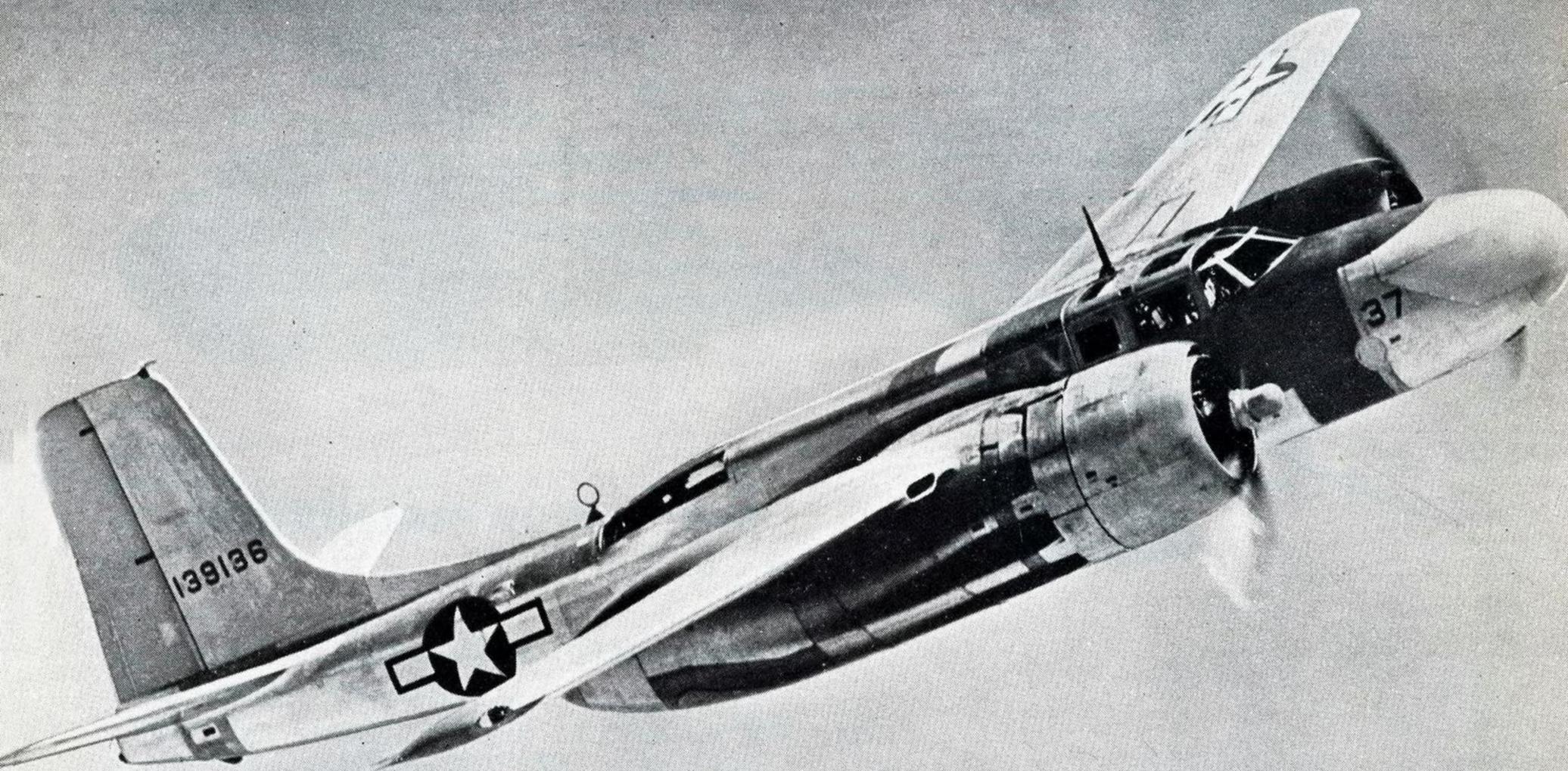


Aviation News

McGRAW-HILL PUBLISHING COMPANY, INC.

NOVEMBER 6, 1944



Douglas A-26 Invader: *Fastest and newest of its type is this blunt-nosed, square-bodied, low level attack bomber. Long on the secret list, this versatile plane already has seen action. All guns were removed to gain military release of this flight photo during demonstration flights at the Douglas Long Beach plant.*

Air Accord as Instrument for Peace Stressed at Chicago

Lines begin to form early in support of U. S. or British programs; need for immediate opening of international routes on defeat of Germany and Japan emphasized in Roosevelt message....Page 7

New Plan Favors Negotiating Terminated Contracts

Recommended procedure follows that supported by aircraft manufacturing industry in contrast to following detailed formula; negotiation called "mainspring" of settlement.....Page 9

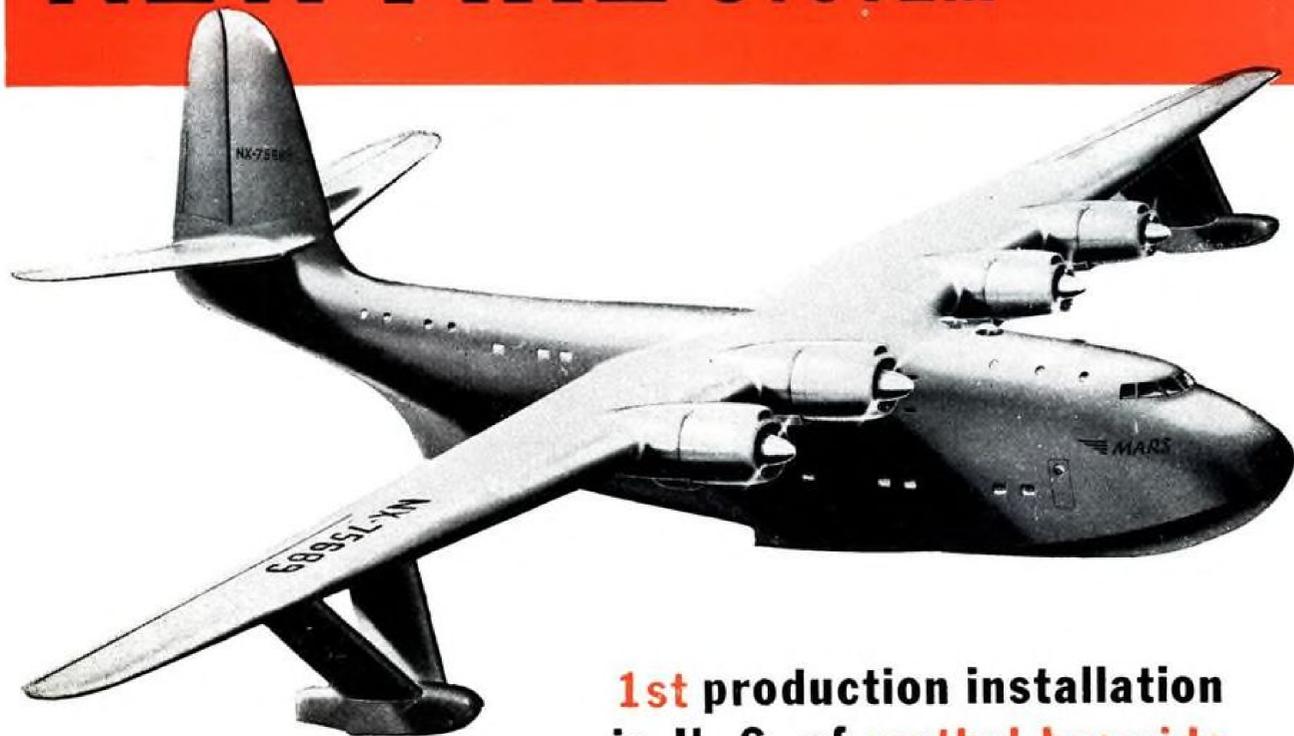
Clayton Authorizes Salvaging, Scrapping of Surplus

New order of outgoing administrator of SWPA expected to result in heavy declarations of surplus by Army and Navy in move to clear fields of obsolete and damaged combat planes.....Page 10

Study Proposal to Divert Planes from C-47 Assembly

Program suggested by Douglas and requiring Army sanction, providing companies approve, is expected to affect enough aircraft to meet CAB's estimate of needs for present operations..Page 50

Martin JRM-1 gets NEW FIRE EXTINGUISHING SYSTEM



1st production installation in U. S. of methyl bromide extinguishing system

There's a new way to kill fire on the Glenn L. Martin JRM-1. For the first time production models are being equipped with built-in *methyl bromide* extinguishing systems. Walter Kidde & Company is proud to have scored this important *first* on the new production model of the great Martin *Mars*.

Methyl bromide, the new Kidde fire-killer, is a vaporizing liquid type of extinguishing agent which is extremely fast and effective against engine fires. Another important feature is the system's *extreme lightness in weight* . . . considerably less than other types of built-in systems. The new Kidde system is simple in design and operation.

For many months Kidde engineers have been busy in the development of a methyl bromide method, now perfected. This is not just an extinguishing system for the world's biggest seaplane. This new Kidde equipment means a *new step forward in air safety!*

Methyl bromide fire extinguishing gives great promise for today's military planes and commercial air transports. Walter Kidde & Company is prepared to discuss installation and performance data with interested manufacturers. Write us, on company letterhead, for full details on this new extinguishing method.



WALTER KIDDE & COMPANY, INC., 140 CEDAR STREET, NEW YORK 6, N. Y.

THE AVIATION NEWS

Washington Observer

MARTIN PERSONAL PLANE—Reports that Glenn L. Martin Co. has some engineers devoting spare time to design of several types of personal airplanes are confirmed by reliable, though not direct, sources. Appointment of Martin as a member of the Personal Aircraft Council of the Aeronautical Chamber of Commerce first aroused curiosity. Martin's press relations office told "Aviation News" last week that it had no comment on the reports. Interested observers note that Martin, though he has three or four designs of commercial airplanes for post-war use, has not as yet taken any orders, and apparently has available capacity for a personal plane program. Mr. Martin, they say, is the type of bold thinker who might take a chance on the large-scale development of private flying. He is also sensitive to aviation history and his part in it. His first airplane, completed in 1909, was a "personal" type, which he flew himself.

TCC LIKES C-82—Troop Carrier Command is impressed with the possibilities in Fairchild's C-82 cargo plane, whose twin-boom tail and rear-end hatchway gives unusual load handling convenience, and a clear get-away for jumping paratroopers. The volume of free-fall military cargo is increasing as anti-crash packaging is improved. Responsible officers say the rear door will make it easier to kick both free-fall and parachute freight overboard more accurately at the dropping zone. It will improve also the adaptability of mechanical discharge of cargo, such as container release devices (patterned after bomb racks and releases) and possible power conveyors.

