis-Honeywell engineers are speeding the testing of aircraft motors in the nation's newest and largest aircraft manufacturing plants. These new control devices not only conserve manpower, but make possible positive, accurate findings under all kinds of flying conditions which are simulated in the test cells. Automatic recording devices by Brown Instrument Co., a Minneapolis-Honeywell subsidiary, take down operational data of each engine so that complete performance record is available. This new development by Minneapolis-Honeywell engineers is but one of the many M-H contributions to the war effort . . . If your problem deals with automatic control, M-H engineers can help you. Minneapolis-Honeywell Regulator Co., 2947 4th Ave. S., Minneapolis 8, Minn. In Canada: Toronto. In Europe: London, England, and Stockholm, Sweden.

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VOLUME 1 • NUMBER 19

Aviation News

McGRAW-HILL PUBLISHING CO., INC.

DECEMBER 6, 1943

Aviation Distributors Urge Plan To Dispose of War Surpluses

Propose 7-man commission appointed by President for task to "take government out of business," in St. Louis convention.

By ALEXANDER McSURELY

Proposal to handle surplus war materials through a seven-man federal commission to be appointed by the President was outlined to 200 members of the Aviation Distributors and Manufacturers Assn. in a convention in St. Louis last week, by H. P. Ladds, president of the National Screw and Manufacturing Co., Cleveland.

Ladds, a member of a U.S. Chamber of Commerce committee on surplus products for postwar distribution, said the plan was being recommended by the committee to Congress, and that interest in it already had been shown by Senator George and other Senators.

Warns of Need of Program—Unless the commission or some other means of supervising distribution of surpluses is established, Ladd warned, "We can take all our postwar plans, everything that is being considered here at this convention, and throw it out the window."

He estimated that surplus supplies would total between 25 and sixty billion dollars, exclusive of actual war materials such as guns, ammunition and materials not readily usable for peacetime needs.

Inventories—Under the plan, commissioners would be appointed subject to Senate approval, and each would have at least five years' executive experience in industry or commerce. The commission would be allowed freedom of judgment in disposing of surplus materials, with limits of general policies prescribed by legislation, and would be advised by committees from various industries.

The commission also would be empowered to require uniform perpetual inventories by all government agencies, periodic reports on surpluses on hand, inspection of stocks periodically, and to establish price and time of disposal with power to sell the materials and instruct the appropriate government agency to deliver the material sold to the purchaser.

Demobilization—"The plan, in brief, would take the government out of business," Ladd said. "It would mean demobilization of surplus materials rather than disastrous liquidation."

He predicted the plan would enable the government to recover over a long time period, perhaps as long as 20 years, as much as 60 percent of money invested in surplus supplies, compared with approximately five percent recovered by sale of war materials after the first world conflict.

Provisions should be made jointly by the commission and by the armed forces for maintaining sufficient reserve stocks of the materials and of war plants, as a reserve against possible future war needs.

Election—The association voted to re-elect its present officers, including Ray Snyder, Chicago, president; W. F. Scott, Jr., Robertson, Mo., vice-president; George A. Fernley, Philadelphia, secretary - treasurer, and M. E. Galante, Philadelphia, assistant secretary, and to elect C. B. Bunch, New York, to a vice-presidency.

Four directors re-elected were G. B. Vandusen, Minneapolis, L. G. Mason, Hapeville, Ga.; R. V. Trader, Pittsburgh, and A. W. Whitaker, Portland, Ore. New directors named included: R. B. Kenty, Dallas; T. G. Tynan, Philadelphia; George Wilson, Chicago; W. Logan Case, Akron; Ladds, and Richard Bomberger, Lititz, Pa.

Power Booster

The secret of added power, which has been added to present warplane engines, finally has been disclosed officially with Army approval, as a water injection device which makes possible added bursts of speed in planes to gain position on an enemy or to take successful evasive action heretofore not possible.

A year ago Pratt and Whitney engineers began their study of the application of water injection to double *Wasp* engines and pending official acceptance they produced 1,000 conversion units.

The Eighth Air Force fighter command first used the new device in combat last July with highly successful results. The pilot, at the pressure of a switch, can add considerably more power to his engine.

Three principal advantages of the new device, as outlined by Pratt and Whitney engineers, are: the cooling effect of the vaporization in the cylinder is greater with water than fuel; the susceptibility to detonation, limiting the power that can be taken from a cylinder is lessened with the presence of water in the cylinder, and it produced more power because it employs a leaner mixture.

Coast Guard, Navy Test Helicopters

Both branches work together in development for patrol work.

The new chief of the Coast Guard aviation division, Comdr. S. C. Linholm, has expressed considerable interest in the possibilities of helicopters for coastal patrol and other peace functions of the organization.

The Coast Guard, which is a part of the Navy in wartime, has shown more enthusiasm for helicopters than has the Navy, but both branches are working together in their development.

Replaced Leamy—Comdr. Linholm replaced Comdr. Frank A. Leamy. Linholm was graduated from the Naval Air School at Pensacola in 1935 and has served as commanding officer of the Coast Guard air station at Biloxi, Miss., and in San Diego.

Horner Succeeds Wilson as New United Aircraft Corp. President

Former head and Raycroft Walsh, former senior vice president, named vice chairmen; other promotions announced.

The promotion of several principal officers of United Aircraft Corp. which places in the presidency, 40-year-old H. Mansfield Horner, has been announced by Frederick B. Rentschler, chairman of the board.

Rentschler

Wilson

Eugene E. Wilson is relinquishing the presidency in order to devote his entire time to his duties as vice-chairman of the corporation and Raycroft Walsh, formerly senior vice-president, has been named a vice-chairman. William P. Gwinn,

Walsh

Stewart

formerly assistant general manager of the Pratt & Whitney Aircraft Division, has been promoted to acting general manager. Horner was previously vice-president in charge of manufacturing and general manager of Pratt & Whitney.

C. J. McCarthy

Gwinn

Realignment—In connection with the changes, Rentschler issued a statement in which he emphasized the necessity for looking to future operations. Rentschler said: "It is believed this realignment of our principal officers will tend to strengthen the general executive department and also operations. It continues United's fixed policy of advancing personnel within the organization. It also will serve to bring along our younger executives to positions of greater responsibility and at the same time will provide our mature senior personnel with the opportunity of devoting their efforts to the general business affairs of the corporation, particularly in the correlation of research and development programs of all United's divisions, to insure timely and effective planning and anticipating future requirements."

Horner Veteran Employee—Horner, the newly elected president, is the youngest of the three to hold that office. He is a veteran with Pratt & Whitney, having joined the company in 1926, one year after it was founded. He was named general manager in June, 1940.

Gwinn, who becomes acting general manager of Pratt & Whitney, is 36 years old and has been with the company nearly 17 years. He was named assistant sales manager in 1939 and in 1942 became assistant general manager.

Joseph F. McCarthy continues as controller and Sidney A. Stewart and Charles J. McCarthy as vice-presidents.

History—Rentschler, with two associates, founded Pratt & Whitney Aircraft in 1925. In October, 1928, he was the moving spirit in the organization of United Aircraft and Transport Corp., which included Pratt & Whitney and several other manufacturing and transport divisions. In 1934, this became United Aircraft Corp., devoting its time and facilities entirely to research development and manufacture of aircraft engines and propellers.

Wilson, after a distinguished naval career following his graduation from Annapolis, joined United Aircraft in 1930 as president of Hamilton Standard Propellers Corp., then a subsidiary of United Aircraft and Transport. Later he became president of Sikorsky Aircraft Corp. and of the Chance Vought Corp., both United subsidiaries. In 1937 he was elected senior vice-president of United and on the death of Donald L. Brown in 1940, he became president.

J. F. McCarthy

Walsh, 16 years an officer and flyer in the U. S. Army, joined United Aircraft in 1930 as vice-president of Hamilton Standard Propellers. He became vice-president of United in 1940 and in November, 1942, was named senior vice-president.

New Chamber Board Is Topflight Group

Determination of the aircraft industry to have a strong national trade association which can speak with authority is seen in the strong Board of Governors roster submitted to the annual meeting of the Aeronautical Chamber of Commerce in Washington last week—all 15 members are company presidents.

As chairman of the Board of Governors, the nominating committee presented the name of Donald Douglas, head of Douglas Aircraft; as president, J. Carlton Ward, Jr., of Fairchild, and as vice-presidents, Lawrence Bell, of Bell Aircraft, and Lamotte T. Cohu, of Northrop.

Conference Plans—Plans were discussed for the holding of frequent meetings, alternating between the East and West Coast in order to give board members full access to views and opinions of all members.

Details of plans for the meetings were expected to take several weeks to complete and the new officers will not take over until this program has been worked out.

Membership—The new board of members, barring last minute inability to serve, will include: Donald Douglas, Douglas Aircraft; J. H. Kindelberger, North American Aviation; Robert E. Gross, Lockheed Aircraft; Harry Woodhead, Consolidated-Vultee; P. G. Johnson, Boeing; T. Claude Ryan, Ryan Aeronautical; Guy Vaughan, Curtiss-Wright; J. Carlton Ward, Jr., Fairchild; Eugene E. Wilson, United Aircraft; Victor Emanuel, Aviation Corp.; Alfred Marchev, Republic; Ernest R. Breech, Bendix Aviation; Thomas A. Morgan, Sperry Corp.; Glenn L. Martin, Glenn L. Martin Co., and C. J. Brukner, Waco.

The main membership meetings were preceded by a session of the old Board of Governors to act on proposed by-law changes necessary to chamber reorganization plans.

Name Change—Under discussion at the membership meeting were proposals to change the name of the chamber, to restrict membership to those actually engaged in aircraft and closely related manufacturing, and other details of the reorganization program.

With the selection of a directing executive head of the chamber, it was expected that he would be named president.

Expanded Schedules Strain Labor Supply

Air industry to need 100,000 more men in next six weeks, WMC officials estimate.

War Manpower Commission officials estimate the aircraft industry will need between 100,000 and 130,000 additional workers in the next six weeks to meet accelerated production schedules, despite a record-breaking output of planes in November, counted unofficially at more than 8,700.

A paradoxical situation has developed in manpower, with sharp cutbacks in some areas, while in others new schedules call for additional men, which will strain manpower resources.

Cutbacks and Expansion—About 500,000 workers must be added to war industries within the next few weeks, WMC officials estimated, at the same time figuring that 150,000 workers will lose their present jobs, due to production cutbacks and program changes.

Lea Bill Status

Reports that House leadership favors floor consideration of the Lea Bill (H. R. 3420) to amend the Civil Aeronautics Act gave added hope last week to those who want it reported out by the House Rules Committee.

The Committee has held one hearing on the measure, but sponsors of a minority bill (H. R. 3491) have not had a chance to testify. With many members away from Washington, it was doubtful that Chairman Sabath (D. Ill.) would call another committee meeting on the Lea measure before next week. Then the hearings may extend several days.

Lea supporters were still confident, however, that the committee will grant a rule, that the bill will be debated, and that it will pass the House by a comfortable margin.

It was disclosed that 70,000 men are being released from the armed services every month because of medical discharges, over-age and other reasons. Not all are equipped to enter war industry, although many are hired by aircraft and other war industries.

Reclassifications—Despite the number dropped from jobs because of production cutbacks, they frequently fail to relieve the shortage to any great extent, because cutbacks frequently take place in areas too far removed from the tight labor sections to make transportation practical.

There have been reclassifications among critical and less critical labor areas and the number in Group I, most critical, has dropped to 69 from 77 during the past month. This was due to changes in production, however, rather than to an easing of over-all manpower requirements.

Wilson Takes Over WPB Operations Post

Executive vice-chairman succeeds H. G. Batcheller.

A new "streamlining" move in the War Production Board under which Executive Vice-Chairman Charles E. Wilson takes over the duties of the vice-chairman for operations is expected to have little if any effect on aircraft manufacturing.

At a staff meeting of division directors, Wilson agreed to take over the additional job temporarily. It became vacant with the resignation of H. G. Batcheller, who is returning to private industry. The office is charged with scheduling raw materials and component parts. However, aircraft components are scheduled under a separate order and Wilson's functions in the office so far as aircraft is concerned are related only through allocation of basic raw materials.

One of the purposes of the meeting was said to have been to persuade numerous WPB executives to remain with the board, there having been indications of a number of resignations of men important not only to the continuance of war production, but to related reconversion problems which are beginning to arise.

TRUCK FLEET WINDBREAKER:

Few pictures have come out of the Alaska-Aleutian area illustrating the notoriously severe weather conditions as does this U.S. Coast Guard photo. The force of winds during a squall at Dutch Harbor, Alaska, was so great that a fleet of Navy trucks was called into service as a windbreak for this Catalina *plane.*

75 mm. Cannon Gives "Mitchell" Formidable Firing Power

Army permits announcement of new gun, largest known weapon ever mounted on a plane; given first test against Japs.

The test of combat met and passed, North American Aviation's new B-25 *Mitchell* is now disclosed as mounting a 75 mm. cannon in its newly designed nose, together with two 50 calibre machine guns, giving it a terrific firepower not possessed by any other airplane in its class.

The 75 mm. cannons are the largest known weapons ever mounted in an airplane and, although a number of aircraft manufacturers were invited by the War Department to adapt airplanes to carry such gun installations, the B-25 is the first to be made and to see action. The first went into action last July.

▸ **Supplements Bomb Load** — The largest weapon installed in an airplane prior to this is believed to be the 40 mm. cannon used by the British to arm the *Mustang, Spitfire* and *Hurricane*. Bell's *Airacobra* mounts a 37 mm. cannon in the nose of its single engine. The new installation has not affected the B-25's bomb bay capacity or its speed.

First word of the airborne 75 mm. cannon came in a brief dispatch cleared by censorship in Australia. Details of the new armament, worked out by North American engineers in cooperation with Ordnance Department officers, were then disclosed by North American with permission of the War Department.

▸ **Recoil Problem Solved**—Company engineers say that, while it might seem that a B-25 would literally "hang" in midair from the effect of a shell being fired from its nose, actually the recoil felt in the airplane is almost negligible. The shells fired from the cannon are 26 inches long and weigh 20 pounds. The projectile proper weighs 15 pounds.

The recoil for the discharge is taken by a secret-type, hydro-spring recoil device. In tests, three shells were fired in 10 seconds.

▸ **Nose Structure Remodeled** — In making changes in the bomber to accommodate the cannon installation, a new and shorter nose structure was designed to replace the glass-enclosed bombardier's compartment. In addition, it was necessary to relocate the controls from the forward compartment to the pilot's compartment, revise the navigator's compartment, and add armor plate for protection against frontal fire.

Engineers, in making their tests, took an entire section of a B-25 forward of the wings and installed the cannon, then moved the section to a firing range.

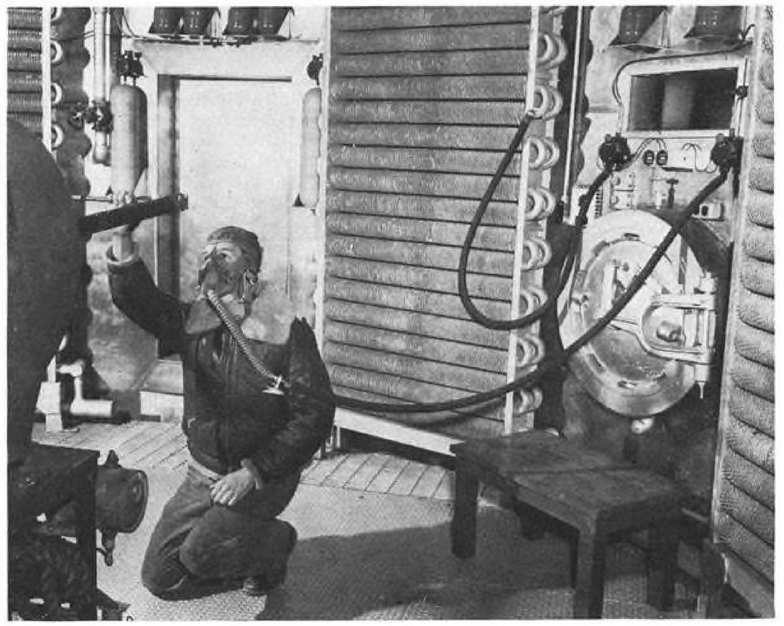
▸ **2,000 Lbs. Added**—Production of the cannon-bearing plane started at North American's California division three months later. It required 13,551 engineering man-hours and 380 new drawings to complete the redesigning job. In addition to the work in California where all B-25's are cannon-equipped, the North American modification center at Kansas City also adds the 75 mm. gun to many B-25's.

The cannon and redesign added about 2,000 pounds to the airplane's gross or loaded weight, armament installation and ammunition contributing.

The new airplane cannon, built on a mount assembly, is installed in what was formerly a passageway beneath the left side of the pilot's compartment. The muzzle projects forward through a blast tube in the lower nose section and the breech extends aft to the left forward side of the navigator's compartment.

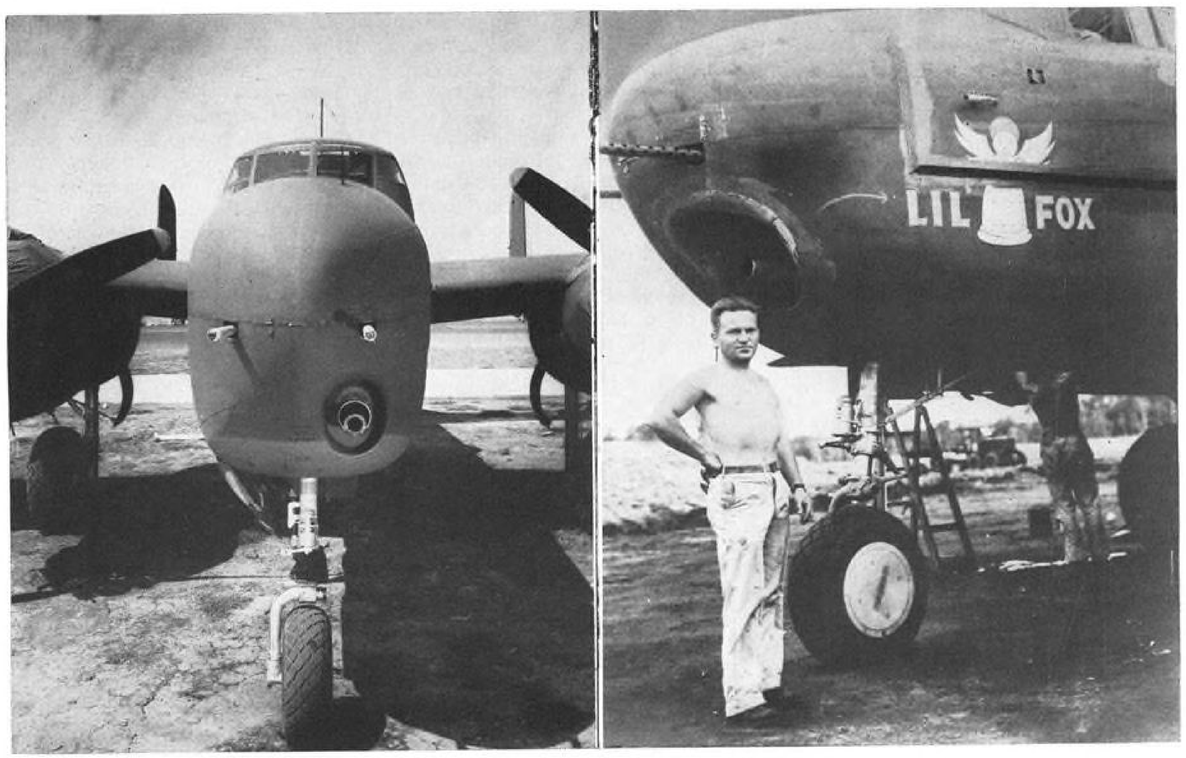
▸ **Effective Against Tanks**—Crew of the B-25 consists of pilot, co-pilot, cannoneer, radio operator and upper turret operator.

Although the plane retains its effectiveness in bombing, troop strafing, carrying torpedoes, and in reconnaissance, its principal use of the cannon is expected to be against shipping, gun emplacements, landing barges, tanks and enemy planes. The newly equipped plane has been credited with aiding in the sinking of a Japanese destroyer, pulverizing other vessels and destroying important military targets in its action against the Japs in the South Pacific and probably other war zones.



TESTING A TURRET AT LOW TEMPERATURE:

Soldier technician inside the armament laboratory's cold chamber at Wright Field, Dayton, checks the operation of a Consolidated Liberator *B-24 tail turret. He wears oxygen mask, needed in "high flights" in the pressurized chamber, which can simulate altitudes up to 60,000 feet.*



NORTH AMERICAN UNVEILS AIR-BORNE 75 MM. CANNON:

Largest known weapon installed in an airplane is the 75 mm. cannon placed in the new all-metal nose sections of North American B-25 Mitchell *bombers, together with two 50 calibre machine guns. First to go into action in the South Pacific was named "Lil' Fox" for Jack Fox (shown above), North American's senior field representative in that theater of war. In installing the cannon in the B-25, the AAF has virtually lifted artillery into the air. Note that the cannon muzzle is recessed. Photo on left shows head-on view of this devastating new firepower. Shells fired from the cannon are 26 inches long and weigh 20 pounds.*

FEDERAL DIGEST

NWLB Approves Ruling To Permit Firm To Revise Piecework Rates

Decision affecting Republic Aircraft Products Division of Aviation Corp. involves possible wage cut; summary of week's activities in U.S. bureaus and war agencies.

In one of the first cases to come before the National War Labor Board involving a possible decrease in wages, NWLB unanimously approved an arbitration award allowing officials of Republic Aircraft Products division of Aviation Corp., to revise certain piecework rates.

The argument between the company and UAW-CIO dates back to an agreement signed May 1, 1941, and continues through various agreements and stipulations by the Regional WLB and an arbitration award made last March. NWLB emphasized its policy of never reviewing an arbitration award on its merits, but only to determine whether wage adjustments contained in the award are compatible with the wage stabilization program.

▸ **Awards Held Binding**—In its order, the Board ruled that the arbitrator's award, which allows the company to place into effect changes in piece rates where earning cards showed such relatively high earnings as to indicate a need for a change, was final and binding. To advise the company on what piece rate revisions will be compatible with wage stabilization, NWLB will appoint a special representative to assist in effectuation of the award.

By this order, NWLB overruled a decision of the Regional Board, which in effect reviewed the award on its merits.

In an opinion giving the reasons for NWLB's unanimous decision, Dr. George W. Taylor, vice-chairman, said the company had claimed, when the last time-study was made, that employees had been "holding back on their production and metering their jobs." They further claimed that the workers "did not give to the time-study men their best effort and through trickery were withholding production."

▸ **Cites Earnings Increase**—Dr. Taylor said further, "It is reported by management that 'earnings increased from an average of $1.60 to $1.80 per hour, and some employees were making as high as $2.50 an hour.' The union, on the other hand, maintains that the relatively high earnings are the result of a great effort expended by the employees of much more than an average skill and ability."

▸ **NWLB adopted** a new standard procedure in administering the voluntary maintenance of membership provision. On the basis of its experience during the past year, the new procedure is designed to give maximum protection to the worker and to guarantee minimum interference with operations of management.

while continuing the assurance of security for a responsible union.

Procedure consists of: a simple explanation of maintenance of membership provision which may be posted in plants and which clarifies the right of each employee, without penalty, to make a free choice as to membership in a union; a revised form of union security order, clarifying procedural details; a procedure for administering the maintenance of membership provision designed to protect against unwarranted discharges. The new procedure became effective Dec. 1.

▸ **Christmas Bonus**—The basic question as to whether a Christmas bonus may be considered an integral part of the wage or salary structure will bear strongly on NWLB decisions in disputes over this question, the Board disclosed in a formal opinion. Before this question can be answered, other preliminary questions are posed, answers to which will indicate whether by repeated voluntary action the employer has established a custom with respect to the bonus and, if it is found that such a custom has developed, whether a presumption exists that the practice should have been continued.

Edgar L. Warren, assistant wage stabilization director of NWLB, has been appointed chairman of the Seventh Regional WLB with headquarters at Kansas City. He served as a public member of the Wage Adjustment Board and as acting deputy director of the National Board in Charge of Industry Commissions and Panels. Before coming to Washington in 1933, he was an economist for the Ralston-Purina Co. for seven years.

▸ **National Labor Relations Board** certified for production, maintenance and repair employees at the Sherman Way, Lankershim and North Highland Avenue plants of Bendix Aviation, North Hollywood, UAW-CIO. For the majority of employees at Culver City and St. Andrews plants of Hughes Aircraft Co., Culver City, Calif., the National Union, United Aircraft Welders of America, was certified. International Assn. of Machinists was certified for employees in the lines and loft (template lay-out) department, Curtiss-Wright Corp., airplane division, Louisville, in an amended decision of NLRB.

▸ **Alien Property Custodian**, Leo T. Crowley, issued an order requiring all persons claiming any interest in trademarks, commercial prints or labels now or formerly owned by nationals of designated foreign countries, to report their interest, including any agreement or claims of ownership, on Form APC-31 by Feb. 1, 1944. A "designated foreign national," in this instance, is a resident of any country other than the American Republics, the British Commonwealth of Nations, and the USSR, and includes any person on the Proclaimed List of Certain Blocked Nationals as amended and supplemented. The purpose of the order is to locate and describe whatever interests of this type are held in the U. S. and to obtain information which will aid in the administration of those marks taken over by the Custodian, according to Crowley.

Lee Renamed

Josh Lee was nominated by the White House last Thursday for reappointment as a member of the Civil Aeronautics Board for a full six-year term ending Dec. 31, 1949. Routine approval on Capitol Hill is expected.

▸ **Awards** adding up to more than $2,400,000 were announced by the Chief of Engineers, War Department, for construction at army and municipal airfields. Largest contract, $307,959, was for the construction of additional buildings at Chatham Field, Savannah, Ga.

KLM CHIEF:

Hendrik Niewenhuis (left), managing director of the KLM Royal Dutch Air Lines, recently told reporters "a few thousand planes of the Allied Nations" could preserve peace in the postwar world. Interviewing him at La Guardia Field is Harry Gelwicks, veteran reporter who covers Pan American Clipper comings and goings for the New York Herald Tribune.

For the same purpose, $253,430 was allotted to Fairfield-Suisun Airfield, near Fairfield, Calif., and for clearing, excavating and grubbing, $137,890 was awarded a contractor at Alachua Army Airfield, Gainesville, Fla. Other contracts covered such work as installation of night lighting, construction of hangars, taxiways and temporary frame buildings.

▸ **NLRB** announced resignation of its general counsel Robert B. Watts, effective Jan. 1, 1944. Watts has been with the board since its inception and served with the predecessor board as chief assistant U. S. attorney for the southern district of New York and as special representative of the Attorney General to perform certain legal services abroad. Watts will join the New York firm of Pruitt, Hale and Coursen. He is succeeded by Alvin J. Rockwell, who returns to the board after a three-year absence. He has recently been attached to the solicitor general's office concerned with preparation of supreme court litigation. When previously with NLRB, Rockwell served as trial examiner and later as senior attorney in the litigation section.

▸ **Election** was ordered at Bendix Aviation Corp., Philadelphia, within 30 days of Nov. 24. Production, maintenance, inspection, set-up, powerhouse, stockroom, toolroom, tool crib, trucking, material moving, receiving, shipping, salvage, stock-chasing, inside expediting and dispatch employees will vote for international assn. of machinists, AFL; for UAW-CIO; for United Aircraft Workers Council, Ind.; for American Aircraft Workers, Local 114, of the United Electrical, Radio and Machine Workers of America, CIO; or for none.

▸ **Production** and maintenance employees of Minneapolis-Honeywell Regulator Co., Aero Division, Chicago, including plant clerical employees and set-up men, will hold an election within 30 days of Nov. 24. They will vote for representation by International Assn. of Machinsts, AFL; for United Electrical Radio and Machine Workers of America, CIO; or for neither.

▸ **WPB** has approved completion of a CAA airport at La Crosse, Wis., to cost $950,000.

New Venezuelan Line

Formation of a new all-cargo air service to operate in Venezuela has been announced by Pan American Airways, which says it will have a minority stock interest and contribute technical knowledge.

The line will be known as Aerovias Venezolanes, S. A., (Avensa) and carry air cargo on charter between points in the interior as far south as Santa Elena in the diamond fields.

▸ **Tri-Motors to Be Used**—Three Ford tri-motor planes are to be used and Washington sources say one is understood to have been delivered, while the others are expected before the end of the year. Reports from the same government source are that two lines are being operated at the start, from Maiquetia to Ciudad Bolivar via Barcelona and Maturin, and from Maiquetia to Maracaibo via Barquisimeto.

Personal Plane Men See Big Job Ahead

Geuting warns that success depends on aircraft's utility, not salesmanship.

Leaders of the personal aircraft industry, who have a sales job confronting them, discard the view of those who believe their postwar problems are going to be relatively easy to solve. Many predict that a ready-made market will exist and that plant facilities will convert easily.

This may be partly true, but Joseph T. Geuting, Jr., chairman of the Personal Aircraft Committee of the Aeronautical Chamber of Commerce, warns that the success of postwar personal aviation will depend on the utility of private aircraft and not on trick selling or high pressure marketing.

▸ **Competition**—Geuting, an executive of General Aircraft, believes the greatest competition personal aircraft sales organizations will face after the war will be that between aviation and other industries and he warns against taking for granted the public's eagerness to try its wings.

Discussing the pattern of future aircraft sales before the recent meeting of the National Aviation Training Assn. in St. Louis, Geuting pointed out that aviation cannot fulfill its vast potentialities merely through the support of enthusiasts alone, but will require the personal participation of people of all classes and groups.

▸ **Selling Aviation**—"To the personal aircraft manufacturers," he said, "this means selling aviation to the public—not in terms of an individual make of plane, but in terms of the utility, place and safety of modern aviation itself."

Geuting believes the glamor of aviation may create some customer interest, but that utility must make the sale and the repeat order and that if the public is to participate, it must be taught its own role in increasing aviation efficiency.

▸ **Salesmanship**—Geuting feels that basic sales knowledge will be more important than an instructor's rating and emphasized that the private flyer after the war must realize that he, too, has a vital stake in regulations on flying and licensing.

He added that although it is the responsibility of the manufacturer to achieve flying safety with a minimum of instrument and technical application, it is the responsibility of the men who will fly to help prevent excessive regulations.

KEY CARGO MEN WITH UNITED:

United Air Lines' cargo men met recently with C. P. Graddick (center), director of UAL's air cargo department, to discuss the problems that come up in connection with their work with shippers in various areas. With Graddick, whose office is in Chicago, are (left to right, front row) David E. Fleischner, Seattle; Bruce H. Woods, Omaha; R. L. Mangold, Portland; J. R. Schmunk, Cleveland; Graddick; B. C. Koenitzer, Philadelphia; J. R. Haymond, Newark, and Fred F. Dawson, San Francisco; (rear row, left to right) M. T. Brockman, Paul E. Burbank and Glen C. Evers of Chicago; W. J. Hartland, New York; Thomas W. S. Davis, Washington; Robert E. Caskey, Los Angeles, and C. H. Bennett, Oakland.

U. S. Leads World in Helicopters But Big Problems Remain—Loening

Chairman of NACA Committee regrets exaggerated claims, sees technical difficulties restricting postwar use to skilled flyers.

Helicopter development and production is making headway, and rotary wing aircraft have a great future, but Buck Rogers' predictions are leaping to conclusions that cannot be justified in the near future.

▸ **Notably in the Lead**—That is the opinion of Grover Loening, WPB's consultant on aircraft and chairman of the NACA's helicopter committee, who summarized the case of rotary wing craft in an address on "the helicopter's limited future" before Brooklyn Institute of Arts and Sciences. America is "notably in the lead" in this phase of "aircraft development."

The helicopter for many years to come will be hard to fly and "far less suitable" for the layman than the airplane. Any notion that everybody will fly helicopters right after the war is unadulterated nonsense, he declared.