SINGLE AIR FORCE—Another drive for a single air force is brewing. Look for it to have the support of the isolationists. Isolationist line is that land-based air power will be sufficient defense. This goes away back into our history, when the young nation was hamstrung by the isolationists of that day, who argued that all America needed was coast defense troops and a Navy designed for coastal operations only. That concept remained strong until the days of Mahan and the first Roosevelt. Isolationists are whooping it up again, making strange bedfellows for the single air force protagonists.

SWPA REPORT—Surplus War Property Administrator W. L. Clayton has prepared his final report to War Mobilization Director Byrnes and will submit it shortly, probably when the new Surplus Property Board is appointed. The report is voluminous and details the actions of

SWPA from the date of the executive order creating the administration.

*

SURPLUS BOARD REGIONAL—Odds now are that the new Surplus Property Board will be appointed on a regional basis rather than a functional basis. Administration of the new law is considered too complicated to confuse it further by having purely business, labor and legal representatives on the board intent on projecting the views of their own groups.

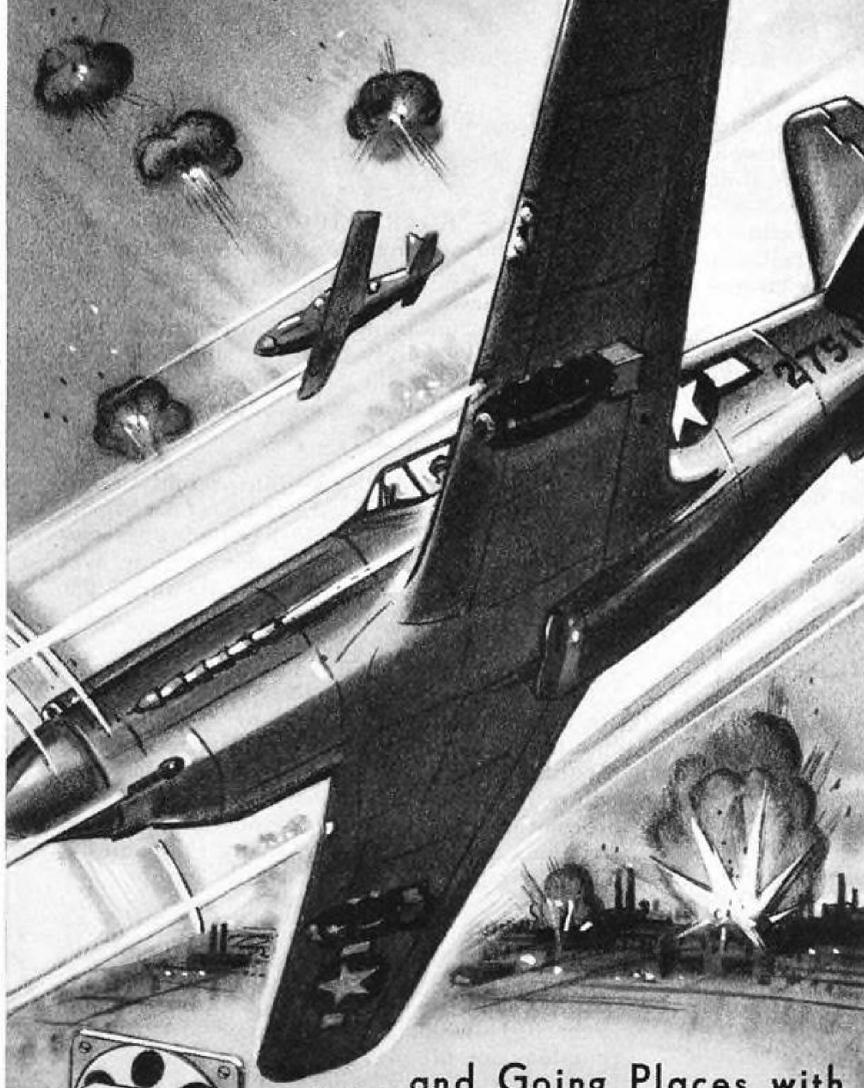
UNFLYABLE PLANES—Planes sent to salvage centers are pretty sure to be rendered permanently unflyable to avoid having a vast supply of obsolete but usable planes hanging over the heads of the Army and Navy Air units. The lesson of the last war is too strong.

CHANGING SHAPES IN SKIES—One aircraft company is testing a plane of radical design that is claimed to be more efficient than the Northrop flying wing. A war design, it probably will never be used in combat, but other versions are in the wind tunnels. Incidentally, war restrictions are being used by many companies to keep their post-war designs under wraps.

END OF THE TRAIL?—Some engine company experts expect that the aircraft engine in its present form will be through when 5,000 hp. is reached—which isn't too far off. After that, they look for the other new types to take over. But others point out that the same thing was being said after the last world war. It was six years after war before the horsepower bottleneck was pushed beyond the 500 hp. level. Something like it probably will happen again if young and imaginative engineers are given their go-ahead signal.

REVISION UPWARD—Estimates of aircraft necessary to equip and maintain future U. S. air power may have to be revised upward as a result of expanding air-borne operations. The Army is frankly facing the possibility that all ground forces may leave off walking and rolling and start flying. There is no airforce-groundforce fight involved. The Army simply shifts its logistics into a third dimension. If such a shift takes place on a large scale, vastly more airplanes will be needed than are presently planned for tactical and strategic aviation. How far the move may go in this war is unpredictable. It is certain to be developed to its full possibilities later on.

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AVIATION NEWS

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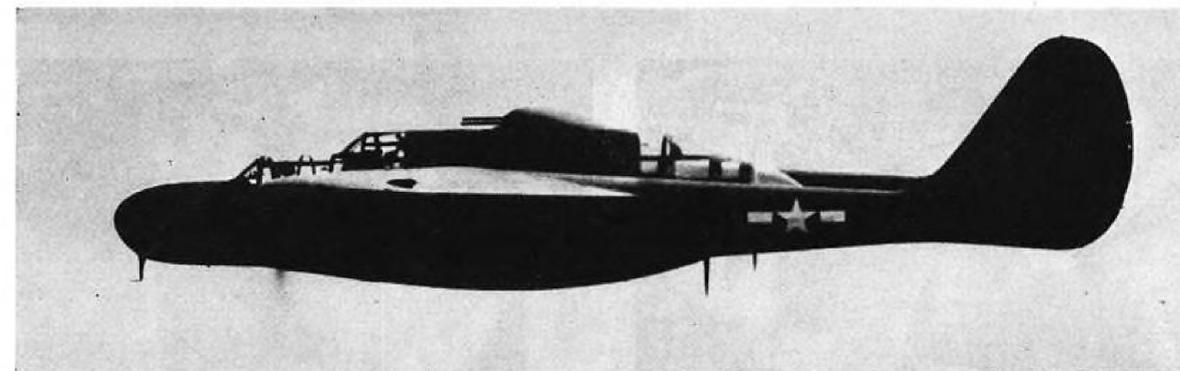
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Washington Observer

STEAMSHIP LINES IN THE AIR—Admiral Land had a luncheon date at the White House last week and it is understood he took up the matter of steamship companies operating airlines. Whatever the President's disposition on the matter might be, Maritime Commission sources interpret it as favoring their position. With a deadlock on the question in Congress and a deadlock in Government departments—

with the CAB taking one position under the Civil Aeronautics Act of 1938 and the Maritime Commission taking an opposite position under the Merchant Marine Act of 1936, Washington observers are looking to the President to take some action. Meanwhile, the Maritime Commission appears intent on encouraging air operations by steamship companies, as proposed in the 1936 Act, regardless of CAB's actions.



First official photo of top turret of Northrop's P-61 Black Widow Night Fighter.

Industry Observer

▶ Total output of warplanes in October was 7,429 according to preliminary reports, against a revised schedule goal of 7,434.

▶ Ryan Aeronautical's proposed airline would initiate cargo feeder service with Stinson 10-C Reliants, using pickup gear. For passengers, it wants a twin-engine liner for 16 to 20 persons, capable of landing and coming to a stop in 1,000 ft., taking off in 1,500 ft., and clearing a 50-ft. obstacle on one engine.

▶ Here's why major airlines like American seek certificates to serve Palm Springs, 109 miles east of Los Angeles: in the last six months of the 1943-44 winter season 51 of the resort's hotels and dude ranches took in \$454,143 a month with hotel rates ranging from \$1.50 to \$60 a day for 2,565 winter guests.

▶ Stinson's contract for AAF L-5B Grasshoppers, originally planned to go into 1946, has been accelerated for completion in mid-1945.

▶ Waco last week completed its CG-4A glider contracts after turning out more than 1,000 ships. Only other companies which have been delivering unpowered troop carriers in quantity recently are Ford, G. & A., General, Northwestern, and Robertson.

▶ Engineering & Research Corp. is readying a four-place prototype personal plane. . . Solar Aircraft Co., pioneer exhaust manifold maker, participates in General Electric Co. jet propulsion engine contracts, the initial order representing major parts for the Bell Airacomet power plant.

▶ Current activities of Air Cargo, Inc., are expected to be terminated about the first of the year but the name will be kept alive for possible future use.

▶ British Overseas Airways Corp., Maritime Central Airways, Ltd., and KLM (Royal Dutch Airlines) have filed applications for associate membership in the Air Transport Association.

▶ Plans by State Department to ask the airlines and aircraft manufacturers to prepare displays for visiting delegates to the Chicago international aviation convention were abandoned before the meeting opened. It had also been proposed to the Aeronautical Chamber of Commerce that tours to aircraft factories be arranged for delegates but this project, it was feared, would be interpreted by other countries, especially Britain, as an unfair trade promotion practice.

▶ Petition to incorporate Bermuda Airways, Ltd., has been filed in the Bermuda House of Assembly by three Bermudians, J. E. P. Vesey, M. A. Gibbons, and A. J. Gorham, and a Canadian, Edward Goodeve. Proposed route would serve Montreal-Ottawa-New York-Bermuda.

▶ The airlines, after study of a report prepared on the subject by a special committee, are deferring establishment of a corporation which would consolidate terminal operations at airports, but officials generally consider such an enterprise as the proposed Airlines Service Corp. as necessary after the war.

▶ Delivery of four-engined transports in September declined to two types, the Douglas C-54, and a few Coronados. No Constellations or C-87's were turned out.

Meet

CAPT. VIRGIL TURNBULL

Two-million-mile veteran Braniff pilot Capt. Virgil Turnbull stands for the kind of flying that has won for Braniff the National Safety Award for four successive years. Born in McClain Co., Okla., Turnbull began flying in 1922. After several years' "barnstorming," he became a transport pilot in 1929; joined Braniff in 1936.



Capt. Turnbull is "briefed" for Link Trainer refresher course problem by Chief Pilot R. V. Carleton and Director of Instrument Flying Claude Seaton.



Turnbull gets ready to "take off" in the Link. His problem is to approach X airport on instruments, guided by radio signals.



Mrs. Betty Nance, Braniff Link Instructor, gives Capt. Turnbull the weather and other conditions of the flight through the interphone.