▸ **Serious Problems**—Limitations are serious but will be overcome eventually. Controls will be simplified. Forward speeds will be increased, but it will be many years before 200 mph. can be exceeded. Per-

formance will be improved at high altitudes. Limitations on size may be met by multi-rotor machines. Some safety limitations now imposed may be removed which will permit heavier disc loading. The vibration difficulties are serious. Construction costs are still high.

▸ **Postwar Uses**—When handled by professionals, the helicopter's future immediately after the war will be "wide and extensive." It may be flown by airline companies or by hired pilots employed by individuals and companies.

There will be fleets used on delivery systems for merchandise companies and on short-range airlines. Mining and oil firms will use them to carry loads to inaccessible places and for exploration.

▸ **Coast Guard Use**—The U. S. Coast Guard "is almost certain" to end up in all its life saving, ice patrol, law enforcement, and coastwise work with 90 percent of its air fleet in helicopters.

"Roadable" craft may possibly wind up as being poor cars on the highway and poor helicopters in the air. The helicopter's ability to land anywhere actually makes the roadable idea less necessary.

▸ **Some Flying**—Of 70 to 80 helicopter designs mentioned "ten or twelve . . . will presently be successful." Three or four are flying—Piasecki, LePage Young, etc.

The WPB is granting materials to and designating as laboratories several pioneering engineering groups who have good, new ideas. Army, Navy and Coast Guard, "after a little hesitancy," are placing strictly military orders and developing strictly military uses which cannot be disclosed. NACA is proceeding with "an ambitious program of research to make sure that no stone is left unturned in exploring the fundamentals of this problem."

WTS Contractors Hear Dark Outlook

Continuation after next spring of the national CAA-war training service program for the war effort appears unlikely. Congress appropriated training funds to the Army and Navy, whose own facilities are probably large enough to handle future replacements to the exclusion of privately owned schools.

▸ **Pessimistic**—Sounding a pessimistic note at the National, Aviation Training Association in St. Louis last week, R. McLean Stewart, executive director of WTS, said some contracts will be completed in a few months, even before the end of the fiscal year.

This means that unless some action is taken soon the national system of more than 300 civilian-operated air training centers will begin disintegrating. Since contracts will be unavailable and civilian business will not be forthcoming, skilled personnel will be lost to other industries.

▸ **Nearly 10,000 Personnel**—In mid-November there were 27,691 men taking flight training in WTS from Army and Navy. From Jan. 1 nearly 176,000 men had received training. Flight and ground school contractors were employing 9,876 persons including 5,002 flight instructors and 3,613 mechanics and helpers.

Since July 1, 1939, $227,697,689 has been appropriated by Congress for pilot training through civilian agencies, including the current fiscal year total of $89,020,239 consisting of war, navy and $29,400,000 CAA funds.

▸ **Valuable Plant**—"This sum has built up flight-training facilities which will be of permanent value for our post-war civilian economy," Stewart said.

A study of flight contract rates by the WTS office resulted in an increase of $1 per flight hour for Navy elementary training and another increase for AAF cross-country training in the flight instructor program. No changes were made in rates for the AAF flight indoctrination course. He strongly urged a standing air reserve training corps to carry on civil training and maintain a nucleus of trained pilots.

State License

Michigan Aeronautics Board has granted a license to Great Lakes Skyways, Inc., subsidiary of Great Lakes Greyhound Bus Lines, for operation of two commercial helicopter lines in Michigan.

Manferd Burleigh, president and general manager, predicted operations would begin "within the year," and added that the War Production Board and the armed forces would be asked to release materials for construction of two helicopters of seven place and possibly larger capacity. Igor Sikorsky and William Stout, he said, are working on aircraft to be used by the system, and 14- and 16-place craft of this type are being designed.

He said the contemplated routes would serve more than three-fourths of the state's population, with their main function as feeder lines for airlines operating to Detroit. The state board's action was considered the first move toward an aerial taxi service from Detroit to 19 airports in four counties, and at least two daily round-trips are planned from Detroit to Pontiac, Flint, Saginaw and Bay City.

Kansas City Session Attracts 300

Interest is high at midwest regional air service conference.

Encouraged by the success of its recent "Heart of America" conference on local air service problems, the Kansas City Chamber of Commerce announces that a similar meeting on airports is to be held next month.

The local service meeting, which is expected to be the forerunner of sessions in other cities to discuss the same problems, was attended by more than 300.

▸ **92 Towns Represented**—Out of 135 cities and towns in the Kansas City trade area invited to the conference, 92 were represented—all on proposed air routes, of which 90 are sought by 25 operating and prospective carriers. This is in addition to the unscheduled routes applied for by ten other prospective carriers.

Besides the civil representatives, half a dozen air lines and five prospective carriers participated in the discussions that followed the speeches at the one-day session, held under the auspices of the Chamber's Aviation Department.

▸ **Trade Area Airlines**—These talks dealt with trade area airline service, proposed services by fixed base operators, local service on trunk lines and administrative problems in expansion of air transportation, the last by C. Edward Leasure, chief examiner for the Civil Aeronautics Board. A demonstration of air pickup had to be canceled because the pickup plane could not be on hand at the scheduled time.

The development of local and feeder line service was discussed by J. W. Miller, president of Mid-Continent Airlines, who urged communities to prepare carefully their airport programs, lest "indiscriminate planning on the part of the smaller cities for the widespread 'over-construction' of airports result in a millstone for both the community and the air transport industry." Miller cautioned that "the opportunity to bring air service to your community is also an opportunity to make costly mistakes."

▸ **Fixed Base Operations**—W. Haley Reed, secretary and counsel of Consolidated Airlines, Inc., talked of fixed base operations. He represents a group of such operators who, he said, "came to the conclusion that the service contemplated could best be rendered by the coordination of all their activities," and hence had banded together as Consolidated Airlines to make joint application for certificates covering routes in their respective territories.

Viewpoint of a major airline was presented by E. Lee Talman, executive vice-president of Transcontinental & Western Air. Asserting that plans for emphasis on short haul traffic were being made before the war, Talman suggested that "the first stage of development of additional air services should be the continuing extension of service to those communities located on or adjacent to existing routes which can be incorporated into existing or proposed schedules with slight or no additional mileage and but little cost to the government."

SAE Will Discuss Wartime Engineering

Combining discussions of methods to expedite wartime production together with possible peacetime methods of planning production to make the most of materials, machines and processes, the Society of Automotive Engineers will meet in Detroit Jan. 10-14 for a practical wartime engineering conference with postwar implications.

John A. C. Warner, general manager, said the SAE war engineering program has enabled engineers to render valuable advisory services to the military and their work is yielding by-products of real postwar value.

▸ **Postwar Outlook**—Tentative program for the meeting calls for more than 25 discussional sessions with technical papers on aircraft, aircraft engines, diesel engines, fuels and lubricants and other subjects. Featured will be discussions of both wartime and postwar engineering uses of materials, including aluminum, magnesium, synthetic rubber, plastics and steel, with emphasis on materials which are new and upon new applications, adaptions, and uses of old materials developed through wartime materials conservation and substitution.

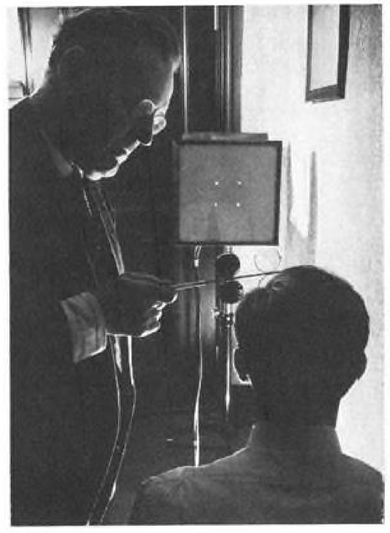
New Thrust Meter

A new type of aircraft instrument, a "thrust meter," is now being perfected by the Propeller Division of Curtiss-Wright Corp., and George W. Brady, chief engineer of the division, believes it will open the way for improvements in aircraft design and performance.

▸ **Aids Calculation**—When perfected, he explained, the instrument will make possible calculation of horsepower by determining the efficiency of various types of propellers and to what horsepower engine they are best suited.

Although still in its experimental stage, the device will enable engineers to determine the two most important factors in aircraft performance—horsepower required and thrust horsepower available.

▸ **Ground Tests Used**—Previously, "apparent" thrust horsepower available was determined by ground tests. With the new method of flight-testing, with the thrust meter, Brady believes that a more precise knowledge of the actual behavior of the propeller will be obtained. Tests with the thrust-meter have been conducted in level flights and dives at approximately 14,000-feet pressure altitude.



DOUBLE VISION DETECTOR: *A new device for testing double vision in pilot certificate applicants has been developed by Dr. A. J. Herbolshimer (left), assistant chief of the Civil Aeronautics Administration Medical division. Four Christmas tree lights behind a ground glass permit 26 combinations and, the CAA says, discourage occasional attempts of applicants to outguess the examiner.*

BRIEFING

▸ Douglas C-54 *Skymasters* carried Secretary of State Cordell Hull and his party to the recent Moscow conference. American diplomats made their round-trip to the Russian capital from Washington in two *Skymasters*, a total of 26,224 miles, without incident.

▸ Wright Aeronautical Corp., during the past year added 24,460 new employees and has rehired 2,370. Company interviews about 67,000 applicants yearly.

▸ Gen. H. H. Arnold tells what the Army Air Forces are doing to insure the safety of its men and what civilians can do to help in a pamphlet called "Your Boy in the AAF."

▸ A new Venturi tube is being used on gliders, trainers and some combat planes. It is molded of Lumarith E.C. (ethyl cellulose) to replace the die cast metal piece formerly used. The plastic will not chip, dent or rust, and has toughness at extremes of temperature and humidity. Lumarith is a production of the Celanese Celluloid Corp. and is molded by Cruver Manufacturing Co., Chicago.

▸ Production of "rivnuts," a one-piece combination rivet and nut plate developed by B. F. Goodrich Co., originally to fasten its rubber deicers to airplane wings, has now expanded to the point where the fasteners can be offered for general industrial use.

▸ United Aircraft Corp.'s Hamilton Standard Propellers division has announced that a class of 42 girls has just completed six months engineering training at Pennsylvania State College. Another class of 45 girls will take a year's course and 40 more are continuing at Penn State. Two or more years' college experience is necessary for enrollment in this course.

▸ Plywood production at the Baton Rouge plant of The Mengel Co. increased approximately 47 percent during the first eight months of 1943 over the same 1942 period, according to Irving Horine, vice-president in charge of Plywoods and Related Materials division. The Mengel Co. is the largest hardwood plywood producer in the United States.

▸ For the second time in two months, McDonnell Aircraft Corp. has increased its floor space. To provide additional facilities for use as a manufacturing area for experimental work, the company signed a lease for two hangar buildings at Lambert-St. Louis Airport. An agreement with American Airlines as owner and the St. Louis School of Aeronautics as lessor, provides 27,000 more square feet for the company's operations.

COMMENTARY

Long-Range Escort Fighters Give American Bombers Edge on Nazis

Large-capacity drop tanks permit pursuit planes to form protective screen all the way to target and back on long raiding missions

In the see-saw battle between offense and defense, newly developed extra long range drop tanks enable our *Thunderbolts, Lightnings* and *Mustangs* to go all the way on the big bombing missions.

One of the oldest principles of warfare is that every offensive weapon is quickly matched by a defensive weapon, which tends to make the offense too costly. In air war, the bomber is the attacking agent, carrying its loads of destruction far over the heads of defending navies and armies and striking far behind the lines at the enemy's ability to wage war and his will to resist.

Tactically, the fighter or interceptor is for defense. The struggle between the bomber and the fighter goes on continuously. It has long been an air war fundamental that the single-seater fighter, with its speed, maneuverability, fast climb and heavy fire power was queen of the skies. The modern bomber has countered this with increased speed, higher ceiling, heavy armor plate and increased defensive fire power. Improvements in equipment are accompanied by changes in tactics on both sides with a breath-taking rapidity.

"Fortresses" over the Continent—In the autumn of 1942, heavy bombers of the 8th Air Force demonstrated their ability to bomb their objectives in daylight and return to base, despite the heaviest fighter opposition the Luftwaffe could throw up against them. These were but small beginnings for the American operations, and no attempts were made at that time to range over the heavily defended industrial targets of Germany proper.

However, General Eaker warned that if the Nazis were given time they would devise methods for stopping our heavy bomber attacks, lives and equipment would be sacrificed, and the war prolonged.

Defense Gains in the Race—One year later and there is every evidence that the defense has made substantial gains. Anti-aircraft is very much more effective, and up to a greater altitude. The Nazi aircraft industry brought out a formidable night fighter version of the JU-88 bomber, and, by diverting other facilities, increased their production of day fighters, armed with more deadly machine guns and cannon.

Head-on attacks with quick evasive break-away were tried, and other tactical dodges to break up the tight formations of our heavy bombers with their concentrated fire power from nearly all angles of approach. Air to air bombing, explosive shells, rocket projectiles, and flying in our own (captured) bombers and fighters—all have been tried with varying measures of success, and taken altogether the air battles over Europe have become nothing short of terrific.

Our Bombers Get Through—The *Forts* and *Liberators* also have been improved, not only as bombers, with increased loads and range, but as weapons, with nose turrets, chin turrets and other well-placed guns. They are getting through to their targets, and so far missions involving such heavy relative losses as Stuttgart, the first Schweinfurt—Regensburg attack, and especially the second big Schweinfurt mission, have been definitely the exception.

In the over-all picture, our losses have not been out of line, although the official figures obviously do not

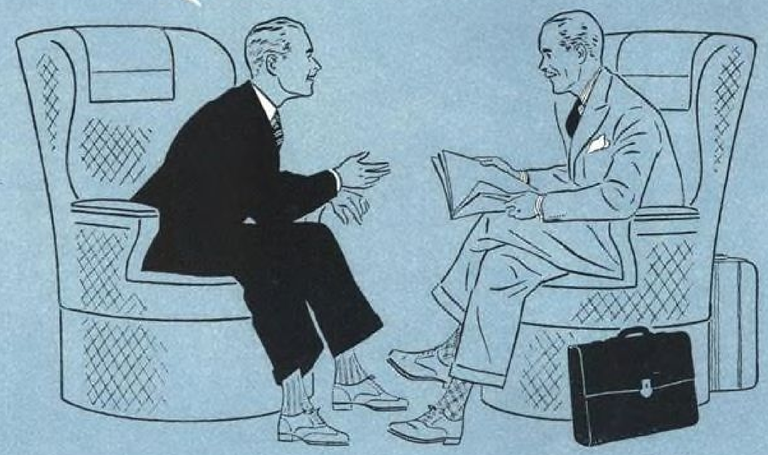
LONG-RANGE FIGHTERS SCORE:

Equipped with extra large drop gasoline tanks, American fighter planes are carrying the war to the Luftwaffe and taking a heavy toll of Axis craft as they accompany Allied bombers on raids to distant targets. At left is a Lockheed Lightning *P-38, which, designed to intercept heavy bombers, has made a spectacular success also as a dog fighter, ground strafer, tank destroyer, night fighter, medium attack bomber and long range photographic ship. At right is the new North American P-51* Mustang *fighter, equipped with a 1520 hp. Packard Rolls-Royce power plant, two-speed, two-stage supercharger and Hamilton Standard hydromatic propeller, characterized by Maj. Thomas Hitchcock to be the world's outstanding fighter plane in 1943.*

Rumors you *can* circulate!

THOSE ARE MARVELOUS GLIDERS **GENERAL AIRCRAFT** BUILDS FOR THE ARMY AIR FORCE.

YOU CAN SAY THAT AGAIN! BUT HAVE YOU HEARD ABOUT **GENERAL AIRCRAFT'S** TWO NEW **SKYFARERS?** IN SAFETY AND SPEED THEY WILL REVOLUTIONIZE POST-WAR PRIVATE FLYING. ONE IS ROADABLE, TOO*



★To hear more about it, write to . . .
The General Aircraft Corporation, Long Island City (5) N. Y.

Licensors to the industry of two-control airplanes under patents to Weick and to Koppen

tell the whole story. Numbers of heavily damaged planes which do manage to get back and miss the category of losses, and the number of killed and wounded crew members such planes bring back, add a shaded background to the picture.

▸ **The Escort Fighter at Last**—In the North African campaign, the P-38 *Lightning* came into its own in a big way. In dogfights it soon proved more than a match for the best the Luftwaffe could muster; as a ground strafing plane and light bomber, it proved devastating; as a fast, high altitude photographic ship its work was invaluable; and as an escort fighter to accompany *Fortresses* and *Liberators, Mitchells* and *Marauders* it turned out an answer to prayer.

A few weeks ago the *Lightnings* turned up in England, and took their place with the P-47 *Thunderbolts* in providing fighter escort for our big bomber formations.

▸ **Donder and Blitzen for Nazis**—The *Thunderbolts* went into action with the Eighth Air Force Fighter Command last spring, and after an indifferent start, began really throwing their weight around the upper skies over Europe by midsummer. In the Emden raid of Sept. 27, they proved their ability to go all the way and return equipped with extra large drop tanks and by the use of relays.

Shortly afterwards, Improved *Lightnings* came into the picture, and these give promise of even longer range protection. The P-38 development is worth looking at a bit more closely for a moment. Just before Pearl Harbor, the first of the P-38E's began coming off the production line, with four .50's and one 20 mm cannon in the nose and many improvements over the early models.

▸ **Engine Improvements**—The next change came in the spring of 1942 with the introduction of the 1325 hp. Allison F-5 engine, replacing the 1150 hp. F-2. A year later another model (letter designation restricted) came out, with further increase of horse-power, followed by a model with even more fundamental improvement in general performance (speed, climb, range, ceiling) in the late summer of 1943. This is the model now in action from British bases, as a very long range escort fighter and also as a fast, powerful fighter-bomber.

A still better model is the one just coming into large scale production at the Lockheed plant, with a high degree of specialized subcontracting, and also to be produced by Consolidated-Vultee, Nashville. These new *Lightnings*, and the Merlin-powered *Mustangs* when available in quantity, will be able to run interference for the long range missions, while the *Thunderbolt*, backbone of the present escort operations, will continue their excellent work for the medium runs. The Luftwaffe may do its worst; the Allied bombing offensive will not be stopped.

—NAVIGATOR

THUNDERBOLT COMES HOME:

Sturdy construction saved this Republic P-47 Thunderbolt *which was singled out for attack by a group of Nazi fighters while on a bomber escort mission over France. Five 20 mm.'s plowed into the right wing shown in the picture. The plane went into a spin, from which it recovered, then into another which led the attackers to believe it was finished. Despite the wing destruction, the pilot managed to get his plane back to England by instrument and made a crash landing at a coastal airport.*

AWPC Cites Cost Of Excess Training

High turnover of employees costing west coast council over $4,000,000 a month.

The critical nature of the turnover factor in the manpower problem is graphically illustrated in a statement from the Aircraft War Production Council, West Coast, that "the turnover of workers in major West Coast aircraft plants is literally dumping more than $4,300,000 down the drain of non-productive expense every month."

T. Claude Ryan, president of the aircraft company which bears his name and head of the West Coast Council, said that is the monthly turnover cost of hiring and training new aircraft workers.

▸ **Major Obstacle**—It is not a problem confined to aircraft plants but extends into other fields of war production and added that it can be solved by cooperation among war industries, the workers and the community.

When it is solved, Ryan emphasized, "the greatest single obstacle in the race to meet constantly rising aircraft production schedules will be removed."

▸ **Average Cost $200 Per Man**—Ryan said the average cost of hiring and training a new worker in the major aircraft plants is approximately $200 and over the first eight months of this year the average turnover of workers was 21,573 per month.

"That represents $4,314,600 spent every month solely for the non-productive task of hiring and training, a total since the first of the year of more than $34,250,000," Ryan remarked.

▸ **Big Reduction Possible**—He conceded that turnover cannot be entirely eliminated, but that it can be greatly reduced and that plant workers, the industry, the Council, schools and civic organizations are now engaged with this task.

Ryan pointed out that if even half the workers who quit their jobs in the first eight months of the year could have been persuaded to stick to them, a saving of more than $17,000,000 would have resulted.

▸ **Quit for "Personal Reasons"**—A recent Council study of employment terminations in member companies disclosed that 55 per cent of the workers who quit did so for "personal reasons." These are difficult to analyze, but, because they constitute the basis for a majority of terminations, they become a problem of prime importance.

* *

Aero Chamber Members Ask Law on Contract Termination

Lucien Shaw of Lockheed cites perilous financial position of aircraft plants as result of over-expansion during the war.

Immediate adoption of legislation covering contract termination procedures sufficient to protect the aviation industry against the obvious hazards of termination is urged by members of the Aeronautical Chamber of Commerce of America.

Lucien W. Shaw, assistant to the comptroller, Lockheed Aircraft Corp., appeared before the Senate committee on postwar economic policy and planning in behalf of the Chamber members and pointed out that since 1921 the Aeronautical Chamber has been the recognized spokesman for the aircraft manufacturing industry on matters of public interest.

▸ **Cites Production Record**—He said its members are now producing about 75 percent of the total value of all airframes and aircraft engines, propellers, accessories and spare parts being made in this country for prosecution of the war—the remaining 25 percent being produced almost entirely by companies whose normal business is outside the aviation field.

"Because of relatively slender financial resources and great overexpansion, Shaw told the committee, "the aircraft industry faces financial problems, created by the war, of such magnitude that policies and precautions of individual companies cannot greatly change the situation facing the industry. Any major corrective action must be initiated by Congress."

▸ **Postwar Problems Studied**—Shaw emphasized that the industry is deeply concerned about problems which will arise at the end of the war and added that the difficulties to be faced by the aviation industry will differ, perhaps, only in degree from those to be faced by other industries, but in certain respects, he said, the case of the aircraft industry is unparalleled in industrial history.

Shaw cited the aviation industry's 1939 output of approximately 200 million dollars and said 1943 output of the pre-war manufacturers will be about 60 times 1939, or approximately 12 billion dollars. By comparison, the all-time peak for automobile production was less than four billion dollars.

▸ **Financial Position**—In this connection, however, Shaw pointed out that the most conspicuous aspect of the typical airframe manufacturer's financial position is the small margin by which current assets—cash, accounts receivable and inventories, exceed current liabilities, such as amounts owed to employees for wages, to suppliers for material and parts, and to government for taxes, renegotiation refunds, advances and progress payments received against expenditures on war contracts.

At the end of last year, Shaw told the committee, the typical aircraft company had insufficient cash and accounts receivable to pay the amounts owed to its employees, suppliers and the government and even more serious, it did not have enough "quick cash" assets to pay taxes and renegotiation funds owed the government.

▸ **Sees Difficult Situation** — "This dangerous situation exists," he explained, "because these companies have been forced to put practically everything into plants and inventories, and have used for working capital their reserves for taxes due."

Shaw said the industry undoubtedly will experience serious difficulty in curtailing payrolls and outside commitments as rapidly as contracts are terminated, but added that this serious financial situation does not prevent the companies from doing their job in the war.

▸ **Urges Strong Industry**—"We believe that the events of this war have amply demonstrated that America must have, for all time in the future, a strong aircraft industry," Shaw said. "This can only be possible if the industry has sufficient finances to do its job and do it well.

"There must be resources with which the search for new engineering and production techniques can be continued," he added. "As the science of aviation progresses, it be-

PERSONAL PLANE PROPONENTS:

Members of the Personal Aircraft Committee of the Aeronautical Chamber of Commerce met recently in Washington to discuss mutual problems and plans. Among the leaders are, left to right: John E. P. Morgan, manager of the Chamber's newly-created personal plane department; William A. Mara, Stinson division, Consolidated Vultee Aircraft, and Joseph T. Geuting, trying to suppress a laugh, who is Committee Chairman. He is with General Aircraft Corp.

NAVY'S NUMERICAL STRENGTH DOUBLED:

The 27,000-ton plane carrier Essex *shown above is of the same class as the new* Wasp, *whose recent completion doubled the numerical strength of the Navy's combatant fleet in less than eleven months. Aircraft carriers were one of two types of vessels receiving special emphasis this year, making the* Wasp's *completion particularly significant. In connection with the completion of the* Wasp, *Secretary Knox disclosed that President Roosevelt has approved a new Navy aircraft goal of 31,000 instead of the previously announced 27,000 airplanes. Knox forecast last spring that in 1943 Navy combat planes will more than treble this year.*

comes ever more complicated and ever more costly. America needs an aircraft industry which can continue to lead the world in new developments and products. This can only be assured, however, if the Government recognizes the gravity of many problems with which the aircraft industry will be faced at the end of the war."

Job Training System Used to Speed Work

Typical of the aircraft industry's constant efforts to improve labor utilization is the educational program at Glenn L. Martin Co., where thousands of men and women are learning while earning and preparing for post war jobs while building bombers.

The Martin program falls into four basic divisions—pre-employment training, pre-assignment training, on-the-job training and upgrading training. Each of these major divisions is broken down into many subdivisions and includes both in-plant and outside courses at nearby schools and colleges.

▸ **Integrated Training**—Education at Martin starts even before the employee becomes engaged in productive work and continues as long as he remains with the company. Each step is carefully integrated and carried out according to a plan to fit the employee for the job at hand and increase his value to himself as well as the company.

The pre-employment training is carried out in cooperation with nearby city and government-sponsored vocational schools, with courses planned specifically to train applicants in specific skills.

▸ **Public School Used**—Under the pre-assignment set-up, a public school in Baltimore has been assigned to the company for its exclusive use in developing riveters, sheet metal workers, machine-tool operators and electrical and welding hands. Teachers and facilities are provided and paid by the United States Office of Education.

The training program is planned and administered in cooperation with the Martin education department.

Plans now are being worked out to extend this city school pre-assignment program until it includes most of the occupational doors through which newcomers enter Martin employ. This will reduce time formerly spent on training new workers.

Navy Raises Goal to 31,000 Planes

Knox reveals increase from 27,000 warcraft at press conference.

By MARY PAULINE PERRY

Navy's original goal of 27,000 aircraft has been increased to 31,000 planes, Secretary of Navy Frank Knox disclosed at a press conference in Washington recently.

Although Navy production in 1943 has been remarkable, 1944 is scheduled to be even larger. Present estimates are that, in comparison with the 1943 output figure, next year's increase in aircraft production will be $1,400,000,000.

▸ **Fleet Strength Doubled** — With completion of the aircraft carrier *Wasp*, the numerical strength of the Navy's combatant fleet was doubled in less than eleven months. The Navy felt that it was singularly appropriate that the new *Wasp* should be the vessel to bring the Navy's numerical strength up to a level double that of eleven months ago, in view of Secretary Knox's statement earlier this year that aircraft carriers were receiving special emphasis.

The Secretary said more than two score aircraft carriers of all types, including merchant vessel conversions, have been completed this year.

▸ **Combat Planes Treble**—Secretary Knox said April 9 that "in 1943, Navy combat planes will more than treble in number."

This forecast, although not yet fulfilled, will be met by the end of the year with several hundred planes to spare, it is believed. New combat planes produced thus far this year are well in excess of double the number on hand at the beginning of the year.

Navy also is reported to be receiving delivery on a number of Army type planes.

▸ **Manpower**—While manpower remains the critical obstacle to increased production, Navy discloses that, among its 14 most important aircraft company contractors, the airframe weight produced per employee (direct and indirect) per month, has increased more than 93 percent in the first three quarters of this year.

Navy statistics show women workers make up 43.5 percent of the direct labor in these plants compared with approximately 37.7 percent early this year.

Ten of the 14 operating in January, 1942, reported at that time that only 3.5 percent of the employees were women workers.

Plywood Study

Canadian research subcommittee inquiring into possibilities of "plastic" components.

Application of molded plywood to fabrication of aircraft components, accessories and fittings is receiving special attention by a subcommittee on wooden aircraft in the National Research Council laboratories in Canada.

Work is directed toward improvement of quality of wooden aircraft and components, aiding production by technical improvement of processes, making most effective use of available timber and improving quality of glues.

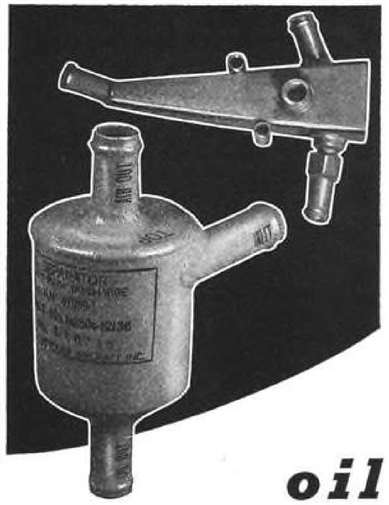
▸ **Industrial Advisers**—The membership of the subcommittee includes representatives of the Royal Canadian Air Force, Department of Munitions and Supply, Forest Products Laboratory, Aircraft Industry and the National Research Laboratories.

Serving as a channel for information from related groups in the United States and elsewhere, the subcommittee gives advice to manufacturers on specification requirements.

It likewise surveys problems confronting the aircraft industry such as wood-construction technique, priorities and research and development.

TIMING DOUGLAS ASSEMBLY LINE:

Douglas Aircraft's plant at Oklahoma has been equipped with big "clocks" which tell when the assembly line will move next. A row of the Douglas C-47 Skytrains, *adapted for war purposes from the DC-3 airliners, is ready to have nose sections joined. The line, of which this is only a small part, has developed only within the last year, as manufacturing operations began in November, 1942, when construction of the plant was barely under way.*



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G. E. Engineer Admits Gas Turbine Gains

Sanford Moss says warplane tests are paving way for development.

Discussion of the much-debated gas turbine has been stimulated by Dr. Sanford A. Moss, General Electric Co. consulting engineer, who says the gas turbine as an efficient prime mover is not yet here, but admits that operating results of turbosuperchargers on airplanes are paving the way to the higher temperatures needed for its development.

Dr. Moss, 71-year-old inventor of the turbosupercharger, hastened to add that whether the gas turbine will be able to compete with other types of prime movers when it arrives is strictly a matter of speculation.

▸ **Addresses ASME**—He pointed out in an address before the American Society of Mechanical Engineers that the same progress in higher temperatures will lead to better efficiencies for steam turbines and Diesel engines, which the gas-turbine prime mover would seek to replace.

Dr. Moss explained that the aviation turbosupercharger, a type of gas turbine in itself, originated as a by-product of gas-turbine prime mover development which it is now accelerating.

▸ **Progress Reported**—"It is true that the aviation turbosupercharger has only short-time operation at extreme conditions and does not have to meet the conditions of continuous operation in a power plant," he said. "Nevertheless, many problems have been solved, due to the impetus of World War II, which advance the prospects of a gas turbine as a prime mover."

He quoted reports of operations of turbosuperchargers in war which show they are subjected to conditions far exceeding their test rating and pointed out that the average of these conditions bears a relationship to the long-time operation at sea level to which a gas-turbine prime mover would be subjected.

▸ **Examples**—As an example, he described one of the tricks used by American pilots of turbosupercharged planes to get terrific momentary bursts of speed in air fighting. Turbosuperchargers are designed for pressure ratios which give absolute pressures above sea level value, when flying at altitude.

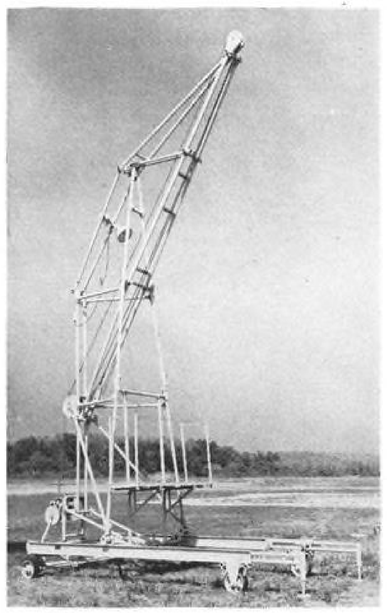
This means, Dr. Moss explained, that absolute pressures in the engine intake manifold appreciably above sea-level are easily possible at moderate altitudes. Such pressures or boost are used for takeoff or for regular operations under special circumstances. Pilots, of course, have rules and technical orders which give values for the boost of intake-manifold pressure safe for the engine and turbosupercharger.