Capt. Turnbull demonstrates his skill at instrument flying by making a perfect approach to X airport. Another happy landing in the Link.

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World Air Accord as Instrument For Peace Stressed at Chicago

Lines begin to form early in support of U. S. or British programs; need for immediate opening of international routes on defeat of Germany and Japan emphasized in Roosevelt message.

By MERLIN MICKEL

Prime differences of opinion on ways and means for establishment of world air routes immediately after defeat of Germany and Japan began to develop early at the International Civil Aviation Conference in Chicago after the opening, which was marked by unanimous expressions of delegates that the air must be transformed from an instrument of aggression into a predominant force for world peace.

A message from President Roosevelt, read to the conference by Adolf Berle, Jr., Assistant Secretary of State and head of the United States delegation, urged the conference not to dally with the thought of creating great blocks of closed air, thereby tracing in the sky the conditions of possible future wars.

Immediate Start Favored—Viewpoint of the United States is that international operations should start immediately after cessation of hostilities, a stand emphasized by Mr. Roosevelt's statement that he did not believe the world can afford to wait several years for its air communications. The British, on the other hand, favor international authority over routes and the Australians and New Zealanders go even further in their proposal for an international air company in which all nations would participate and which would control all international flying.

It is not overlooked here that the United States is the only nation prepared for immediate operations. Some read into Mr. Roosevelt's statement an intimation that the United States will supply necessary planes for all when the time comes for operation. It is conceded that it would be difficult for other countries to fly

international routes for some time to come without American equipment.

Other Nations' Stand—Other United Nations and neutral countries represented at the conference assumed an initial role as on-lookers, some by choice, others not. Some knew definitely what they wanted and cast their lot with either America or Britain. Others adopted a wait-and-see attitude, stating privately that they had not been previously consulted on the international aspects of post-war commercial flying and wanted to wait until all the evidence was in.

Berle stressed the need for opening the skies to peaceful flight so that "the healing processes of peace can begin their work as rapidly as the interruptions resulting from aggressive war can be cleared away."

Similar hopes were expressed by delegates who responded to the American speeches of welcome. American delegates, however, led the conference into no false illusions on its conclusions as to how the air can be made an instrument of peace.

Peace Objects Stressed—Mr. Roosevelt, in his message, admonished the conference not to endanger the peace settlements, of which the results reached in Chicago will be an important one, "by petty considerations or . . . by groundless fears . . . let us work together so that the air may be used by humanity to serve humanity."

As the conference opened, three countries invited, in addition to Russia, were absent—El Salvador, Guatemala and Saudi Arabia. Russia, however, was assured of first hand reports by the presence of two top-flight correspondents from



Adolf Berle, Jr.

Tass, official Soviet news agency. The initial flurry resulting from Russia's last minute withdrawal had subsided by the time the conference got under way, with many of the delegates reaching the conclusion that Russia simply was not interested in international aviation for the moment, being content to develop domestic aviation within the Soviet Union.

Civil Aeronautics Board, Civil Aeronautics Administration and State Department provided a secretariat numbering about 175 to direct the conference, staff the committees and serve the more than 700 persons and heavy press attendance connected with the conference.

H. P. Nelson to Head WPB Air Division

Substantial progress reported in formation of new aircraft industry unit.

Plans for creation of the aircraft industry division within the War Production Board are progressing and chief of the set-up will be Henry P. Nelson, until recently materials coordinator with the National Aircraft War Production Council.

Nelson's selection would be acceptable to both the East and West Coast Council organizations, since he was connected with the National Council for more than a year. Now

engaged on a special project for a private firm, it is not expected that he can take over for at least a month.

► **Int'l. Harvester Official**—He first entered the aircraft production picture when he was given a 60-day leave of absence from the International Harvester Co., where he was manager of production, to assist the War Production Board. From there he went to Los Angeles for the AAF and there joined the Aircraft War Production Council, West Coast, before being assigned to the Washington headquarters of the Council. He left the Council about a month ago.

Meanwhile, the reactivated aircraft production board held its first meeting with WPB Chairman J. A. Krug, as chairman, replacing Charles E. Wilson who left the government to return to General Electric. Other members are Maj. Gen. O. P. Echols, Rear Admiral

Lawrence Richardson, T. P. Wright, Civil Aeronautics Administrator, who sits on the board as former director of the Aircraft Resources Control Office; and Myron Tracy, present acting director of ARCO. Tracy will be a member and recorder of APB.

It was decided that the APB would meet twice monthly instead of weekly as before.

Heavy Turnout Seen At Okla. Air Clinic

Attendance at aviation conference Nov. 15-18 expected to exceed last year's 600 by sizable margin.

Attendance at the Second National Aviation Clinic at Oklahoma City, Nov. 15 to 18 inclusive, is expected to exceed considerably the 600 mark recorded at the first national clinic a year ago, judging from heavy advance registrations, according to Stanley O. Draper, executive committee chairman.

General sessions will consider themes of Aviation and Government, Role of the Personal Plane in America of Tomorrow, Airports and Air Traffic Control, Travel and Trade by Air, and Training and Education in the Sciences and Arts of Air. Top-flight leaders in many phases of aviation will be speakers and discussion leaders on these subjects.

► **Debate on Regulation**—Ninety-eight voting delegates, seven each from 14 classifications within the industry, including airplane manufacturers, airlines, airline applicants, airport executives, allied aviation interests (insurance, fuel, etc.), accessories, aviation education, aviation press, schools and fixed base operators, engine manufacturers, municipal officials, private flyers and aircraft owners, state aviation officials, and public and civic interests not otherwise classified, will vote on the official final actions of the clinic.

Opening session will include a debate on state vs. federal aviation regulation, with Maj. Sheldon Steers, director of the Michigan board of aeronautics, and Dr. John Frederick, professor of transportation, University of Texas, as the speakers, and an address on aviation taxation by Oswald Ryan, CAB member. Thursday speakers will include John E. P. Morgan, manager of the Personal Aircraft Council, discussing personal plane trends and potentials, and Administrator T. P. Wright of CAA,

who will discuss Airports and Traffic Control.

► **Pogue to Speak**—L. Welch Pogue, CAB chairman, will speak on Post-war Air Passenger Potentials and Halsey Bazley, president of All American Aviation, Inc., will discuss feeder operations, at Friday sessions. Saturday morning session will be devoted to aviation education with Casey Jones, New York, discussing aviation trade schools, and resolutions and findings of the clinic will conclude the four-day meeting.

Other talks will include a discussion of surplus property disposal by Lieut. Col. William Harding of the Surplus War Property Administration, and a talk on Air Transport Command operations by Maj. Gen. Harold George, ATC commanding general.

Oklahoma's Gov. Robert Kerr and William Enyart, president of National Aeronautic Association, will be among presiding officers at clinic sessions.

► **Held In Capitol**—In addition to voting delegates, a much larger attendance of observers and associate delegates is anticipated. Sessions will be held in the house of representatives chamber of the Oklahoma state capitol. The program includes one public session and a number of entertainment features.

Preliminary to the Clinic, the National Association of State Aviation Officials will hold its annual meeting at Oklahoma City Nov. 13 and 14.

Clinic committee chairmen include:

Program, O. M. Mosier, vice-president, American Airlines, New York; Public Relations, Harry A. Bruno, New York; Credentials, Col. Roscoe Turner, Indianapolis; Local Arrangements, Glenn C. Kiley, president, Oklahoma City Chamber of Commerce, and Finance, Fred Jones, Oklahoma City.

CAP Wings to Meet

Representatives of 30 or more state CAP wings are expected to attend the fourth annual war conference of the Oklahoma Civil Air Patrol at Oklahoma City, Nov. 15, in conjunction with the National Aviation Clinic. Col. Earle Johnson, national CAP commander will be principal speaker, and the program will deal with CAP recruiting of flying cadets and WACS for the armed services. Lieut. Col. Moss Patterson, Oklahoma wing commander, is in charge of the conference.

New Army-Navy Directive Favors Negotiating Terminated Contracts

Recommended procedure follows that supported by aircraft manufacturing industry in contrast to detailed formula.

By SCOTT HERSHEY

Contention of the aircraft manufacturing industry generally that terminated contracts should be settled largely by negotiation rather than by detailed formula is supported in a new Joint Army-Navy Termination Regulation.

Negotiation is termed the main-spring of settlement in a joint statement by the Secretary of the Navy and the Under Secretary of War, commenting on the new regulation which, in a large measure, provides guides, recommendations, and mechanical aids designed for speedy and equitable settlement.

► **Covers Fixed Price Settlements**—The Regulation covers all aspects of fixed price contract settlements and agreement between the two branches on a single set of rules and is expected to simplify and expedite the whole procedure of contract settlement and property disposition. The Joint Termination Regulation supersedes the War Department's Procurement Regulation 15 and replaces the Navy directives on contract termination.

The new Regulation seeks to provide uniform and workable tools for carrying out the three-fold purpose of the Contract Settlement Act of 1944; to settle termination claims fairly and quickly; to clear termination inventory from war plants promptly, and to provide adequate interim financing.

A joint statement by the Secretary of the Navy and the Under Secretary of War noted that the regulation, like the act, recognizes that prompt settlement of termination claims "can be accomplished only by fair and businesslike negotiation. Negotiation is the main-spring of settlement. This must be kept in mind constantly in applying the detailed provisions of the regulation."

► **Follows Negotiation Policy**—This statement is in line with the thought and urgings of many aircraft industry executives who have recommended negotiation rather than formula settlements, but who have found, in some cases, that termination officers have stuck rigidly to formula. Industry reaction to this viewpoint of the Sec-

retary and the Under Secretary was favorable, although it has been pointed out before in industry circles that, while top-side in the services was sympathetic to negotiation, officers down the line were inclined to stay within detailed, time-consuming formulas.

The new regulation includes new uniform settlement proposals applicable for all procurement agencies together with covering cost accounting instructions that constitute a new joint accounting manual. These forms have been simplified, now making it possible to file practically any type of fixed price settlement proposal on one standard form.

► **Consolidated Setups**—The consolidated termination program setup appears to provide for facilitating contract settlements through a plan for assignment of selected contractors to particular services of the Army or officers of the Navy, rather than duplicating effort by having two or more procurement officers involved. The feature of this consolidated termination program is the reliance by one service on the accounting reports and property disposal decisions of another service.

Output by Types

Detailed figures on aircraft output by type from July 1, 1940, to Sept. 30, 1944, have just been released by the War Production Board. Total unit production during the period was 232,403.

The figures, while giving no airframe weight output, emphasize this indirectly since bomber production topped all other categories, closely followed by fighters, with trainer production, not tapering off to a small percentage of the total, third.