▸ **Battle Strains**—"Thus, when a pilot with a turbosupercharger is in battle, he has means of greatly increasing his plane speeds at most altitudes by increased boost," said Dr. Moss. "So when an enemy plane is on his tail, does the pilot take out his technical orders, look at his instruments, and figure out what he ought to do? He does not. He subjects the turbosupercharger to pressures far beyond its test rating."

Bell Abandons Plan For 10-Hour Shifts

Hardship for women employees and resultant absenteeism among six reasons given.

Following several weeks of intensive study, Bell Aircraft has decided that the two ten-hour-shift plan, proposed as a means of increasing production and conserving manpower, seems impracticable for the corporation's Niagara Frontier division and will not be put into effect.



NEW CRANE:

This new crane recently was demonstrated for the Marine Corps at the air station at Quantico, Va., by its manufacturer, Aviation Equipment Co. Suitable for removing engines from planes, its capacity is 6,000 pounds. Height is 25 feet.

Ray P. Whitman, first vice-president and manager of the division, said the study began when the War Production Board requested adoption of two ten-hour shifts a day and suggested that immediate steps be taken to effect the change to the maximum practicable effect.

▸ **Plans Abandoned**—Whitman indicated it was clear such changes should not be made without due consideration of local conditions, and it was on the basis of these local conditions, in the Buffalo and Niagara Falls area, that the company decided to abandon consideration of the proposal at this time.

▸ **Studied by Other Firms** — The same proposal is under study by other aircraft companies and, in view of this, the six major reasons for Bell's decision are given:

▸ 1. Women now constitute approximately 58 percent of the direct labor force in the division, and many are married and have family and household responsibilities. A ten-hour day would possibly subject them to hardship that could hamper our (Bell's) over-all efficiency.

▸ 2. An increase in absenteeism, especially among women, might follow such a change.

▸ 3. A ten-hour day would mean that in some cases an employe would have to be away from home for a very considerable length of time, since many workers come from relatively remote sections.

▸ 4. Many employees oppose a ten-hour day. This is one of the factors entering into our consideration, since the feeling of employees who do the work must be given weight.

▸ 5. A ten-hour day would mean a considerable loss in machine and manhours. This would mean a substantial decrease in utilization schedules and a loss in output of important detail parts.

▸ 6. A ten-hour day would require a complete reorganization of public transportation arrangements to and from the plants. One shift, for example, would have to end at an early morning hour when buses would not be available.

Whitman said "our study of the ten-hour day has been carried on over the past several weeks, at the request of the government to determine whether or not its adoption would increase our production of airplanes.

"The factors cited indicate to us that the change, if made, might not accomplish the desired result and that increased productivity already is being accomplished by other methods."

PERSONNEL

* *

Harry P. Kupiec, hydraulics engineer in the design engineering department of Glenn L. Martin Co., has been named chairman of the Society of Automotive Engineers' Committee on hydraulics. He had served on this committee for a year. Kupiec also is national chairman of the Subcommittee on hydraulics of the National Aircraft Standards Committee, which works in conjunction with the Aeronautical Chamber of Commerce. Kupiec joined Martin shortly after his graduation from Georgia Tech in 1936, and holds the "Order of the Purple Martin," as a result of patents relating to the hydraulic system now used on the Martin B-26 *Marauder*.

Harold I. Beadle, chemical engineer, has been appointed sales manager for new products of Naugatuck Chemical division, U. S. Rubber Co. He has been with Commercial Investment Trust, Tide Water Associated Oil Co., as product development engineer, and as a consulting engineer did considerable research and development in cellulose derivatives and compounds. In his new capacity, Beadle will handle sales of new synthetic rubbers and synthetic plastics and any new developments in chemical fields being explored by the company.

Dr. Rowland Burnstan, former director of the Aeronautical division of Minneapolis Honeywell Regulator Co., has been elected a member of the board of Lawrance Engineering & Research Corp., and appointed executive vice-president and general manager. His executive assistant will be **Alfred Marshall**, formerly with the aviation division of Rubber Development Corp.

Hugo Brunner became head of the tooling division of Kellett Aircraft Corp., when that division was made a separate department recently. In the aircraft industry for 23 years, Brunner came to Kellett last May from Republic Aircraft Corp., where he had been chief tool designer. He was formerly with Chance Vought Corp.

Charles W. Perelle, vice-president of manufacturing of Consolidated Vultee Aircraft Corp., was elected a director, recently. He was formerly vice-president in charge of production for Consolidated and superintendent at Vultee, where he installed the first mechanized assembly line for volume production of aircraft.

Directors of Chandler-Evans Corp. elected **Ralph M. Swenson** (photo), secretary of the corporation, to succeed **George H. Day**, who continues as a director. Swenson will continue also as assistant treasurer. He joined the company in 1940 and was formerly with Bendix Aviation in its automotive and radio divisions. Prior to that, he was with Simms Magneto Co. and the Bragg Kliesrath Corp., vacuum brake manufacturers, which later was absorbed by Bendix Aviation.

RECEIVES SAFETY AWARD:

Lt. Gen. Barton K. Yount (right), commanding general of Army Air Forces Training Command, presents the Wings for Victory Safety Award of the National Safety Council to Maj. Gen. Ralph P. Cousins, commanding general of the AAF Western Flying Training Command. The award, conferred at a recent conference of primary flight school operators and AAF officers at Dallas, recognized the outstanding safety record in flight training for the first six months of 1943 of the Western Command.

Two Russian-born brothers, **Michael** (left) and **Serge Gluhareff**, have been named chief engineer and assistant engineering manager, respectively, of Sikorsky Aircraft division of United Aircraft Corp. Closely associated with Sikorsky throughout the development of the helicopter, they also have made important engineering and technical contributions to the multi-engined flying boats, amphibians and trans-Atlantic clippers. After World War I, the Gluhareff brothers went to Finland where they designed and constructed gliders and sail planes. They came to this country in 1924 and have become citizens. Michael Gluhareff will be responsible for design and development of all helicopter projects and Serge will direct and administer the organization and functions of the experimental engineering department.

Frank M. Folsom, chief of the procurement branch, Office of Procurement and material, Navy Department, has resigned to return to private business, as executive vice-president of Goldblatt Bros. Folsom's principal responsibility has been the clearance of all Navy contracts involving more than $200,000. He operated in the same capacity for the WPB. Previously he was with the National Defense Advisory Commission, and once president of Montgomery Ward & Co. He is succeeded by **Lionel J. Noah**, former president of American Woolen Co., who has been assistant chief of the procurement branch since December, 1942.

Buel E. Starr has been named manager of the aircraft torpedo plant, Pontiac Motor division, General Motors Corp.

A new research laboratories division of Douglas Aircraft Co., Santa Monica, will be headed by **J. R. Goldstein**, (photo) former engineering laboratory chief. A graduate of California Tech, Goldstein will direct both physical and chemical research under recommendations of a five-man program board. Members comprising this board are: **H. E. Guerin**, Santa Monica factory manager; **J. M. Schumann**, tooling director; **F. R. Collbohm**, engineering executive assistant; **A. T. Kuehner**, plant engineer-

CHINESE AIRMEN VISIT HAMILTON STANDARD:

Gen. P. T. Mow (left), commanding general of the Chinese Air Force in the United States, visits the shops of Hamilton Standard Propellers in East Hardford, Conn. H. M. Ellis, sales manager, explains blade fairing to him. Also shown is Col. Lin Chu, Chinese Air Forces, and Robert W. Russell, assistant to the general manager at Hamilton Standard, division of United Aircraft.

ing director; and **M. G. Simpson**, quality standards director.

Ronald C. Kinsey has been appointed assistant to the president of Western Air Lines. He will be in charge of a newly opened Washington office and will be concerned with the company's pending applications before CAB for new routes extending from Nome, Alaska, to Buenos Aires, as well as current proceedings which seek approval of Western's absorption of Inland Air Lines.

L. H. Cooper was named manager of the Elizameth City division of Consolidated Vultee Aircraft Corp. He was formerly chief of flight operations at Vultee Field and has been director of field operations for the company the past two years.

Capt. Robert W. Berry, USN, has received a letter of commendation from Navy Secretary Knox for his work as deputy director of public relations. Capt. Berry was detached from this post last October, to take over command of a new naval vessel. He had been on duty in Navy Public Relations since 1940. "You exercised fine discrimination and struck a fine balance between factors of security and of public interest and won the confidence and esteem of both your fellow officers and of the newspapermen whom you served," Knox stated.

Guy M. Springer, southern Colorado district manager for Office of Defense Transportation, has been appointed assistant to the vice-president of Braniff Airways. He will have charge of air mail and express for the airline. He was formerly transportation commissioner of the Pueblo Chamber of Commerce, and traffic commissioner of the Sioux Falls Chamber of Commerce.

Maj. Gen. Gerry Chapman, who recently completed a tour of battlefields in North Africa, Sicily and Italy, has assumed command of the 13th Airborne Division to succeed Maj. Gen. George W. Griner, reassigned. Gen. Chapman was formerly commander of the Airborne Command.

George M. Ebert (right), comptroller of the propeller division of Curtiss-Wright Corp. since 1942, and with the company for the past 14 years, has been appointed director of finance for the airplane division. His headquarters will be in Buffalo. He is succeeded by **M. J. Smith**, comptroller of the company's Indiana propeller plant. Smith will be at Caldwell, N. J., after Jan. 1.

A newly formed department, Pan American Civil Aeronautics Administration Section, for Pan Am's Eastern division at Miami, is headed by **Henry Kurtz**, head of the engineering department's CAA office for the past year. Formed to provide a central source of information and communication with the CAA, the new section will act as official liaison between all eastern departments of Pan Am and CAA.

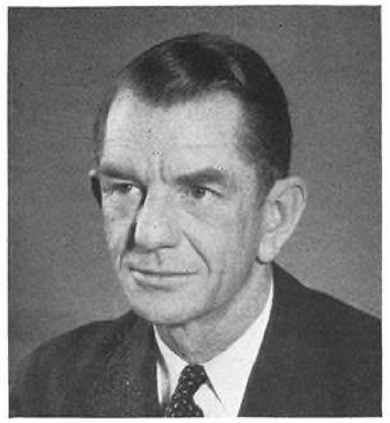
Arthur S. Brown has been appointed sales manager of Scott Aviation Corp., manufacturers of aircraft accessories and high altitude oxygen equipment. Before joining Scott as a field engineer in 1942, Brown was associated with Manning, Maxwell & Moore Co., Mason Neilan Regulator Co. and Fischer & Porter Co. in various capacities, including production engineer, sales engineer and district sales office manager. His duties will include not only management of field and sales engineering for current war production but the building of distribution for postwar markets.

Sawyer Thompson, recently resigned from the Petroleum Administration for War, where he served nearly a year as acting district counsel and assistant to the director of a district comprising 17 eastern states, has joined Kellett Aircraft Corp. as general counsel. He has had nearly 15 years' experience in independent, foreign and domestic practice of law and at one time was connected with Bigham, Englar, Jones & Houston, admiralty lawyers.

Joseph P. Ripley, member of the board of directors of United Air Lines, has resigned, to comply with terms of the Civil Aeronautics Act. This was necessitated by the fact that Harriman, Ripley & Co. is to act as banker in connection with some forthcoming financing of UAL. On recommendation of the directors, Ripley will serve United as a banker rather than as a director.

Walter E. Lucie, assistant comptroller of Fleetwings, division of Kaiser Cargo, Inc., steps into the job of comptroller, with the resignation of **Charles L. Nielsen** who joins American Smelting & Refining Co. as assistant to the vice-president and treasurer. Lucie formerly was with Scovell, Wellington & Co., accounting and management consultants, for eight years before joining Fleetwings last July.

THE NEWS VIEWS—



JOSEPH TRACY HARTSON

When W. E. Boeing, a Seattle sportsman and lumberman, decided to learn to fly some years ago, it turned out to be an important step in the life of Joseph Tracy Hartson, new president of Glenn L. Martin-Nebraska Co.

If Boeing had not decided to fly, he might not have engaged Glenn Martin to teach him. If Martin had not taught him, Boeing might not have decided to start his own aircraft plant, in which case, he would not have hired Joe Hartson, a tall, lanky 26-year-old from Spokane, Wash., who had been graduated with an engineering degree from the University of Washington.

▸**Army Contract Competitors** — Hartson was soon to meet Glenn Martin. After having served his apprenticeship with Boeing, he soon rose to the job of assistant to the president. In this capacity, he went one day to the Martin plant in Cleveland looking for "enemy information." Boeing and Martin at the time were bidding against each other for an Army contract. Martin knew what Hartson was up to, but Hartson sold himself to the extent that Martin and Hartson went together to Washington.

Neither got the contract, since the prospective purchase was canceled, but the Washington trip started a friendship between the two men which resulted in Martin's inveigling his former competitor to come to work as his assistant in 1935.

▸**Worked for Wright Aero Corp.**—Hartson had long since left Boeing, and had passed one of the most interesting spots of his career with the Wright Aeronautical Corp. It was during the era of transoceanic hops. Hartson threw cold water on many fly-by-night the-sky's-the-limit dreams. He went so far as to refuse to sell Charles A. Lindbergh his engine for the *Spirit of St. Louis* for he believed that the tri-motor plane was the only one practicable for ocean crossings. Lindbergh got a Curtiss-Wright motor, however, through pressure from Ryan, builder of the plane, but it was with great anxiety on the part of Hartson. He felt that the Lindbergh performance would make or break the air-cooled motor.

Hartson continued to worry with the various transoceanic flyers that followed. His chief concern was the lack of experienced navigators.

During the years when Hartson operated as executive vice-president of Martin, the modernized version of the B-10, the 167 Maryland, the 187 Baltimore, the PBM-1 and PBM-3 *Mariner*, and the B-26 *Marauder* rolled off the final assemblies, were test flown, delivered and fought in combat.

New duties Hartson assumes at the Martin-Nebraska plant include tooling up for a new type bomber.

Capt. Garrett H. Graham, USMCR, Army pilot in World War I, and an aviation specialist at Guadalcanal and other South Pacific points during the current war, has been named associate editor for aviation of the *Marine Corps Gazette*.

E. E. Elliott recently joined McDonnell Aircraft Corp. as chief test pilot. With more than 15 years' flying experience to his credit, Elliott held the same position at Curtiss-Wright's Buffalo plant, and was a Navy flyer for twelve years.

Carl Alger, sales representative with Goodyear Tire & Rubber Co. and Goodyear Aircraft Corp. for 15 years, is now west coast representative of Aircraft with headquarters at Los Angeles. He formerly had charge of Goodyear's account with Glenn L. Martin Co., Omaha, Neb.

Appointment of **Col. Rudolph Fink**, AAF engineering officer as commanding officer of Wright Field, to take effect with the departure of Col. E. M. Robbins, who leaves for an undisclosed overseas assignment, was announced by **Maj. Gen. Charles E. Branshaw**, commanding general of the Materiel Command. Colonel Fink, 38, has been assigned to Wright Field since 1937, and recently has been assistant chief of the equipment laboratory in charge of miscellaneous equipment. He was graduated from West Point in 1929.

Replacing **Lt. Gen. Alexander A. Vandegrift**, USMC, in command of forces in the Solomons area, is **Maj. Gen. Roy S. Geiger**, USMC, one-time head of the Marine aviation branch. **Gen. Geiger** has been a Marine aviator for the past 26 years and commanded the First Marine Aircraft Wing all through the Allied operations in Guadalcanal.

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* *

War News and Tax Selling Bring Decline in Aircraft Shares

Peace stocks also move lower, with some equities in "war babies" showing strong resistance toward price recession.

By ROGER WILCO

With decisive military events encouraging hopes of an early victory, the market has been shocked into new low ground. Smacking strictly as a "war baby," the aircraft industry has prominently been featured in the list of new lows.

This condition has focused undue alarm as to the future of the aircraft manufacturers in the postwar era. Of course, the plane builders will suffer a severe shrinkage in business once the war is over. But the market has been anticipating this event for more than two years.

▸ **Peace Stocks Easier**—That there is something more than a war flavor to account for the weakness in aircraft shares is demonstrated by the fact that peace stocks are also deteriorating in price. In fact, some of the "war babies," in recent months, have shown greater resistance towards price declines.

More important as an immediate market factor is tax selling. The aircrafts are an outstanding group where investors can register losses, with profit, for tax purposes. As another tax payment is due Dec. 15, it is likely a considerable number of sales of this nature will take place by that date. Transactions may, of course, be made through the year-end for tax purposes, but for computation purposes the earlier date may be used as a landmark.

▸ **List at Year's Low**—Virtually the entire aircraft list has been selling at the low point of the year. The extent of these declines is evident in Table 1. It can be seen that declines range from 17 to 54 percent. The low figure belongs to Bendix which has promise of greater stability by virtue of its diversification in various products finding outlets in a number of major industries. To a lesser degree, the same condition prevails for Sperry.

The 54 percent deterioration for Consolidated-Vultee is echoed by the 51 percent drop in Aviation Corp. market values: the holding company owning about 30 percent of the plane builder's common stock.

▸ **Tax Selling**—In years past, abnormal lows have been registered during periods of tax selling. Frequently, purchases made at such times have proved profitable — witness purchases of rail securities last year and the year before. This is not to suggest that aircraft shares will duplicate this pattern—but it is an interesting factor.

Further, present lows take most aircraft shares back to levels prevailing more than five years ago. For example, the last time Douglas sold at $45 per share was back in 1938. Lockheed, Martin and North American present lows were also duplicated during 1938; Boeing has to reach back to 1935. It is certainly a fair surmise that the plane builders, while not having the promise of war boom business, will nevertheless tap more volume after the war than in the years before.

▸ **Uncertainties**—To come up with the correct answer means the solution of many riddles which only time will solve. It is a mistake, however, to view aircraft shares as the sole target for market weakness as military developments move our way. There is the tax factor, for example, which can prove more important.

It most never be forgotten that when any super change occurs in world events—such as going from peace to war or vice versa—great uncertainties are the rule and all market groups generally enter recessive phases.

1943 Market Range—
Major Aircraft Companies
(As of November 27)

Company	High	Low	% Decline
Aviation Corp.	6¾	3⅛	51
Bendix Aviation	39⅞	33	17
Boeing Airplane	21¼	12⅝	43
Curtiss-Wright	9½	6½	32
Cons.-Vultee	21½	9⅞	54
Douglas	73½	45	39
Lockheed	25⅜	13¼	47
Martin	24	15½	35
North American Aviation	14¼	8½	40
Sperry	35	24	31
United Aircraft	40	25⅝	36

Aviation Men Curtail Trade in Own Stocks

September SEC report shows only slight activity by airline officials.

Aviation officials did little trading in their own securities during September. This was revealed by the report recently released by the Securities and Exchange Commission. The few transactions were virtually confined to airline officers.

Pan American Airways' Juan Trippe continues on the selling side, disposing of 900 shares during September, leaving 25,413 in addition to 10,000 in trusts he created. For the four months ended in September, the record shows Trippe sold 9,700 shares of Pan American Airways' stock.

▸ **Bixby Sells 300 Shares**—H. M. Bixby, of the same company, also sold during the month, retaining 1,566 shares after liquidating 300. S. M. Fairchild, a director, disposed of 200 shares, retaining 18,600.

On the buying side, Sigmund Janas acquired, on a net basis, 200 shares of Colonial Airlines, bringing his holdings to 20,410.

▸ **Wolfe on Buying Side**—Western Air's Thomas Wolfe bought 300 shares of his line to boost his holdings to 4,800. During September there was no further liquidation of shares by Coulter, Dwerlkotte, and Guthrie, officers of Western who previously appeared as consistent sellers.

Financial Reports

▸ **Transcontinental & Western Air** reports net earnings for first nine months of 1943 were 3.7 percent lower than for the 1942 period. After reserves for federal income taxes and contingencies, they amounted to $1,288,935, or $1.34 a share, compared with $1,338,817, or $1.41 a share, for the 1942 period.

Operating revenues reached $14,-101,684 to Oct. 1, this year to exceed last comparative figure of $11,-569,521 by 21.9 percent and set an all-time high for any nine-month period in the company's history. Operating expenses, at $11,117,524 were 21.2 percent higher than the $9,173,697 to Oct. 1 last year.

Passenger revenue was up 21 percent, express revenue up 47, and mail revenue 16. Revenue passenger miles for the period increased 16.8 percent from 151,303,549 to 176,-740,173, express ton miles 41.7 percent from 1,568,043 to 2,221,854, and mail ton miles 96.8 percent from 2,-560,488 to 5,038,514.

TRANSPORT

* *

Federal Laws Urged To Clarify Intrastate Aviation Situation

Civil Aeronautics Board maintains hands-off policy, at the same time examining traffic to see that interstate regulations are obeyed.

By MERLIN MICKEL

The intrastate aviation puzzle has some new pieces, and Civil Aeronautics authorities are not sure they can be put together without federal legislation. Meanwhile, the Civil Aeronautics Board is standing by its hands-off policy regarding intrastate operation, watching only to see that such operation does not become interstate through the carriage of passengers in interstate travel, or mail.

Several active or contemplated operations are under discussion in the states, among them Michigan, Virginia, Colorado and Alabama, but the CAB has taken no action and found none required against them. The air carrier division of the Civil Aeronautics Administration is perturbed at the prospect of widespread intrastate activity, but since its jurisdiction is limited to general inspection, licenses for pilots and mechanics and planes and routine determinations of airworthiness, there appears to be little it can do to regulate the operation itself.

▸ **Court Test**—The Board has gone to court in only one case of this nature, when it filed a complaint in September, 1940, against Colonial Airlines. Colonial, operating from New York to Niagara Falls without a CAB certificate, carried no mail on that route, but the CAB contended its investigators had found the line was transporting passengers traveling interstate. So the matter was taken to United States District Court. Colonial stopped the operation of its own accord, however, and on Dec. 12, 1940, a consent decree was entered in the court records whereby the discontinuance was made permanent.

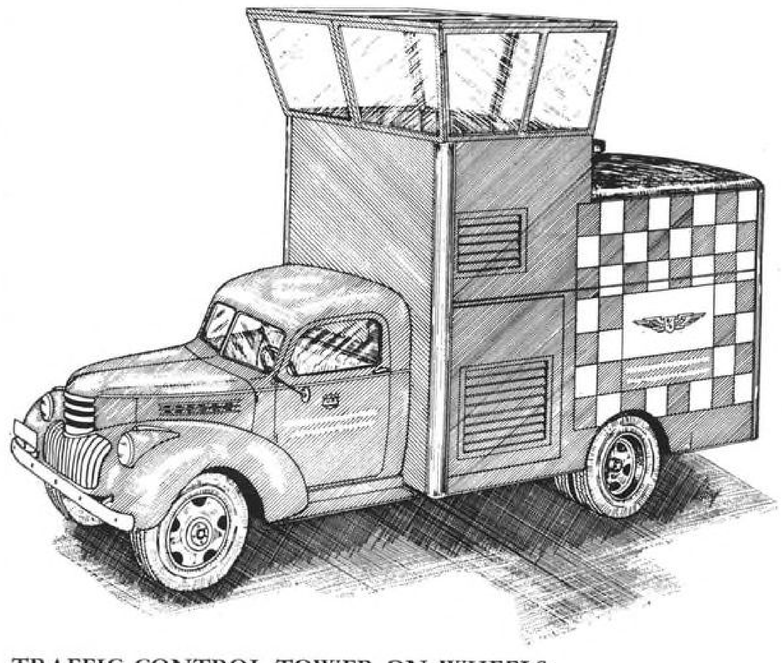
Not long ago the Board was notified by counsel for the Air Transport Corp. at Richmond that it has decided to open intrastate flights between Norfolk and Washington and between Norfolk and Roanoke via Richmond and Lynchburg, using two ten-passenger Stinson tri-motors and a 12-passenger Ford trimotor, under charter granted by the Virginia State Corporation Commission last July 9. Counsel explained that the line would not accept passengers or property for or from destinations outside Virginia, adding that "it is its intention to scrupulously confine its transportation to intrastate traffic."

The planned routes are not now served, it was said, by any direct air transportation service operating on scheduled flight. (American serves Roanoke, Eastern serves Richmond, and Pennsylvania-Central serves Norfolk.) Subsequently, however, the idea of going into Washington and Norfolk was dropped. Both are defense areas.

▸ **Shuttle Flights**—Now Air Transport Corp., which has applied to the Board for routes from Norfolk into Tennessee, Kentucky, Ohio, Pennsylvania, West Virginia and the District of Columbia, has started its intrastate function with shuttle flights from Richmond to Roanoke via Lynchburg, on a schedule calling for one round trip a day.

One of the Stinsons and the Ford are being used—the company is aware of a pilot shortage—leaving Richmond at 9 a.m. and arriving at Roanoke at 11 with 15 minutes at Lynchburg. On the return trip, it leaves Roanoke at 4 p.m. and arrives at Richmond with the same time lapse. The line has had requests for reservations as far as California and New Mexico, but has been careful, its officers say, to explain its intrastate limitations. It has not lacked for passengers.

▸ **Colorado**—Information from Colorado is that S. N. Drum, while he has state permission to operate a route between Durango and Denver and Alamosa and Pueblo, has had difficulty getting equipment and is not operating. Marvin R. Jackson, J. Perry Jackson and Edward E. Drapela of Grand Junction also have asked a state certificate for scheduled flight between Grand Junction



TRAFFIC CONTROL TOWER ON WHEELS:
Drawing shows Civil Aeronautics Administration's new mobile air traffic control unit, now being tested in the Washington area. Built on a two-ton truck and having facilities of the usual control tower, the portable version is said to be able to operate within an hour after its arrival.

and other points, but it has not been granted.

The Jacksons are pilots who have operated their own planes for several years. Drapela is manager of the Grand Junction municipal airport and supervisor of the War Training Service program in Grand Junction. He operates a flying school, while the Jacksons are proprietors of a bottling and distributing company.

▸ **Alabama**—In Alabama, Waterman Airlines and Aero Express have applied for state certificates, but the matter has been referred to the attorney general on the question of jurisdiction.

▸ **Michigan**—In Michigan, meanwhile, Great Lakes Skyways, Inc., subsidiary of Great Lakes Greyhound, has filed articles of incorporation with the Michigan Corporation and Securities Commission, and raised some legal problems in its request for approval of two helicopter "bus" lines in Michigan.

The Michigan Advisory Committee on Aeronautics, a division of the State Planning Commission, has met at the state capitol at Lansing to tackle the problem of what state agency is to regulate future intrastate air transportation. The meeting was keynoted by opposition to "too much Federal regulation." A second meeting is to be held Dec. 8 in Detroit to iron out revision and modernization of Michigan's aviation statutes, the clarification to deal with changes in acts governing airport development, air safety, and passenger and freight transportation.

▸ **Operations Held Up**—Gilbert T. Shilson, chairman of the Michigan Public Service Commission, says Great Lakes Skyways definitely will not be able to operate until the state legislature, which meets in January, clarifies the state's authority to regulate air transportation. Gov. Harry F. Kelly has promised to submit whatever program the advisory committee may offer, to a special legislative session starting Jan. 1.

In the meantime, as a compromise move between the Michigan Board of Aeronautics and the Commission, the latter has recommended that the Board issue a certificate of necessity to Great Lakes Skyways, and that consideration of the question of securities for the firm be placed within the Commission's jurisdiction. Expected Board approval within the next few days would in effect end an impasse which has prevented the Board or the Commission from acting on the application for lack of statutory authority. The Committee, indidentally, has decided that the federal government should not be encouraged to "take over" functions which State agencies may be recommended to regulate.

▸ **Helicopter Line Sought** — Great Lakes Skyways wants to operate a Detroit suburban helicopter line, and a helicopter route between Detroit, Pontiac, Flint and Bay City. Another development which may have a bearing on its application is the fact that the Michigan attorney general has been asked to rule on a petition by Associated Truck Lines of Grand Rapids to the Commission for authority to operate an aerial freight line over two routes and possibly a third into the upper peninsula, on postwar flight between Detroit and Muskegon, serving Flint, Grand Rapids, Bay City and Saginaw, and between Detroit and Benton Harbor, serving Jackson, Battle Creek and Kalamazoo. Helicopters and truck lines would feed main lines. Northern Michigan Airlines, Traverse City, also has filed a petition with the Commission, but action on neither is expected pending legislative clarification.

CAB records show that under safety regulations, 39 states require federal licenses for all aircraft and all pilots, eight others require federal or state licenses for all aircraft and pilots, one requires state licenses only, and one both federal and state. Nevada's requirement of a federal license applies to commercial aircraft and pilots only.

▸ **Regulations** — North Dakota requires federal or state license in the commercial category only. Thirty-three states have air traffic regulations, seven being either statutory instructions or administrative policy of promulgating rules substantially the same as those of the federal government. Forty-seven—all but Rhode Island, also have safety regulations on airport development.

Thirty-three have provisions for zoning. When it comes to requirement of certificates of convenience and necessity, only nine are listed. Twenty-three states have aeronautics commissions, 14 are regulated by other commissions, and twelve have no commission. Wyoming has both aeronautics commission and another commission as its aviation regulatory body. Wyoming Public Service Commission also is against the Lea bill, having passed a resolution last October declaring the measure would "eliminate the present authority of this commission to regulate interstate commerce," and stating the opinion that "nothing should be done to deprive the various states of their powers over such intrastate transportation."

▸ **Board's Attitude** — The Board's views on intrastate operation were set forth in a letter by George C. Neal, general counsel, to counsel for Air Transport Corp., when it was planning its operation.

"There is no requirement under the Civil Aeronautics Act," Neal wrote, "that an air carrier engaged in purely intrastate operations must apply for a certificate of public convenience and necessity unless it carries mail. However, the Board has taken the position in the past that the fact that the persons or property carried may actually be moving in commerce between the states is the important consideration in determining the status of the carrier, and not the fact that the part of the transportation performed by such carrier is between the states or within the boundaries of any single state. If some property or passengers are transported in interstate commerce, section 401 of the Act requires the carrier to have a certificate of public convenience and necessity.

"It is difficult to render an opinion as to whether a particular operation constitutes interstate air transportation as defined by the Act, inasmuch as such a determination can and should be made only after a detailed examination of the manner in which that operation actually is being or will be conducted."

PCA STARTS BALTIMORE MAIL SERVICE:

Pennsylvania-Central Airlines has started air mail service over its line from Baltimore to Pittsburgh and Baltimore to Washington, where previously it was restricted to passengers and express. Pilot on the first mail flight was Bud Baker, shown here with Mayor McKelvin of Baltimore, Hostess Ruth Marck and Roy M. Martin, United States superintendent of mail operations.

DESCRIBES MEXICO'S AIR NEEDS:

Karl de Blinde (left), told Douglas Aircraft sales experts that Mexico's increasing air commerce will require an airplane not now being built by American manufacturers. Here he describes the need to Nat Paschall, Douglas domestic sales manager, and John A. Smith, western cargo traffic superintendent, American Airlines. De Blinde is cargo traffic superintendent of American Airlines de Mexico.

Mexican Plane Needs Listed by AA Official

De Blinde specifies passenger-cargo craft carrying 6-8 persons and 1,000 pounds of freight.

By SCHOLER BANGS

Karl de Blinde, cargo traffic superintendent of American Airlines de Mexico, last week told Douglas Aircraft and American Airlines experts the type of airplane needed to handle Mexico's mounting air commerce, as he sees it after years of experience in airline operations in the Latin Americas.

"It should carry 1,000 pounds of cargo in addition to from six to eight passengers," says de Blinde. "It should be able to use a 2,500-foot runway; get in and out of fields at altitudes up to 12,000 feet; possess around 14,000 pounds gross weight; be a high-wing monoplane to clear natural obstructions besides runways; possess a steep angle of climb for small field operations in and out of jungles; carry extra-wide balloon tires for landing in swampy areas and on rocky runways; have exceptionally wide doors, preferably on the side and close to the ground; and have movable passenger-cargo partitions in the fuselage."

▸ **Utility Paramount**—For audience, de Blinde had Nat Paschall, Douglas domestic sales manager, and John A. Smith, western cargo traffic superintendent, American Airlines.

Speed and cost of such an airplane will be secondary to its all-around utility and ability to carry machinery and commodities for the development of rich mining and agricultural areas now isolated by lack of transportation other than burro-back.