The figures follow:

Bombers	74,953
Fighters	70,627
Transports	17,592
Naval Reconnaissances	2,345
Trainers	54,642
Communications	10,785
Special purposes	1,459
Total	232,403



Ken Ellington

Ellington Heads AMC in New York

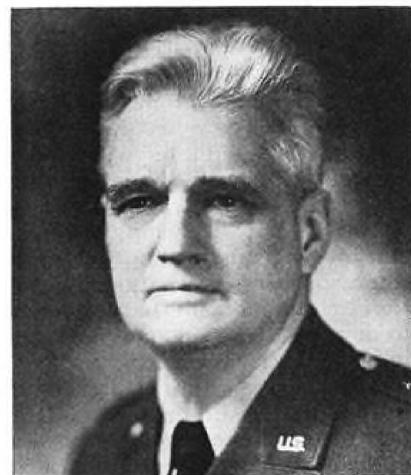
The New York office of the Aircraft Manufacturers Council of the Aeronautical Chamber of Commerce has been activated with the appointment of Ken Ellington as manager.

Ellington, widely-known in the aviation industry, has been Secretary of the Aircraft War Production Council, East Coast and for the past three months has served as consultant to Hill and Knowlton, public relations counsel for the Aeronautical Chamber. As Council secretary, Ellington coordinated the work of the War Production Council's committees on manpower problems, including industrial relations, labor utilization, plant defense, public relations and employee morale incentives.

► **Directed Radio Relations**—Before joining the Aircraft War Production Council, Ellington was director of radio relations for the Aeronautical Chamber and was responsible for aircraft industry participation in and recognition on many radio programs.

Before his Chamber affiliation, Ellington spent 10 years as new and special events director and production supervisor for mid-western radio station and Columbia Broadcasting System. He has been associated with many aviation activities throughout the country both before and after his direct entry into the industry.

As New York manager for the Aircraft Manufacturers Council of the Chamber, he will coordinate regional activities of eastern aircraft manufacturing companies and serve as liaison with Washington headquarters of the Chamber.



Maj. Gen. W. R. Weaver

Gen. Weaver Dead

Maj. Gen. Walter Reed Weaver, 59, former acting chief of the Army Air Corps and head of the Technical Training Command, is dead after a long illness.

He became consultant to Aviation Corp. after his retirement from the Army and was associated with that company when he became ill early in August. Shortly after Pearl Harbor, he was assigned to the Training Command and retained it until the command was inactivated July 7, 1943.

► **Associate of Mitchell**—A close associate of the late Gen. William Mitchell in the expansion of the air arm of the Army, General Weaver held commands in training, staff and technical posts during his 36 years in the Army.

Clayton Authorizes Salvaging, Scrapping of Surplus Warcraft

New order of outgoing administrator of SWPA expected to result in heavy declarations of surplus by Army and Navy in move to clear fields of obsolete and damaged combat planes.

By WILLIAM G. KEY

W. L. Clayton, outgoing administrator of the Surplus War Property Administration, last week authorized the salvaging and scrapping of surplus Army and Navy combat aircraft on recommendation of Lieut. Col. William B. Harding, director of the Aviation Division of SWPA.

The action clears the way for a heavy new declaration of surplus by the Army and Navy and enables the services to clear their fields of obsolete and damaged planes. The declarations are expected as soon as machinery is set up to handle the large quantities expected.

► **Types to Be Shifted**—Among the types that probably will be shifted into the surplus category for salvaging are quantities of Bell P-39 *Airacobras*, the Curtiss P-40 series, early clip-wing Martin B-26 *Marauders*, Consolidated B-24 *Liberators*, and Boeing B-17 *Flying Fortresses*.

Some of each of this type already have been declared surplus and issuance of the new authorization permits declarations of many more now at Army fields. It also is anticipated that the order will lead to more Navy surplus declarations, until now chiefly restricted to trainer types such as the 500 N3N3's being offered for bids by Defense Plant Corp.

► **Overseas Aircraft**—Planes overseas will be salvaged and scrapped by the services and the salvage not usable by the services, together with the scrap, turned over to the Foreign Economic Administration for storage or disposal. Informed sources expect the bulk of the material to be stored until decision is made on its return to this country for stockpiling or disposal to friendly nations abroad.

Planes in this country will be moved to storage fields in the vicinity of salvage depots to be operated by the Metals Reserve Corp., Reconstruction Finance Corp. subsidiary. Usable parts will be removed and plane carcasses then stored until machinery and labor are available for processing as

scrap. If a reasonable market exists, the scrap will be sold through normal channels. If no market exists, then the material will be stockpiled.

► **Scrap Stockpile**—Although the new surplus law probably will have to be interpreted and clarified by action of the Surplus Property Board when it is appointed, it is believed that its provisions make it possible for the scrap metal to be held as part of a national stockpile.

Storage in most instances will be in the open, probably in remote areas with a dry climate, authorities being of the opinion that deterioration losses will be lower than the cost of storage facilities.

How much of the material from the combat planes will be usable in other fields still remains undetermined. Studies are now under way to determine possible uses, and reports of private scientific groups making the studies will be followed in the ultimate disposition of the material.

AVIATION CALENDAR

- Nov. 9-10—North Dakota Airport Planning Program, Bismarck.
- Nov. 9-10—Fall Meeting, Institute of Aeronautical Sciences, Dayton, O.
- Nov. 13-14—National Association of State Aviation Officials, Annual Meeting, Oklahoma City.
- Nov. 15-18—National Clinic of Domestic Aviation Planning, Oklahoma City.
- Nov. 16-17. SAE Air Transport Engineering Meeting, Hotel Continental, Kansas City, Mo.
- Nov. 27-28—Executive Board Meeting, National Aircraft Standards Committee, Hotel Lexington, N. Y.
- Nov. 29-30—National Meeting, National Aircraft Standards Committee, Hotel Lexington, N. Y.
- Nov. 30-Dec. 1—American Marketing Association, Edgewater Beach Hotel, Chicago, Ill.
- Dec. 4-5—SAE National Air Cargo Meeting, Chicago.
- Dec. 5-7—Second Annual Meeting, Aviation Distributors and Manufacturers Association, Jefferson Hotel, St. Louis, Mo.
- Dec. 6-7—National Aviation Trades Association, Annual Convention, Jefferson Hotel, St. Louis, Mo.
- Dec. 11—Joint meeting, Industrial Conservation, Aviation and War Production Divisions, American Society of Mechanical Engineers, 7:30 p.m., Engineering Societies' Building, 29 West 39th Street, New York.
- Dec. 13—Canadian Aircraft Traffic Managers Meeting, Montreal.
- Dec. 17—Wright Brothers lecture, Institute of Aeronautical Sciences, Washington.
- Jan. 8-12—SAE Annual Meeting and engineering display, Bock-Cadillac Hotel, Detroit.
- Jan. 30-Feb. 1—18th Annual Meeting, Institute of Aeronautical Sciences, New York.

Most of the combat type planes to be declared surplus and handled under the new authorization are war-damaged aircraft. Some have been replaced by later models and no longer have any military value. ► **Disposal Asked**—Many of the damaged planes are still in foreign areas and the military services have been pressing for authorization to dispose of the planes because they hamper military operations.

Some of the supply in this country will be maintained to meet anticipated needs of technical schools and for experimental and non-aviation uses, and surplus officials are anxious to see that as much as possible of the material is transferred for these purposes as an aid to the future development of aviation.

Grumman Gets OK On Civilian Planes

Company, first to be permitted to produce non-military aircraft, gets WPB permit to build 25 *Widgeons*.

Grumman is the first aircraft company to be given a go-ahead signal for production of civilian planes and will build up to 25 Grumman G44 amphibians. Approval has been cleared through War Manpower Board and issued by War Production Board under WPB order L-48.

Although Engineering and Research Corp. presented 75 requests for *Ercope* planes from individuals or organizations justifying the need of planes in connection with the war, that application is being reviewed again because the plant in Riverdale, Md., is considered in a tight labor area. The *Ercope* application presented many requests in addition to the 75, these being the ones WPB designated as justified.

► **"Widgeon"**—The G44 Grumman is also known as the *Widgeon*, and is powered with two Ranger 440 hp engines. The Grumman Corp. presented its application with the proposal that the planes could be built through use of trainees, giving these new employees actual aircraft construction experience instead of having them learn on scrap metal. Some 175 trainees are available each month, Grumman estimated.

A third application now in process was submitted by a small company, Call Aircraft, in Afton, Wyo., now doing subcontract work.

OWM, WPB Drop Reconversion To Meet Serious Lag in Production

Virtual moratorium declared in industrial demobilization program after Byrnes' return from France where Army leaders convinced him of need for immediate intensification.

A rapid shift from reconversion planning to an intensification of war production has occurred within the past two weeks in both the Office of War Mobilization and Reconversion and the War Production Board.

This trend, which now parallels the views held all along by the Army and to a lesser extent the Navy, seems rooted in real concern over current lags in certain production categories and in reports of acute shortages of certain items of materiel now being received from the Western European front.

► **Byrnes Convinced**—When James F. Byrnes, director of the Office of War Mobilization and Reconversion, returned several weeks ago from France he showed that he had been convinced by Army leaders who had guided him on a front-line tour that there were definite shortages in some items and that supply lines had been drained by the invasion. Immediately on his return, Byrnes began preaching the necessity for continuing a high level of production, and suggested that, until the production picture was in better focus, the nation had better forget about reconversion.

This tone is also being taken at WPB, where virtually overnight the emphasis has switched from reconversion to intensification of the production program. Although Chairman J. A. Krug does not acknowledge that there has been a definite realignment of emphasis, it is noticeable in his press conference remarks as well as in his recent production statements. Where two months ago the WPB chairman was busy drafting reconversion plans for V-E Day, significantly very little is being said now in the agency about reconversion.

► **Western Front Stabilization**—Another factor bringing influence on this situation is the present stabilization of the Western front. Reconversion planning was stimulated greatly by the Patton breakthrough in France, and WPB and White House planners began an almost frenzied effort to get a recon-

version blueprint on paper before Germany collapsed. Now that it appears likely that the Allied armies will be fighting in Europe throughout the winter, the pressure for an immediate V-E Day plan has eased. This also tends to push reconversion planning into the background.

Production leaders are convinced, however, that the Army distress over production shortcomings is real at the moment and not another instance of what in the past they felt was the Army holding to its traditional position. This conviction has added sincerity to the recent pleas of both Krug and Byrnes for greater production and has dissipated, for the moment at least, their plans for early reconversion.

► **Moratorium on Reconversion**—The management-labor committee of the War Manpower Commission, also alarmed over what appears to be a severe production problem, is understood to have recommended to WMC Chairman Paul V. McNutt that the WPB "spot authorization" plan be suspended until war production problems have been eliminated. This recommendation, which in effect would place a moratorium on the partial reconversion now permitted, is now being discussed by McNutt and Krug and while nothing official has yet been said, it is believed they are seriously considering the plan.