De Blinde began his aviation career in 1929 with Pan American Airways System.

After eleven years with Pan American, he joined KLM in South America and held the position of assistant manager when he transferred to American Airlines de Mexico a year ago.

Traffic Control

A suggestion that information on traffic control devices now restricted to military use be given to a trusted group of commercial air line officials by the War Department has come from Hugh L. Smith, American Airlines operations vice-president.

Smith feels, he said in Los Angeles, that the problem of traffic control may become a critical bottleneck in postwar air lines expansion. He expressed his views at a luncheon tendered 47 American Airlines pilots and co-pilots at which Smith, on his way to Mexico City, discussed privately American's plans for postwar operations here and abroad.

Air Education Drive

An educational program "to advance the understanding of air transportation" has been launched by American Airlines at a New York meeting. Known as Air-Age Education Research, the group is to prepare aviation material for use by schools and colleges and the public. Educators were requested to organize the program and were to have available for consultation "specialists in the field of air transportation."

Dr. N. L. Engelhardt, Jr., is director. Author and research expert, Dr. Engelhardt has been associated with air transportation 14 years. Last year he aided the Civil Aeronautics Administration in preparation of high school text books in the Air Age series.

Six Applicants File For Route Permits

PCA seeks to extend service to link U. S. and Canadian capitals.

By BARBARA FREDERICK

Requests for new routes were filed last week by six applicants including two training school operators, two airlines and two individuals.

Braniff Airways' application for air service between the co-terminals Laredo, Texas, and Nuevo Laredo, Mexico, via Monterrey to Mexico, D.F., came on the heels of a CAB order temporarily permitting Braniff to serve Nuevo Laredo as a coterminal point on Route 50. In its order, the Board found connecting service between Braniff and Compania Mexicana de Aviacion would be substantially improved by permitting Braniff to go to Nuevo Laredo. In the past, passengers going to various points in Mexico were caused considerable delay by ground transportation from Laredo to Nuevo Laredo.

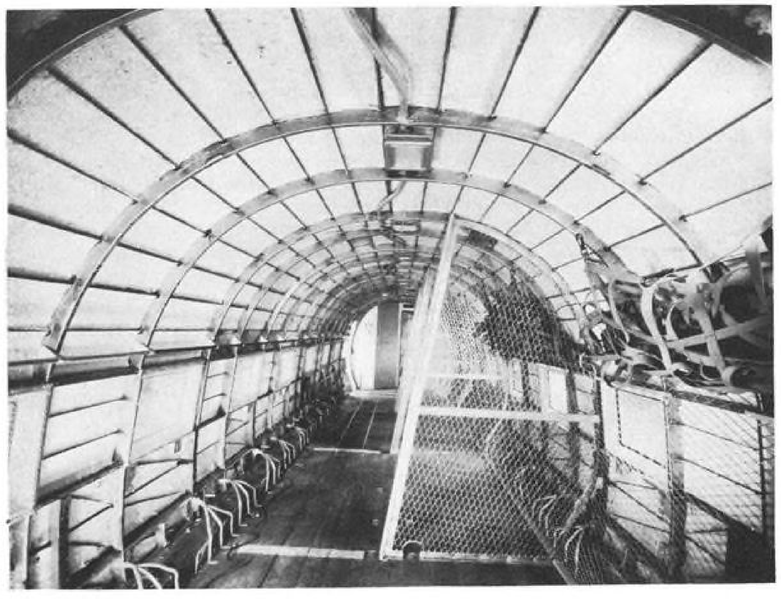
▸ **Washington - Ottawa Service** — Pennsylvania-Central Airlines, also asked CAB for permission to open the first direct air service between the capitals of the United States and Canada by extending PCA's Route 46 from Buffalo to Ottawa, Canada, via Rochester, N. Y. Service is now provided from Washington to Buffalo by way of Baltimore, Harrisburg and Williamsport.

Massey & Ransom Flying Service at Colorado State College Airport, Fort Collins, Colo., applied for two wing-like routes from Denver. One would go to Casper, Wyo., out through various points and back via a different route. The farthest point from Denver on the other route would be Alliance, Neb. Company also asked to give service during the tourist season between Longmont, and Fort Collins, Colo., via Estes Park. Twin-engine craft capable of carrying a pay load up to 2,500 pounds would be used. Company operates what it described as the second largest training school of its type under CAA-WTS.

▸ **Interceptor Line**—Walter S. Fullwood, manager of McAllen, Tex., Municipal Airport and operator of an approved CPT Primary School, with Clyde H. Roquemore, student pilot, asked permission to intercept passengers and mail from mainliners at Corpus Christi and transport them to McAllen. They propose to use four-place Beechcraft, operating one round trip daily. When feasible, they would add property and service along this route.

Application to employ amphibious helicopters and serve points on navigable streams was filed by Read Quenten Chalfont, USNR, "normally residing at Pittsburgh." Some places Chalfont proposes to serve are the "Point" in metropolitan Pittsburgh at the confluence of the Allegheny and Monongahela Rivers; points on the Ohio River near Ambridge, Pa., East Liverpool, Ohio, Wheeling, W. Va., on the Beaver River, near Youngstown, and on the Monongahela, near McKeesport, Pa. Scheduled service would be provided for passengers, mail and commodities from Allegheny County Airport to the river points and, in some cases, to other airports.

▸ **Helicopter Route**—Landon Lawson Clevinger, Centralia, Wash., filed two applications with CAB, bringing to four the number he now has pending. By extending to San Francisco a previously applied for route which terminates at Crescent City, Cal., an "all coast route" would be available for passengers, mail and property, from the Puget Sound region to the San Francisco Bay region, if these applications are granted. Again proposing to use helicopters, Clevinger also asked for a circular route extending to and from Portland, Ore., via 16 intermediate points in Oregon. He also seeks to provide a film, magazine and newspaper service. In scheduled and unscheduled operations, he would carry motion picture film, advertising and other necessary theatre supplies, magazines and metropolitan newspapers from Portland and Seattle to any point in the U. S. within 300 miles.



ALL-CARGO PLANE INTERIOR FITTING:

This interior picture of one of United Air Line's cargo ships, empty, shows at right the adjustable nets of canvas webbing used to lash packages of various sizes into the bins so they will not be shaken up or break loose. They are United's own development. The plane is quipped with reinforced plywood floor, plywood siding, and heavy steel wire screens over windows. Note the half round steel skids fixed to the floor to provide for sliding packages along the aisle, which United engineers regard as superior in some respects to roller conveyors.

Army Staffs 23 CAA Flight Control Units

Move gives military weight to advices to war pilots.

War Department has placed its own staff in each of the 23 Civil Aeronautics Administration flight control centers, thereby giving military weight to advices to Army pilots. Army "pilots' advisory service" is coordinated with CAA's airway traffic control service, which still operates as flight adviser to Navy and private pilots. (The airlines have their own flight control systems.)

SWEDES SEEK PLANES:

P. A. Norlin (right), youthful president of Swedish Air Lines, Stockholm, says "we have reason to believe we will get more equipment." He is shown with K. H. Larsson, SAL chief engineer. Norlin's "shopping tour" centered at Douglas Aircraft Co.'s home office in Santa Monica.

The Army service is provided by the Flight Control Division of the Office of Flying Safety, Headquarters Army Air Forces, with Col. George C. Price commanding. Flight control officers at various stations receive flight plans of all point-to-point missions in their areas, and each flight is plotted on a magnetic map along the prearranged route according to scheduled speed.

▸ **Aid in Locating Planes**—Positions are checked against reports from stations in radio contact with the pilot, and warnings of hazards are communicated through these stations. Army expects the system to be a help in "locating and rescue of forcefully grounded planes."

Opening of the system was suggested to CAA about a year ago, and was said to have the personal backing of Gen. H. H. Arnold, commanding general of the Army Air Forces. At that time the Army did not have ground-to-air communications, nor point-to-point communication on the ground.

▸ **Reserves Called**—CAA's Air Traffic Control division contained eight or ten men in the reserves, and these were called into the Army as a nucleus for the new system. The CAA already had established flight control training centers at its seven regional offices, and was training several hundred Army and Navy personnel. With this beginning, the number of trainees grew until staffs now have been placed in each of the centers. Most recently activated were the five at Minneapolis, Chicago, Detroit, Cleveland and Pittsburgh.

Army flight control advices are issued in each case through CAA's senior control officer on duty, and the pilot makes his own final decision after he receives notice of a developing hazard. Compliance with the suggestions has been so high, CAA officials say, that it has been deemed unnecessary to issue the advices in order form.

AVIQUIPO AROUND THE WORLD

Suggestion System

Over 700 ideas adopted by plants, with $12,000 awards, UAL official reveals.

Suggestion systems have an important value as aid to management-employee relations in addition to their place in the war effort, says F. A. Denz, newly re-elected executive secretary of the National Association of Suggestion Systems.

Denz, who is general chairman of United Air Lines' employees' suggestion conference, told the Office Management Association of Chicago recently that the conference has handled 4,000 employee suggestions. Over 700 of these have been adopted, with awards of more than $12,000 in war bonds and stamps. Thirty-five have won production awards.

▸ **Personnel Relations Improved**—"Primary objective of the suggestion system," he said, "is improved personnel relations," adding that "while the system has shown its value in war production, it will remain as a valuable fundamental and permanent asset when the war is ended."

The last few years, Denz asserted, have seen the suggestion method "coming to the front. It has been developed in thousands and thousands of plants and the necessity of improving management-labor relations has been in the industrial mind. The investment has proved a dividend-paying one.

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CAB ACTION

• Mid-Continent Airlines was authorized by CAB to suspend service temporarily at St. Joseph, Mo., on A.M. 26, in view of national defense activities at the airport.

• Snow conditions at Albany made necessary CAB approval of temporary suspension of air transport operations there and the tansfer to the Schenectady County Airport of scheduled air carriers.

• Petitions of Braniff Airways, Chicago and Southern Air Lines and TWA for CAB to reconsider a former consolidation order, were denied. The consolidation to which these lines objected involves, among others, the cities of Tulsa, Oklahoma City, Fort Smith, Little Rock, Memphis and Birmingham. Other airlines involved are American Airlines, Continental, Delta and Eastern. Request for oral argument by TWA in this proceeding likewise was denied.

• CAB ordered certain exhibits in the Western Air Lines acquisition of Inland Air Lines proceeding withheld from public disclosure. These are contracts between Inland and the War Department.

• With Board member Harllee Branch concurring for the first time on the .3 mill per pound mile rate for mail transportation, this rate was fixed for Hawaiian Airlines as of Feb. 1, 1943, computed on a direct airport-to-airport basis. The line's former rate was 25 cents per airplane mile. In separate statement, Branch commented that "according to the estimates of future operations under .3 mill per pound mile rate, this carrier will earn after federal income taxes at 40 percent a net profit of 13.42 percent on that portion of its investment allocated to the mail service; and from combined commercial and mail services it will realize a net overall profit of 41.61 percent after Federal income taxes at 40 percent". In the Pennsylvania-Central rate case, Branch had expressed the opinion that a net return of 10 percent was a fair and reasonable profit. Recalling this dissent, he stated in this instance that "periodic forecasts of operating results are subject to vicissitude and that the available method of apportionment of both costs and investment among the various transportation services of the carrier are neither perfected nor tested, it seems to be an equitable policy of the Board to make provision in our estimates for a 15 percent net return on the investment apportioned to the mail service in order that the carrier may be reasonably assured of receiving at least a 10 percent net return on this investment."

• Citing that safety of operation demands suspension of service at Cripple Landing, Alaska, Alaska Star Airlines asked CAB for an order authorizing this temporary suspension. Best landing surface available at Cripple Landing is a sand bar in the Innoko River, but changes in the amount of flow of the river makes landings impossible 90 percent of the time, the application stated.

• Arthur G. Woodley, Woodley Airlines, Anchorage, Alaska, asked to have temporary suspension of service at Medfra and Takotna continued. Due to the absence of land airports at these points, suspension had been granted the line during the summer months. Woodley intends now to use wheel equipment entirely, except in unusual circumstances, on the route between Anchorage and Flat, and calls attention to lack of safe wheel landing areas at these places.

• Boston Port Authority, intervener in New York-Boston proceedings, filed a brief with CAB which concluded that "public convenience and necessity require that Boston be afforded the competitive air transportation service and the additional one-carrier transportation service which will result from granting the application of Northeast to operate between Boston and New York; granting the application of Eastern to operate between Boston and points south of New York; and granting the applications of United and TWA, at least in the Boston-West proceeding, for authority to operate between Boston and the West."

Brief filed by Seaboard Airways in the New York-Boston case contended that unless some territorial limits are imposed, the few large airlines will monopolize air transportation after the war, leaving no place or safety for small regional carriers. It further contended that TWA and United should not be permitted to invade the north-south field between New York and Boston.

Other briefs filed in the New York-Boston case came from American Airlines and the New York, New Haven & Hartford Railroad. The latter asked the Board to permit surface carriers to enter the air transportation field, contending that their local experience would give a coordinated service that would be more in the public interest. American claimed that the competition which would result on this route, far from "assuring the sound development of an air transportation system," might prove just the opposite, resulting in competition "full-throttle and unrestrained."

• Reasonableness of passenger rates should be determined by reasonableness of airlines' profits, Public Counsel D. W. Markham argued before the Board in oral hearing on rates of Baniff, Delta and National. In these cases, the profits are excessive, he stated. Refuting the claims of counsel for the airlines that the times are abnormal, Markham argued that whenever it appeared that an "abnormal" period might persist for some time, it was the Board's responsibility to adjust rates.

CHARLESTON HOST TO AIRLINES:

Charleston, W. Va., Chamber of Commerce was host recently to representatives of four airlines serving the city after county residents approved a $3,000,000 bond issue for a new airport project. Left to right are Maury Knowles, southern regional traffic manager of Pennsylvania-Central; Charles Rheinstrom, senior vice-president of American; E. Smythe Gambrell, general counsel for Eastern; Harry R. Stringer, traffic vice-president of All American Aviation, and Brown D. Truslow, Chamber president.

Rail-Air Link Seen In Canadian Set-up

Dickins, of CPAL, predicts airlines will be complementary to surface units after war.

By JAMES MONTAGNES

A strong postwar relationship between Canadian air cargo transport and the Dominion's railways is anticipated by C. H. "Punch" Dickins, vice-president and general manager of Canadian Pacific Air Lines.

"Basically there must be enough traffic officially to set up an airline on its own feet, regardless of what the railway hauls in competition with it," he told the Montreal Railway Club. "In other words, airlines will, to a large extent, be complementary to surface units.

▸ **Railroads' Contribution**—He expressed doubt that either of Canada's air lines could have achieved the "prominent place they have in the air transportation industry today" without many of the services being provided, either directly or indirectly, by the parent rail companies (Canadian National for TCA, Canadian Pacific for CPA).

"We have drawn upon the experience and facilities of the parent rail companies to a large extent to provide us with services, which in their own right would be costly if operated by the airlines alone, but which, as part of the railway, represent only a minor fraction of the total expense. The manner in which the airlines have been treated by their railway parents in Canada, proves beyond all doubt that transportation service in its broadest form is what these companies are offering the Canadian people."

▸ **Room for Both**—Dickins is convinced that "there is plenty of room within and outside Canada for the operation of both the nation's railway-controlled air lines."

His remarks recalled recent observations on the postwar future by President L. B. Unwin of Canadian Pacific Air Lines, who felt that the Canadian Pacific, "as a long established world-wide transport system, will undoubtedly extend its operations and continue to occupy its natural place in the development of world trade and travel routes to meet the demands of the coming air age." With most of CPA's operations tied to the war effort, he forecast "an equally important part in reshaping Canada's civilian transportation structure in postwar years."

▸ **Air Cargo**—Dickins described air cargo as "the biggest question mark in the aviation business, and likewise the biggest potential source of postwar traffic. Air cargo will require new loading devices, refitting of plane interiors, special standards and light weight containers and the like. Interline traffic will have to be speeded up."

The problem, however, will not be to increase the speed of the carrier but to increase efficiency and speed of the ground organization. "Air cargo will develop new types of products to move by air alone and will open new markets altogether inaccessible to surface transport. Air cargo also will mean reduction of insurance charges, lower packaging costs, and will develop smart merchandising technique by the suppliers carrying smaller inventories."