Manpower is described as still the chief factor in limiting production, and some fear is felt that, despite the qualifications applying to the spot authorization procedure, some competition for manpower may develop between the producers of war goods and consumer goods.

Regardless of what action is taken on the spot plan, it is becoming more and more apparent that even the most reconversion-minded of the production leaders are coming to the belief that the recent reconversion ground-swell was premature and that the brakes should be applied until the military situation in Europe becomes a more predictable factor than it is now.

Brookings Study Asks Air Cooperation

Analysis issued on eve of world conference urges democratic nations to work together to get maximum use of air transportation.

Issued on the eve of the opening of the International Aviation Conference in Chicago, a Brookings Institution study of civil aviation warns that democratic nations must cooperate in obtaining maximum use of international air transportation. J. Parker Van Zandt, author of the study, cautions that restrictive measures toward international air transport are a fundamentally wrong and harmful approach.

Tracing the history of attempts to control and regulate international air transportation—and domestic aviation within Germany after the last war—Mr. Van Zandt draws the conclusion that aviation must be freed to build in the world and not tied down to fan commercial and national jealousies into another conflict.

► **British Position Outlined**—Mr. Van Zandt also outlines the international air travel position of various countries, notably the British Empire, as it existed prior to the war and is developing toward the post-war period.

He outlines the three basic proposals for international handling of air transportation. One group favors control of air transport as a means of restricting competition and assuring themselves a "fair quota" of international business. Included in this group are countries without a foothold in international operations, such as Canada, Australia, New Zealand and, to a certain extent, England. In the second group are those countries and companies within those countries anxious to preserve the status quo. The third group wants freedom of transit with preservation of the right to trade within countries.

► **U. S. Industry's Stand**—This last position, basically, is that of the majority of United States aviation interests, including the manufacturers. The second is, basically, that of Pan American Airways. The first is, again basically, that of the British Empire, which seeks to assure itself, through one or more systems, of a greater share of international air trade than it was able to obtain prior to the war.

Lifting of Bans Reveals A-26 As Fastest All-Purpose Bomber

Long-secret Douglas *Invader* expected to play dominant part in strafing operations prior to invasion of Japan.

By SCHOLER BANGS

Already in combat, the long-secret Douglas A-26 *Invader* now can be described as:

▶ Army Air Forces' fastest and latest all-purpose low-level strafing bomber.

▶ A plane that reasonably can be expected to play a dominant part in the onslaught stage of the invasion of Japan.

▶ An aircraft offering engineering concepts which may influence subsequent warplane designs and even the post-war planes of commerce.

▶ Still restricted are details of the *Invader* performance, armament, weight and dimensions.

No longer restricted:

▶ The *Invader's* square fuselage, offering production as well as aerodynamic advantages;

▶ The plane's Douglas-patent double-slotted flaps;

▶ Employment of speed-boosting jet exhausts developed by Douglas and proved in the company's A-20 series;

▶ Exceptionally clean contours showing Douglas' use of the latest

available research in the field of compressibility and shock wave effects.

In demonstration flight at Long Beach (the plane is under production at Douglas Long Beach and Tulsa plants) the A-26 gave good evidence of its aerodynamic cleanliness.

To lay observers there is evidence that the airplane's use of a flat-sided fuselage offers a means of baffling and reducing the venturi effect, and compressibility reactions, evident at high speeds in twin-engine aircraft employing harmoniously rounded fuselage and engine nacelles.

▶ **Flap Assembly**—Probably the most unique feature of the *Invader* is its flap assembly, the flaps in "down" position throwing into position a small airfoil, heavily cambered to follow the contour of the flap leading edge.

With the slot control of flap airflow, Douglas apparently has accomplished, in minimizing takeoff and landing speeds, what Northrop does on the P-61 *Black Widow*

by employment of wingtip spoilers to give aileron effect while the airplane's conventional ailerons are integrated with flaps to provide a full wing-length flap.

While the A-26 is exciting in flight, and undoubtedly will prove to be a potent weapon as a field strafing, invasion bomber, and even as a torpedo carrier, it will be viewed by many as among the last of this country's production of conventional design warplanes.

▶ **Begun In January, 1941**—Engineering of the airplane was under way as far back as January, 1941, and in May of that year a contract for three "X" units was issued, followed in October of that year by a 500-plane contract.

Excellent production characteristics are indicated in the present airplane, and attested by the comparatively short length of final assembly lines. Component parts are completed with a maximum degree of accessory installation before they reach the final line.

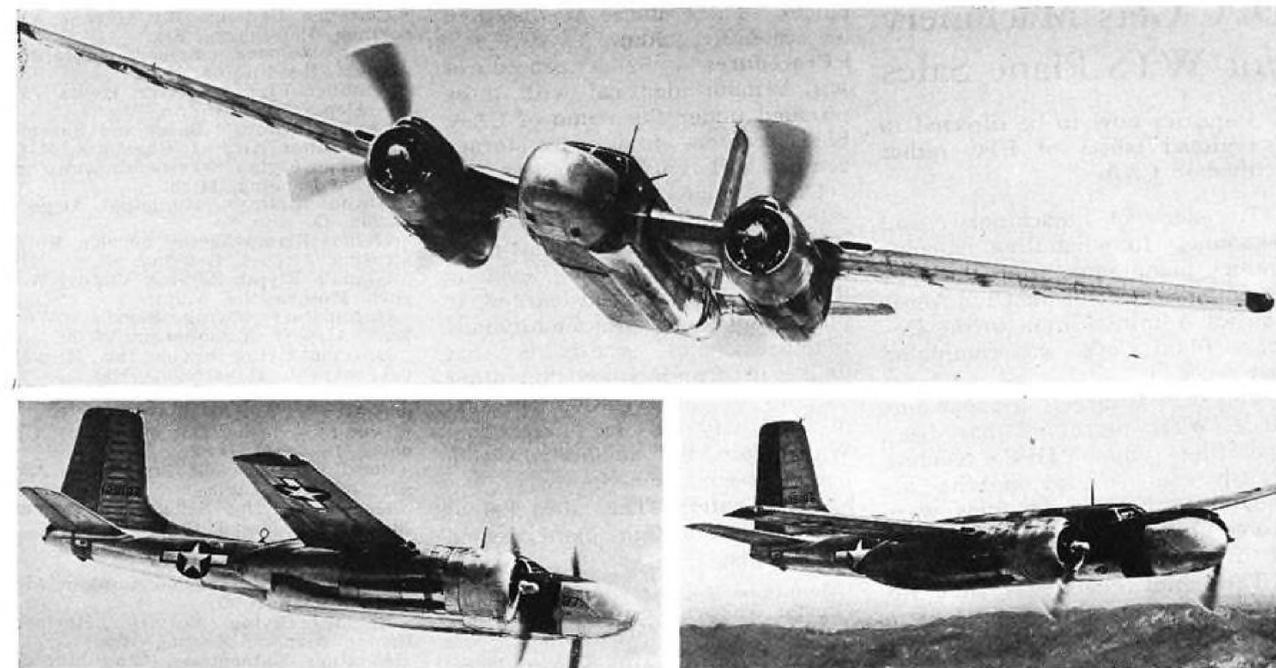
Serviceability characteristics appear to be exceptionally good for an airplane so compactly designed. Close attention has been given to the quick change of components, given evidence in the installation of the plane's twin 2,000 hp. Pratt & Whitney engines. Power plant changes can be made in about an hour and assemblies are interchangeable.

▶ **Sheet Metal Engine Mount**—An outstanding structural feature is Douglas' employment of a sheet metal engine mount rather than a welded tubular mount.

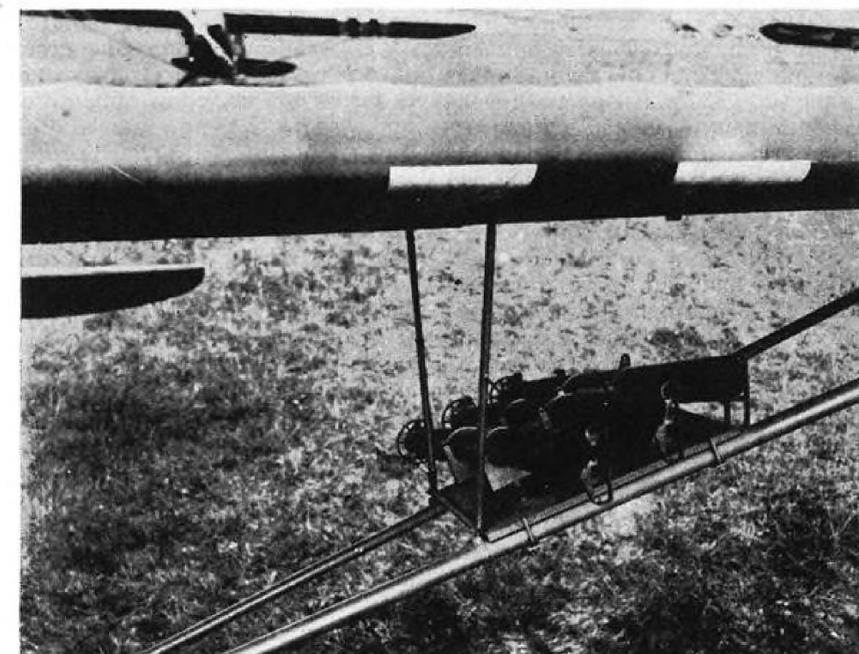
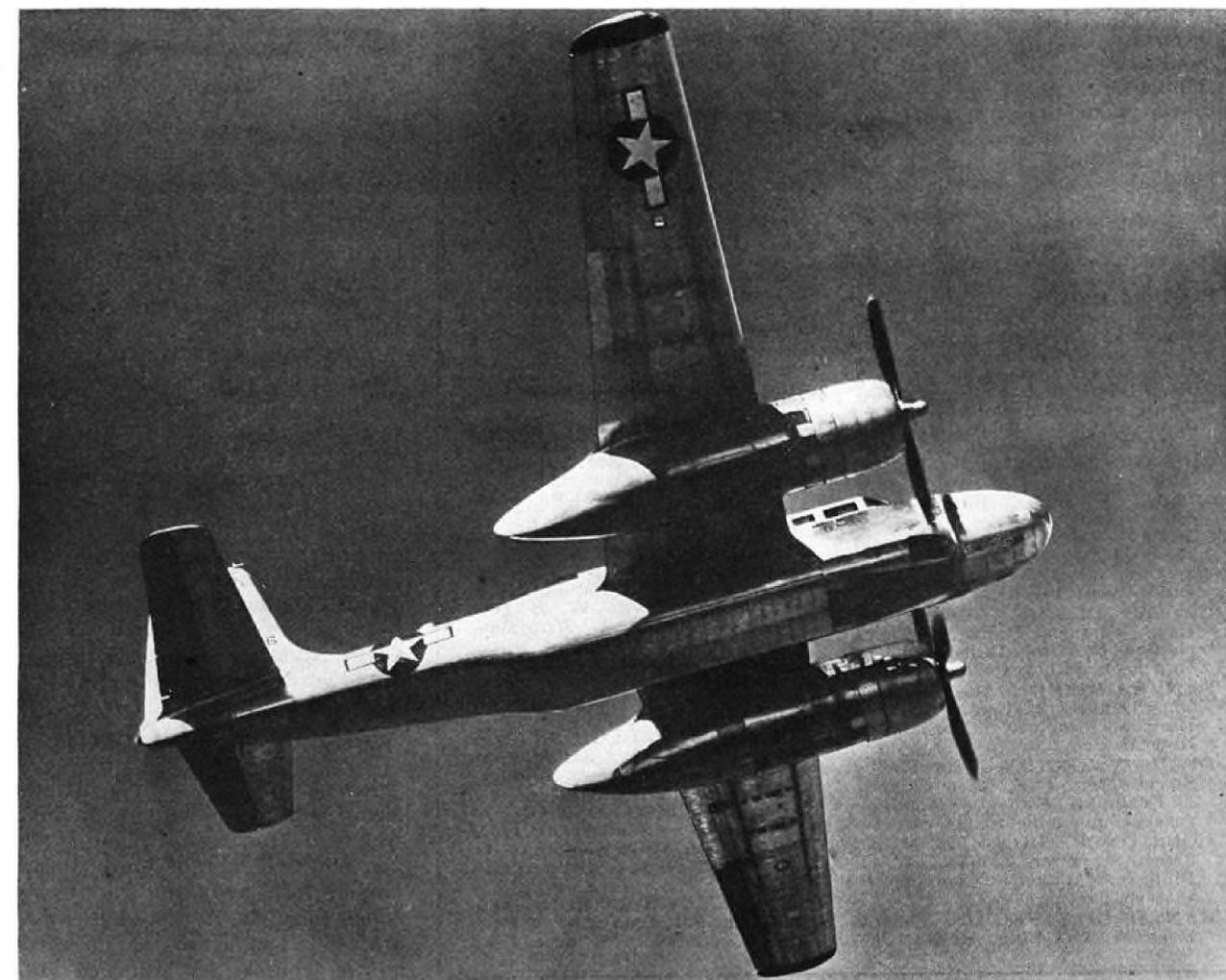
What Douglas originally sought to do, and was denied by military demands for early A-26 production, now is being carried out in replacement of original cockpit canopies with a new design which permits the pilot to see over the tops of the plane's long engine nacelles. In first production models, now being modified, vision over nacelles was restricted, preventing close formation flying.

RCAF India Mission

Royal Canadian Air Force mission to India has completed three months work under Air Vice-Marshal Lee F. Stevenson. The mission was sent to India to study tropical warfare and special equipment in use in the China-Burma-India theater with a view to bringing RCAF forces to operate in that theater. Some RCAF squadrons have been stationed in Ceylon since shortly before Pearl Harbor.



AAF's Latest and Fastest, the Douglas A-26 *Invader*



PIPER CUB CARRIES BAZOOKAS:

A Piper Cub artillery liaison plane now carries three bazookas attached to each wing strut. The projectiles can wreck tanks, trucks and armored cars, but are not so destructive as those carried on heavier ships.

DPC Gets Machinery For WTS Plane Sales

Inquiries now to be directed to regional offices of RFC rather than to CAA.

Transfer of machinery and personnel for handling surplus trainer plane sales from the War Training Service of the Civil Aeronautics Administration to the Defense Plant Corp. was completed last week.

The shift is largely a paper one, since WTS personnel has been operating under DPC pending transfer for several months, although invitations for bids were issued under the name of managers of the CAA regions.

The chief change is that inquiries now should be directed to regional offices of the Reconstruction Finance Corp., of which DPC is a subsidiary, rather than to CAA

offices. These offices are listed in an adjoining column.

► **Procedures** — Sales procedures will remain identical with those pursued under the name of CAA. Sales centers and sales-storage centers will remain the same.

One section of DPC handling sale of aircraft surplus—that handling engines and component parts—is being shifted to the Cleveland RFC office, it has been learned, to place it in closer contact with manufacturers and experts in that field. It is understood that other sections of the Aviation Division of DPC may be transferred from Washington, but no final decision has yet been reached.

► **Sales Centers**—The latest list of sales centers of light planes issued by DPC is:

Jennings Bros. Air Service, North Grafton Airport, North Grafton, Mass.
Albany Aircraft Co., Albany Airport, Albany, N. Y.
Bettis Airport, Pittsburgh, Pa.
J. D. Gillespie, Gillespie Airport, Nashville, Tenn.

Clarence Ludwig, Sky Harbor Airport, St. Petersburg, Fla.

Thor Solberg, Solberg-Hunterdon Airport, Readington, N. J.

Ashburn Flying Service, Hybla Valley Airport, Alexandria, Va.

Cannon Aircraft Sales and Service, Inc., Cannon Airport, Charlotte, N. C.
Hughes Flying Service, Capitol City Airport, Lansing, Mich.

Akron Airways, Municipal Airport, Akron, O.

Robert Slamp Flying Service, Ford-Lansing Airport, Lansing, Ill.

Lysdale Flying Service, Victory Airport, Minneapolis, Minn.

Cutter-Carr Flying Service, West Mesa Airport, Albuquerque, N. M.

Brayton Flying Service, Inc., Municipal Airport, Robertson, Miss.

Des Moines Flying Service, Municipal Airport, Des Moines, Iowa.

Dakota Aviation Co., Municipal Airport, Huron, S. D.

Southwest Airways, Sky Harbor Airport, Phoenix, Ariz.

Heasley Flying Service, Rosemead Airport, Rosemead, Calif.

Morrison Flying Service, Municipal Airport, Helena, Mont.

Cincinnati Air Service, Lunken Airport, Cincinnati, O.

Racine Flying Service, Horlick-Racine Airport, Racine, Wis.

Aviation Enterprises, Ltd., Municipal Airport, Houston, Tex.

Harte Flying Service, Municipal Airport, Wichita, Kan.

Central Aviation Corp., Municipal Airport, Omaha, Neb.

Great Plains Aviation Co., DuPont, Colo.

Thompson Flying Service, Municipal Airport No. 1, Salt Lake City, Utah.

Aviation Activities Co., Concord, Calif.

Hilsen Aero-Service, Calkins Airport, Spokane, Wash.

Three airports are being used both as sales and storage centers. These are: Hicks Field, near Fort Worth, Tex.; Cimarron Field, near Oklahoma City, Okla.; Bush Field, near Augusta, Ga., where the new Civil Aeronautics Administration flight test base is situated.

Storage depots are in operation at: Harris Field, Cape Girardeau, Mo.; McKellar Airport, Jackson, Tenn.; Gibbs Field, Fort Stockton, Tex.; Augustine Field, Madison, Miss.; Hat Box Field, Muskogee, Okla.; Thompson Robbins Field, West Helena, Ark.; Echeverria Field, Wickenburg, Ariz.; Ponca City Municipal Airport, Ponca City, Okla.; Embry Riddle Field, Union City, Tenn.; Cuero Municipal Field, Cuero, Tex.; Lamesa Field, Lamesa, Tex.; Victory Field, Vernon, Tex.; Gary Field, Blythe, Calif.; Ryan Field, Tucson, Ariz.; Woodward Field, Camden, S. C.

ATLANTA REGION — Healey Building, Atlanta 3, Ga., M. E. Everett, Manager. Georgia—Alabama—Tennessee—Florida.
BOSTON REGION—10 Post Office Square, Boston 9, Mass., John J. Hagerty, Manager. Maine—New Hampshire—Vermont—Massachusetts—Connecticut—Rhode Island.
CHARLOTTE REGION—109 West Third Street Charlotte 1, N. C., John A. Campbell, Jr., Manager. North Carolina—South Carolina.
CHICAGO REGION—208 S. LaSalle Street, Chicago 4, Ill., B. A. Mattingly, Manager. Illinois—Indiana—Iowa.
CLEVELAND REGION — Federal Reserve Bank Bldg., Cleveland 1, Ohio, J. A. Fraser, Manager. Ohio—West Virginia.
DALLAS REGION — Cotton Ex-L. B. Glidden, Manager. Texas change Building, Dallas 1, Tex., (northern and western parts).
DENVER REGION—Boston Building, Denver 2, Colo., Ross L. Hudson, Manager. Colorado — New Mexico.
DETROIT REGION — 607 Shelby Street, Detroit 26, Mich., Arthur J. Fushman, Manager. Michigan (except upper peninsula).
HOUSTON REGION—723 Main Street, Houston 2, Tex., W. I. Phillips, Manager. Texas (southeastern part).
KANSAS CITY REGION—Federal Reserve Bank Bldg., Kansas City

6, Mo., Albert L. Strong, Manager. Kansas—Oklahoma.

LOS ANGELES REGION—Pacific Mutual Building, Los Angeles 14, Calif., Hector C. Haight, Manager. Arizona—Southern Calif.

MINNEAPOLIS REGION — McKnight Building, Minneapolis 1, Minn., China R. Clarke, Manager. Minnesota — Wisconsin — North Dakota — South Dakota — Michigan (upper peninsula).

NEW ORLEANS REGION — 837 Gravier Street, New Orleans 12, La., George W. Robertson, Manager. Louisiana—Mississippi.

NEW YORK REGION—33 Liberty Street, New York 5, N. Y., Thomas J. Ahearn, Jr., Manager. New York—New Jersey.

OMAHA REGION—Woodmen of the World Bldg., Omaha 2, Nebr., Herbert S. Daniel, Manager. Wyoming—Nebraska.

PHILADELPHIA REGION — 1528 Walnut Street, Philadelphia 2, Pa., E. Raymond Scott, Manager. Pennsylvania—Delaware.

PORTLAND REGION—Pittcock Block, Portland 5, Oreg., William Kennedy, Manager. Washington — Idaho—Montana—Oregon.

RICHMOND REGION—Richmond Trust Bldg., 7th and Main Streets, Richmond 19, Va., W. B. Cloe, Manager. Maryland — Virginia — Washington, D. C.

ST. LOUIS REGION — 320 N. Fourth Street, St. Louis 2, Mo., B. Glenn Gullledge, Manager. Missouri—Kentucky—Arkansas.

SAN ANTONIO REGION—Alamo National Building, San Antonio 5, Tex., L. C. Andrews, Manager. Texas (southern part).

SAN FRANCISCO REGION—200 Bush Street, San Francisco 4, Calif., John S. McCullough, Jr., Manager. Nevada—Northern California.

SALT LAKE CITY REGION—Dooly Building, Salt Lake City 1, Utah, Gerald L. Leaver, Manager. Utah.