▸ **Completion Negligible**—He added that "while Canada has long been one of the world's major carriers of commercial air cargo, particularly as a result of northern freight flying, it also is true that little of this traffic has moved in competition with the east-west rail business."

Quoting statistics for 1942 for rail traffic and air traffic in Canada, and pointing out that "these figures both discount over-exaggerated claims of the air ruining the railways and likewise support the claim for a reasoned development of air traffic," he showed that both Canadian railways last year carried 126,000,000 tons of freight, while CPA and Trans-Canada Air Lines carried 5,000 tons, that the two railways carried 44,000,000 passengers against the 165,000 carried by the airlines, that the railways carried 250,000,000 pounds of mail and the airways 4,000,000 pounds, that of the 22,000,000 pounds of first class mail carried last year in Canada, the airlines only carried 4,000,000 pounds.

KLM Office Shifted

To overcome a distance handicap, the Netherlands Commission for Public Relations in Wartime has returned management of KLM, Royal Dutch Air Lines, to London as a step to its eventual reestablishment in Holland.

More Airliners

The Army is reported to be considering recommendation by the Civil Aeronautics Board that about 10 airplanes be returned to the airlines before the end of this month. Tentative allocations, it is understood, already have been decided on.

NAVIGATORS DISCUSS FOREIGN LICENSES:

Lined up, after a meeting in New York to discuss proposals for standard license requirements, are chief navigators of foreign operating air carriers and some association representatives, Left to rght: (front row) Navigators J. M. Robinson, Pan American; W. A. Bey, TWA; C. H. McIntosh, American Airlines; H. C. Thomasson, American Export Airlines; R. H. Ellenberger, Pan American; and President J. H. Blackburn of Airline Navigators Assn. (Center Row): Navigators, J. W. Kroupa, Pan American; W. L. Danielson. American Export Airlines; K. Coughlin, Consolidated Vultee; E. T. Bolton, TWA; J. R. Voeth, Consolidated Vultee. (Top row): Navigator J. W. Robertson, Pan Am Airways Navigators' Assn.; Frank T. Reese, president Navigators' Assn.; P. H. Redpath, TWA navigator, R. D. Fraser, assistant navigator, American Airlines; and A. W. Lapine, supervisor of navigators, Eastern Air Lines.

SHORTLINES

▸ United's air mail loads in October reached a new high of 1,017,518 ton-miles, compared with 857,712 in September and 743,301 in October, 1942. Express ton-miles in October were one percent over the preceding month, but ten percent under October a year ago.

▸ Harry Hopkins discusses air bases and air power in the current issue of *American Magazine*, predicting that the United States will have an "Understanding" with Great Britain about the first, both as to civil and military bases. He forecasts that the United States, with Russia, Great Britain, China, and probably a few others, "will have to maintain powerful air forces for years after this war. . . . At least we and Great Britain will have to maintain invincible fleets of naval ships. It takes real power to maintain the peace of the world."

▸ Northwest Airlines figures for the first ten months of this year showed 3,984,377 airmail pounds carried, an increase of 1,491,063 over the 1942 period. Company carried 1,266,404 express pounds through October this year, compared with 954,722 last. Airmail in October totaled 556,164, an increase of 33,316 over September.

▸ Lt. Gen. Manuel Tovarias, who commands Chile's air forces, ended a tour of this nation's air facilities with a prediction at Orlando, Fla., that the war will be followed by a heavy airborne commerce between North and South America. The air power being developed for the war, he said, will grow into the air power for commerce, and air transportation's fast development will tend to break down existing commerce restrictions.

▸ Continental Air Lines is ready to install ground equipment incidental to service between Denver and Kansas City, which it expects to start shortly after the first of the year, according to Terrell C. Drinkwater, executive vice-president. Continental now is overhauling in its Denver shops the *Lodestar* it received a month ago from the Army, which has been using the ship for military service since acquiring it from CAL in 1942. Plans for the Denver-Kansas City run call for one round trip daily via Topeka and Salina and Topeka, Kan. The route will add 560 miles to Continental's system.

▸ Railway Express Agency reports the nation's airlines carried 2,750,494 pounds of air express in July, 36.6 percent more than in July a year ago. Shipments numbered 128,245, an increase of 8.8 percent, and gross revenue was up 12.5 percent, July 15 was the effective date of rate reductions up to 12½ percent.

▸ Red Cross, announcing flight from India to China of 15 plane loads of medical supplies, totaling 32 tons, said the large scale movement, first in several months, was one installment of a "comprehensive program involving large quantities to be flown in during the next six months." All supplies in the first flight were donated by the Red Cross.

Assaying the Helicopter

GROVER LOENING'S carefully prepared, concise summary of the technical status of the helicopter today and the problems which will prevent its wide public use for at least five or ten years is a valuable service to aviation. Such an authoritative statement has been needed.

In an address of less than ten typed pages, delivered in Brooklyn December 3, the WRB and NACA official sketched an outline which should be distributed widely.

Paying tribute to the "eminently successful pioneering of Igor Sikorsky" and the important developments underway in this country, Mr. Loening makes it clear that the helicopter's long-range future is "far too great" to risk more disappointment and disillusionment when utmost confidence will be required to pass through the development period.

Yet continued dissemination of rosy prophecies about the possibilities of day after tomorrow can do just that.

"Time and again in aviation's history an oversanguine public appraisal of a new development gets far ahead of the facts—so much so as to cause a disappointment at finding a lesser future disclosing itself," he says. "No instance comes more forcibly under this influence than the present and future development of the helicopter."

There are perplexing difficulties, but Mr. Loening is confident that the nation's engineers will work them out.

Looking Ahead for Civil Flying

CIVIL AIR PATROL'S COMMANDER has sent a letter to personnel disclosing that "the outlook for CAP is more favorable than at any time since we began."

With recent addition of 288 Army-owned light planes, activities by the 48 wings in connection with recruiting for the Air Forces will be stepped up.

Marked expansion of flying operations has been approved to release military equipment and Army flight crews for combat duty.

Military regulations have been eased in the Pacific coast area to permit more CAP services. New bases will be activated shortly in other areas, Col. Earle Johnson reveals. Formation of CAP units at aviation plants throughout the country has been underway for weeks.

CAP is one of the two great wartime operations utilizing the facilities of civilian aviation. It is significant for the future of private flying that the Army, of which CAP is an auxiliary, is authorizing such expansion.

CAP's outlook is in sharp contrast to that of the other civil flying war aide, the war training service's national system of flight schools. WTS at this moment has no firm commitment that its life will be extended beyond June 30. Some of its contracts expire in early spring. Such assurance is still dependent on passage of the omnibus Lea Bill or the passage of a special WTS measure.

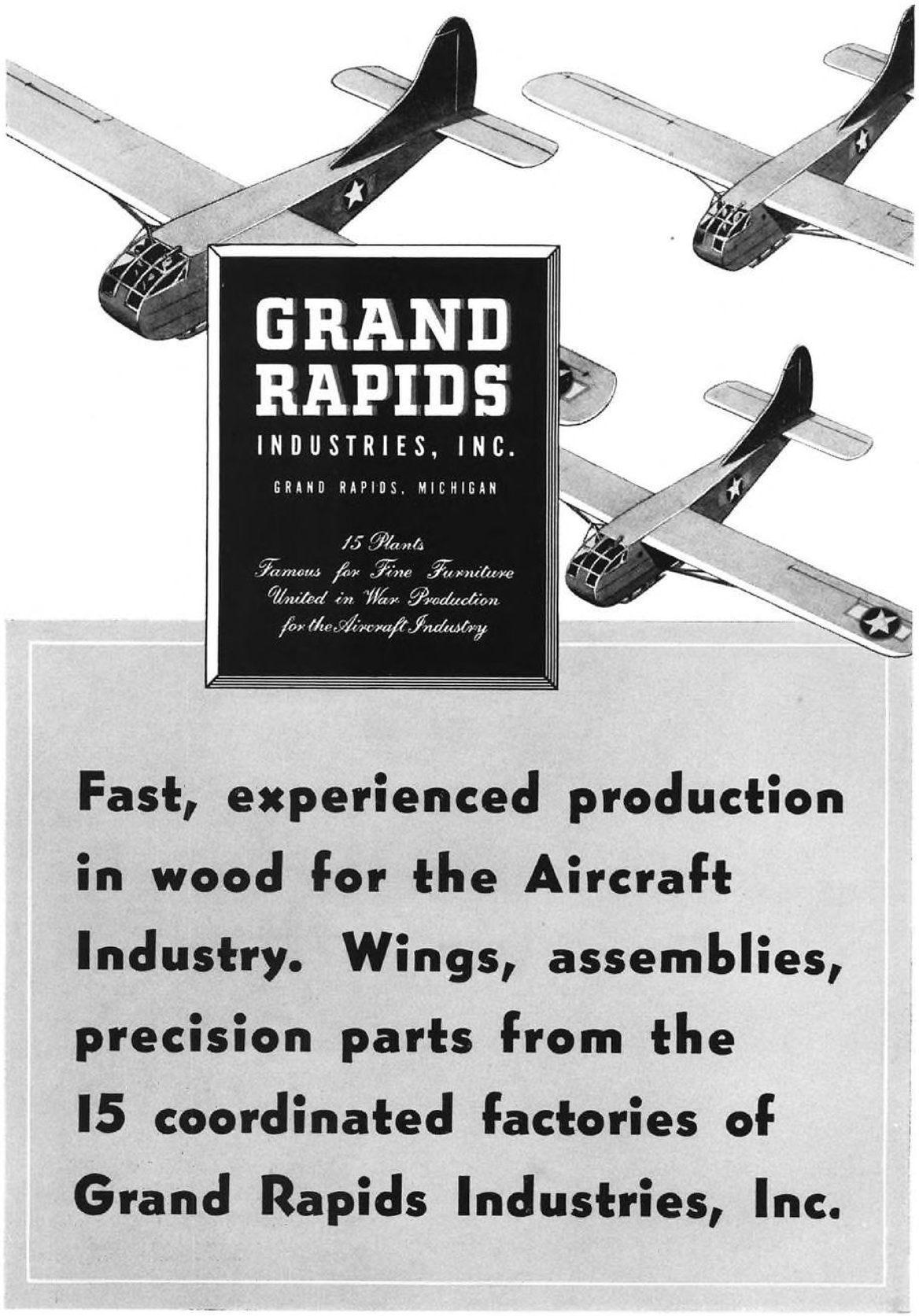
It is to be hoped that the Army, Navy, and Congress will awaken to the present and future value of WTS to them and to the nation.

WTS, besides preparing thousands of young men for military service, has set up a network of flight training facilities which will be of permanent military value after the war.

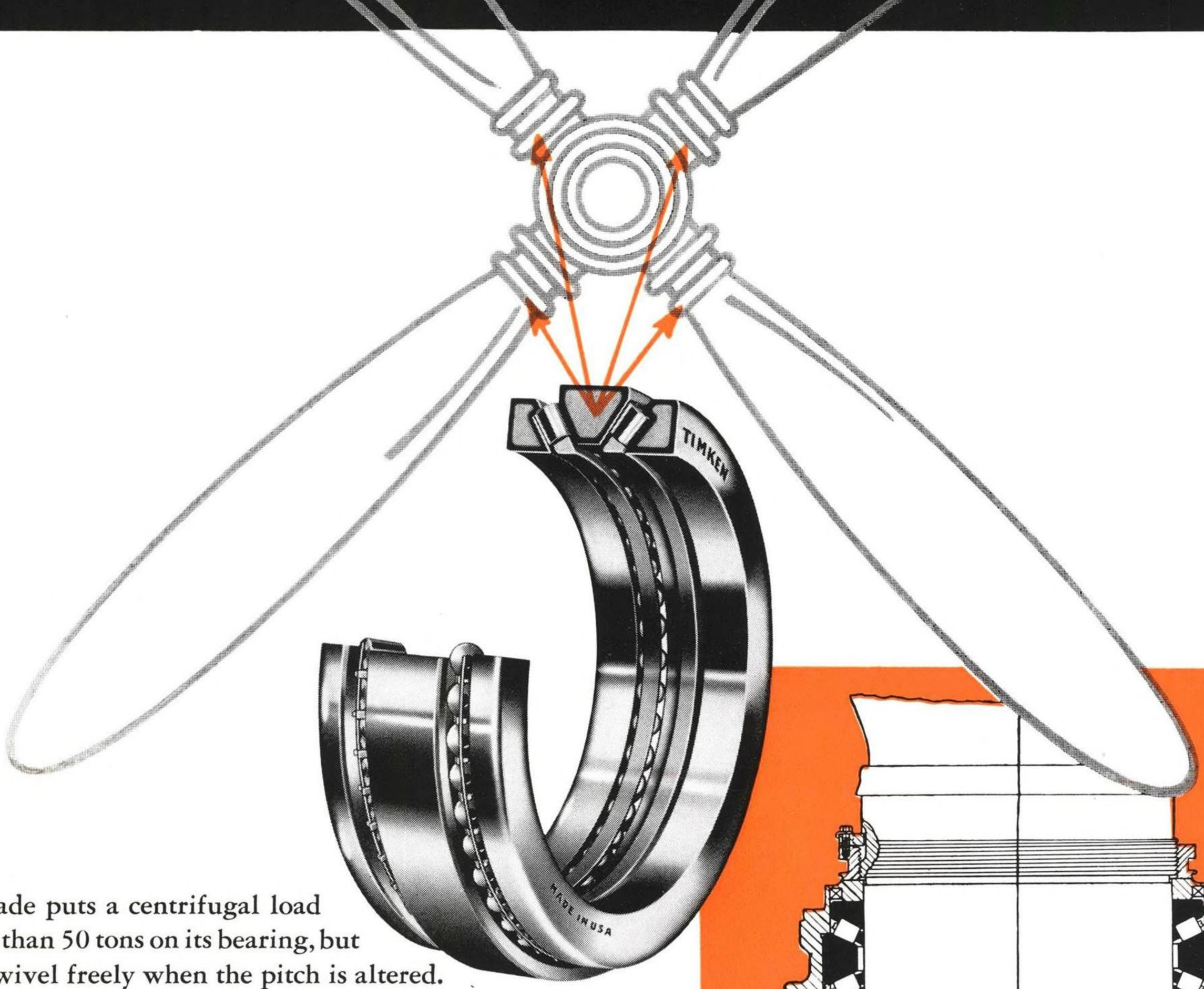
Even though the armed services' own schools may be able to accommodate all future replacements, WTS should not be permitted to let up its pace. "If we are to hold the place which we will have won, we must make sure that a large number of young people will be taught to fly each year," R. McLean Stewart, executive director of training of WTS said last week. "We need such an influx of young pilots if we are to retain our command of the air. We need them for civil aviation. We cannot rely on those who will then be the veterans of this war. In a year or two after the peace they will have settled down to civilian pursuits. Nor can we leave aviation training to the unaided resources of private individuals."

The WTS system should be maintained as a going concern. It should not be allowed to start disintegrating for lack of assignments.

ROBERT H. WOOD



Over 50 Tons
the weight of two flying "FORTS"
ON EACH BLADE BEARING



ch blade puts a centrifugal load
more than 50 tons on its bearing, but
s to swivel freely when the pitch is altered.

et that, comparatively, is the easiest part of the bearing
oblem. Various tilting forces must be taken into consid-
ation; those due to inertia, those due to heavy propelling
rust, and those due to gyroscopic effects.

l these forces, applied at a long leverage, have to be carried
a few rollers on opposite sides of a base of only 6¾" span.

ne section shows the specially developed Timken Tapered
oller Bearing that carries these complex loads with free-
m of action, but without a hint of backlash. In the post-
ar era of air transport make sure you get the advan-
ges of Timken Bearings not only on propeller feather-
g mechanisms but in many other points of application
hich will be revealed in future issues of this maga-
ne. The Timken Roller Bearing Company, Canton, Ohio.

HIGHER LOAD CAPACITY
INCREASED STABILITY

Wherever the Timken Tapered Roller Bearing is used it results in higher load capacity and increased stability against every combination of stress. This illustration shows Timken Bearings as mounted in the hub of a controllable pitch propeller blade.

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TAPERED ROLLER BEARINGS