Offices for Sale of Surplus Planes

Following are the offices of the Reconstruction Finance Corp. in which the DPC Surplus War Property Administration will handle the sale of surplus planes. Inquiries relative to transport plane applications, surplus war industrial plants, machinery and other products also are to be handled by these district offices:

ATLANTA REGION — Healey Building, Atlanta 3, Ga., M. E. Everett, Manager. Georgia—Alabama—Tennessee—Florida.

BOSTON REGION—10 Post Office Square, Boston 9, Mass., John J. Hagerty, Manager. Maine—New Hampshire—Vermont—Massachusetts—Connecticut—Rhode Island.

CHARLOTTE REGION—109 West Third Street Charlotte 1, N. C., John A. Campbell, Jr., Manager. North Carolina—South Carolina.

CHICAGO REGION—208 S. LaSalle Street, Chicago 4, Ill., B. A. Mattingly, Manager. Illinois—Indiana—Iowa.

CLEVELAND REGION — Federal Reserve Bank Bldg., Cleveland 1, Ohio, J. A. Fraser, Manager. Ohio—West Virginia.

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HOUSTON REGION—723 Main Street, Houston 2, Tex., W. I. Phillips, Manager. Texas (southeastern part).

KANSAS CITY REGION—Federal Reserve Bank Bldg., Kansas City

erans of World War II. C. S. (Casey) Jones, head of the two schools, reports that already a number of discharged veterans are enrolled for training at government expense, and new advanced courses have been developed to supplement the veterans' Army and Navy training.

ATSC Takes Press On War Plant Tour

Stub-winged robot bombs, line production techniques for building delicate aircraft instruments, future peacetime possibilities for aerial camera uses and demonstration of aircraft engine fabrication, were shown to magazine and news writers, at four Long Island war plants, during a concentrated one-day tour arranged by the Air Technical Service Command.

At Republic Aviation Corp., Farmingdale, home of the Thunderbolt P-47 fighter, it was disclosed that a "cycle" system for crews of workers has reduced man-hours required to build one of the fighters from 22,927 to 6,290 while costs have dropped from \$68,750 per plane on the first order to a current \$45,600. Republic also is building the robot bomb airframes, to be powered by jet impulse engines built by Ford.

► **Visit Sperry Plant**—Precision foundry work and line assembly of delicate gyro instruments were shown to the writers in a tour of the Sperry Corp. Nassau plant. Since 1940, Sperry directional gyros and horizons have been supplied to 159,807 aircraft; while of all products supplied to the AAF in 1943, 74 percent were newly created since Pearl Harbor.

At Ranger Aircraft Engine division, Fairchild Engine and Airplane Corp., the touring writers observed production of 6- and 12-cylinder Ranger engines, superchargers and other parts for Rolls-Royce engines and compact Andover auxiliary powerplants for use on B-29 bombers.

► **Study Camera Production**—Design and fabrication difficulties involved in producing an aerial camera sturdy enough to take the punishment such a camera must take, and yet delicate enough to do the precision work required, were made clear to the writers at the Jamaica plant of Fairchild Camera and Instrument Corp.

Besides the cameras, of nine different designs, Fairchild also makes sextants, more than all

other suppliers to the AAF put together, radio direction finders, electric computing gunsights and other secret devices. While sales have increased about 25 times in dollar volume over the prewar period the number of units has increased 100 times.

Moore Heads CAA's Inspection Division

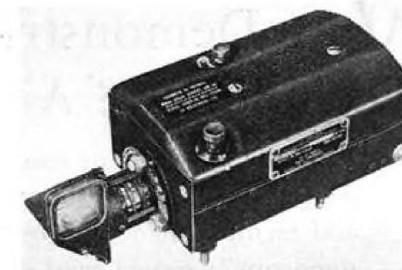
Maj. William S. Moore, who recently returned to the CAA after serving in charge of accident investigations for Flight Control Command, AAF, has been appointed chief of CAA General Inspection Division, Administrator T. P. Wright announces.

When Moore left CAA two years ago to go on active duty with the AAF he was chief of the CAA 7th Region general inspection branch. A native of Fort Worth, he learned to fly at Wilbur Wright Field, Dayton, in 1917. He holds one of the earliest commercial pilot licenses still active No. 268 and has logged more than 3,000 hours.

► **World War Veteran**—In the first World War he served in the 28th Pursuit Squadron, AEF, stationed at Issoudon, France. He held a captain's commission in the reserves after 1928.

He joined the general inspection staff of the Bureau of Aeronautics in 1929, and had been doing general inspection work since, until he returned to Army service two years ago.

Paul E. Young, acting chief of the division, will now serve as assistant to Moore.



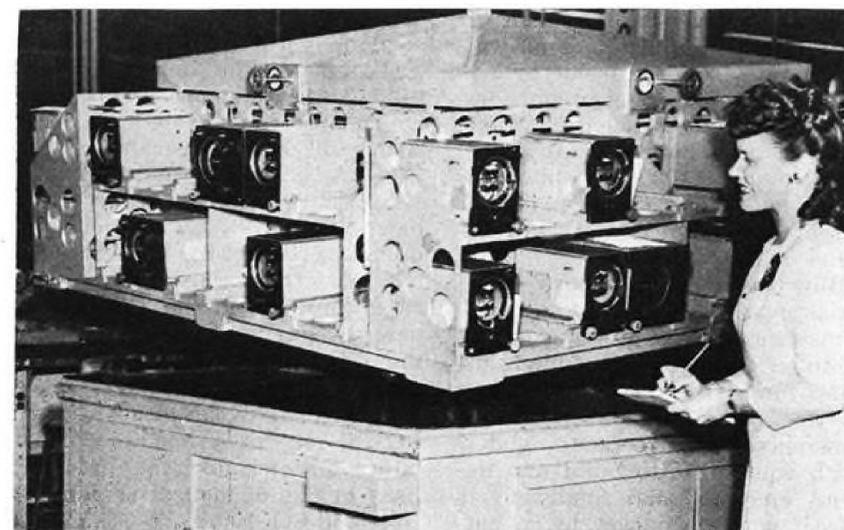
Fairchild Gun Camera: New model Fairchild N-6 Gun Camera, which makes movies recording firing of fighter plane guns, and is sighted along with the guns as they are fired, is shown here.

V-E Day Termination

Contract terminations exceeding 20 billion dollars are forecast for V-E Day by Robert H. Hinckley, director of contract settlement in a detailed report to Congress which shows this total represents at least one-third of the outstanding war production program and equals approximately all terminations to date.

Items valued at 21 billion dollars and involving 37,000 prime contracts have been canceled by the War and Navy Departments and the Maritime Commission. Aircraft contracts canceled from January of this year through July totaled 1,060 and had a combined value of \$5,273,000,000.

► **Manpower Affected**—Hinckley reported that the total cancellations have occurred while production was being brought to peak and maintained and consequently represented a manpower transfer.



Testing Sperry Instruments: Giant Scorsby machine at Sperry Gyroscope Co. Nassau plant tests flight instruments simulating flight motions of roll, pitch and yaw, for five-hour run, after instruments leave assembly line.

Army Demonstrates Equipment, Technique of Airborne Operations

Virtually all weapons used by ground forces, including bulldozers and heavy artillery, some modified to reduce weight and facilitate handling, expected to move by air in "blitz of tomorrow"; system may even be used against Germans and Japs if war lasts long enough.

By BLAINE STUBBLEFIELD

The next move, already begun, is to treat all ground forces as potentially air transportable forces. On that premise the Army demonstrated equipment and techniques of air-borne operations, at Washington National Airport last week.

Surface warfare at sea already has moved extensively into the air. Very soon, nearly all equipment and weapons used by the ground forces, some of it modified for lighter weight and easier handling, plus the troops that handle it, will be flown.

► **C-82 Only Beginning**—The Fairchild C-82 cargo carrier is only the beginning. This AVIATION NEWS correspondent, visiting Stout Field, Indiana, Troop Carrier Command headquarters just prior to and in connection with the exhibition, was told by top officials that bigger planes will be developed to set down heavy bulldozers, medium tanks, and big field guns—the regular equipment and manpower of whole armies, at points of attack hundreds of miles inside enemy territory.

They believe the Germans, if they hold out in a bitter-end war, will be hit from the inside by airborne forces of Army proportions. Like action is predicted in China, Netherlands Indies, and Japan. How many C-82's get into this war, and whether any similar larger equipment gets in, will depend on the duration.

► **Blitz Tactics of Tomorrow**—Surprise, war's most potent tactic, is a major advantage of flying armies. Without giving a hint of intention, they can strike distant objectives between dusk and dawn. Reconnaissance paratroopers, gliders with equipment to build and defend airstrips, and finally fly-in forces with the power to do battle: that's the one, two, three blitz of tomorrow.

And don't forget, said Brig. Gen. William D. Old, Troop Carrier commander, that in future,

the enemy can do the same thing. Not in this war, though. We took up glider and parachute operations where the Germans left off and have beaten them at their own game completely.

Four years of research and experimentation have gone into the stage of air-borne perfection demonstrated at the National Airport. The work has been done by AAF Troop Carrier Command, Army Ground Forces, and Army Service Forces, working in close cooperation, with special assistance from Ordnance and other branches.

► **Planes Used**—Major aircraft now used by TCC are the Douglas C-47, carrying 2,000 to 5,000 pounds of payload; Curtiss-Wright C-46, which has about double the capacity of the C-47; the Douglas C-54, 8,000 to 12,000 pounds, quarter-ton trucks and the 105 mm. howitzer being the biggest single pieces it can accommodate; the C-82, which is in the 50,000 pound gross weight class, and which can fly 90 percent of the equipment of the regular triangular infantry division—trucks, guns, tanks, bulldozers, tractors. Production of this airplane is just starting.

Gliders in the demonstration: the CG-4A standard workhorse which has participated in most Army air-borne operations; the CG-13A, enlarged version of the 4A, produced in far lesser numbers; the CG-15A, another improved version of the 4A, with better performance and improved crash protection; the CG-10A, a new design developed to explore the practicability of carrying large equipment, has the largest space and biggest payload of any glider; CG-16, an experimental model built to determine the practical limit in size of tactical usefulness. Only the CG-4 and the CG-13 are in volume production.

► **Pickup Demonstrated**—Among the action demonstrations was a "snatch up" of a CG-4, standing still on the ground, by a C-47 tow

plane, using the hook device for which credit is given to All American Aviation. Looking on earnestly from the sidelines was Mrs. Richard C. duPont, widow of the former president of the airmail pickup system, and civilian head of the Army's glider activities during the important development phase. Equipment and methods used in evacuating the wounded were demonstrated, and the rapid emergence of men, trucks, tanks, and guns from gliders and planes was shown.

Many problems must be worked out to improve air-borne tactics. First, the limiting factor, as of today, is the size of airplanes to carry the big equipment. That one will be handled as fast as possible by service engineers and by the industry.

Ryan Aeronautical Names Woodson V.P.

Former Bell executive to be general manager of company.

Omar L. Woodson, widely known production executive, has been named vice-president and general manager of Ryan Aeronautical Co.

In making the announcement, T. Claude Ryan, president, noted that his company has orders substantially in excess of \$60,000,000 on hand from the Navy for new Ryan-designed fighting planes (AVIATION NEWS, Oct. 30) and said the company was going into production of the most important airplane in Ryan's war program—a program which will require the plants' maximum capacity on schedules extending well into 1946.

► **Bell Aircraft Official**—Woodson for the past five years was vice-president of Bell Aircraft Corp. and from 1942 until his recent resignation was general manager of Bell's plant at Marietta, Ga., building Boeing B-29's.

Woodson, at 49, has a background of 27 years in aviation. In 1936 he became assistant chief engineer for Curtiss-Wright after serving as a pilot with the AEF in 1917. Later he was with Service Aviation Co. and during four years with the U. S. Air Mail Service he installed the first boundary and flood lighting used in night flying. In 1925 he founded Woodson Engineering Co. for design and manufacture of planes. He went with the old Northrop Division of Douglas in 1934 as project engineer.

PRIVATE FLYING

Competition of Oil Firms May Aid In Lightplane Facilities Expansion

Auto-airplane filling stations, providing service for both personal aircraft and cars, reported under study by at least five major companies.

By ALEXANDER MCSURELY

Sharp competition between major oil companies for the expanding fuel and oil market offered by the personal aircraft industry following the war, is expected to be an important factor in expanding facilities for the personal plane.

At present, most of the big operators are silent, waiting to see what their competitors are going to do, before plunging ahead with open announcement of their own programs. However, it is reported that at least five major companies have definitely charted their aviation development programs on a scale far beyond any pre-war promotional plans.

► **Filling Stations**—Trend of the thinking leans toward establishment of combination auto-airplane filling stations which can provide service for both personal aircraft and automobiles. Some companies have already shown drawings for such stations, which would be located on flight strips between highway and strip, or alongside airparks, in such a way that they can serve planes on the flight area side, and surface vehicles on the street side.

No indication has been given that any of the companies are planning to establish their own complete flight strips or airparks, although one of the companies might establish a model airpark and operate it as a laboratory test. The main trend is toward establishing service facilities or improving existing facilities at new airparks, flight stops and air harbors, and at larger fields too, as the opportunity presents itself.

Presumably cities with several landing facilities, may see several companies represented with combination stations, although it is not likely that any single landing will have competitive services.

► **Service Equipment**—Amount of service equipment to be provided

will vary from elementary hand-operated equipment, at little-traveled strips, up to elaborate power operated equipment at the busier stations. Small manpower-operated trucks, which can carry two drums of gasoline, a hand-pump and an oil container are being considered by one company as a very sensible beginning for fields where only a small volume of business is expected in the early days. The next step might be a small trailer tanker of the type used by the AAF to fuel its fighters at advanced bases. Such portable equipment easily can be replaced by larger capacity servicing facilities as the business grows.

One of the early guinea-pig

Mass Production

Mass production methods developed in wartime by aircraft accessory builders are expected to be put into use in making low-cost instruments and controls for personal planes, in the opinion of Ernest Breech, president of Bendix Aviation Corp., one of the largest instrument and accessories manufacturers. Where production of 50 instruments a month was big business before the war, in one Bendix plant production is now running at the rate of 75,000 instruments a month.

L. A. Hyland, executive engineer, believes instruments will be built into the post-war personal plane as an integral part, rather than merchandised as an added accessory. "Packaged" instrument sets, packaged controls and packaged landing gear including brakes, wheels, tires and struts in one package, will be supplied as complete sub-assemblies, to the manufacturer, Hyland believes, to reduce costs further.

combination service stations is expected to be started within a few months on a 54-acre T-shaped field just east of Greenfield, Ind., alongside U. S. Highway 40, through transcontinental highway. The field will have a frontage of 1,200 feet along the highway, and will have two runways, one of 2,850 feet, north-south, and a 2,000-foot runway east-west. Oil companies are reported already bidding for the lease to operate a combination station there.

► **Combination Station**—As one oil company representative expressed it, "A combination station will make it possible to provide service at many small airfields and strips, which would not, in the beginning provide enough business in themselves to pay for the servicemen and the facilities. The amount to be realized from many small airports even now, however, is certainly enough to make a very tidy addition to the revenue of any automobile service station, and enough to warrant establishment of the combination station."

New Certification Procedure Developed

Using a new three-place Piper model as a guinea pig for a new certification procedure, CAA aircraft engineers have completed the system, materially reducing the amount of technical data and time necessary for a type certificate. It is believed that the trial procedure will be put into use increasingly by CAA as a result of the successful experiment.

Main change was the stationing of a CAA engineer at the Piper plant at Lockhaven, Pa., during a good part of the testing, which speeded the settlement of technical questions, and the keeping of reports at the Piper plant until the file was completed, rather than sending them into a district CAA office or to Washington.

► **All Data Approved**—Two months after the first technical data were sent in, all had been approved except for certain parts of the fuselage analysis, which were approved 10 days later. A total of 420 pages of basic information, static test reports and stress calculations, and 54 drawings were submitted. By comparison, a similar model presented to the CAA required approximately five months to get approval, in 1939, when examination of all material was conducted in the Washington office, and 607

pages of analysis and 10 drawings were submitted.

The guinea-pig plane was powered with 125 hp. engine, equipped with slots and flaps, and with gross weight approximately 15 percent greater than that of the preceding model.

Air-Country Club Field Completed

Limited service already available to flyers on Miami project on Biscayne Bay.

Landing field of the elaborate Miami Aviation Country Club project on Biscayne Bay, has been completed and officially designated by the CAA, and limited service to flyers is available, while building developments on the proposed center await removal of wartime restrictions.

The field has two hard-surfaced runways, 75 x 2,500 feet each, with grass landing strips of 200 x 2,500 feet on each side of each runway. Plans call for a seaplane base, on Biscayne Bay at the east end of the east-west runway.

► **Hangar Clubhouse**—Principal building projected for the center, a large hangar-clubhouse, will provide a lounge, private club-room operations facilities and flight information, display rooms for aircraft manufacturers, and hangar facilities for visiting planes. A 22-unit apartment court, to accommodate non-resident members during visits to Miami is planned to adjoin the airport.

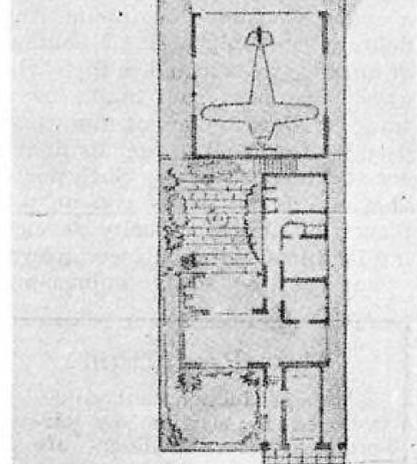
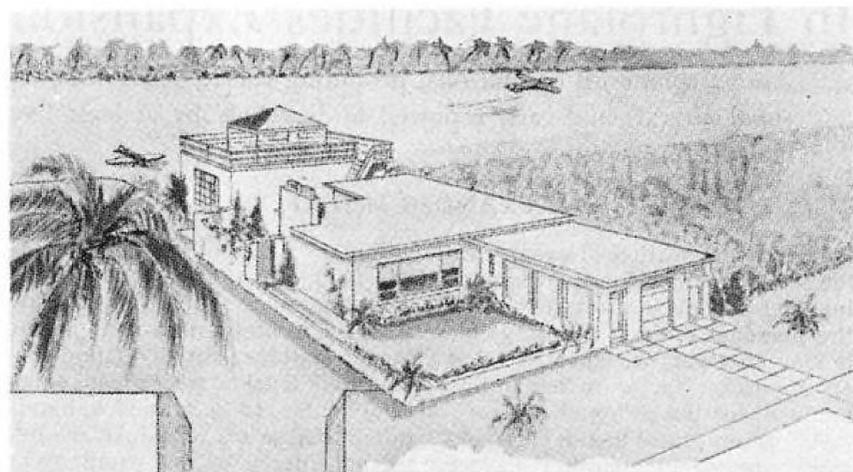
A permanent residential area has been reserved for club members who wish to build their homes near the center. Residents of the estates area will be able to land their planes on the flight area and taxi to their private hangars at their own homes. Some of the lots border the landing area, while others face the Bay and a coral rock canal, providing private boat or seaplane anchorage.

► **Other Facilities**—Additional T-hangars will be built to accommodate planes of members not living in the Center area. Other facilities projected include a restaurant designed so that diners will have full view of airport activities, and facilities for deep-sea fishing, and various other sports and recreational activities. The club will also undertake to make passport arrangements and handle other details for flights down into the

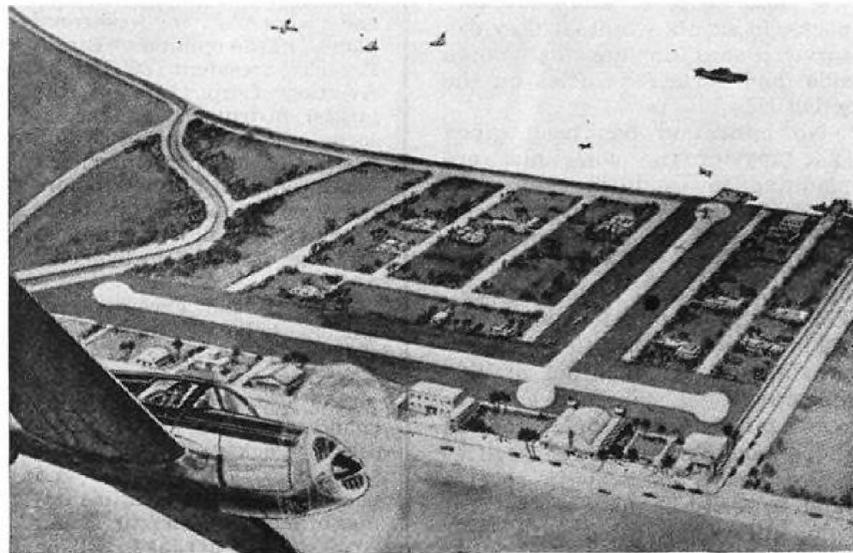
Caribbean area, and will provide transportation from the center to hotel or residence in the Miami area.

Projected as an exclusive aviation club for persons owning and flying their own planes, the Miami center is one of the first examples

of the post-war aviation clubs on a yacht club scale which may be expected to develop in various sections of the country, particularly in resort areas. Officers of the club are John F. Keefe, president, and Richard E. Flynn, vice-president.



Proposed Hangar-Home: Architect's conception of a typical private residence in proposed estates development at Miami Aviation Country Club is shown here. Private hangar near flight area, has sundeck on top, and adjoins flyer's home.



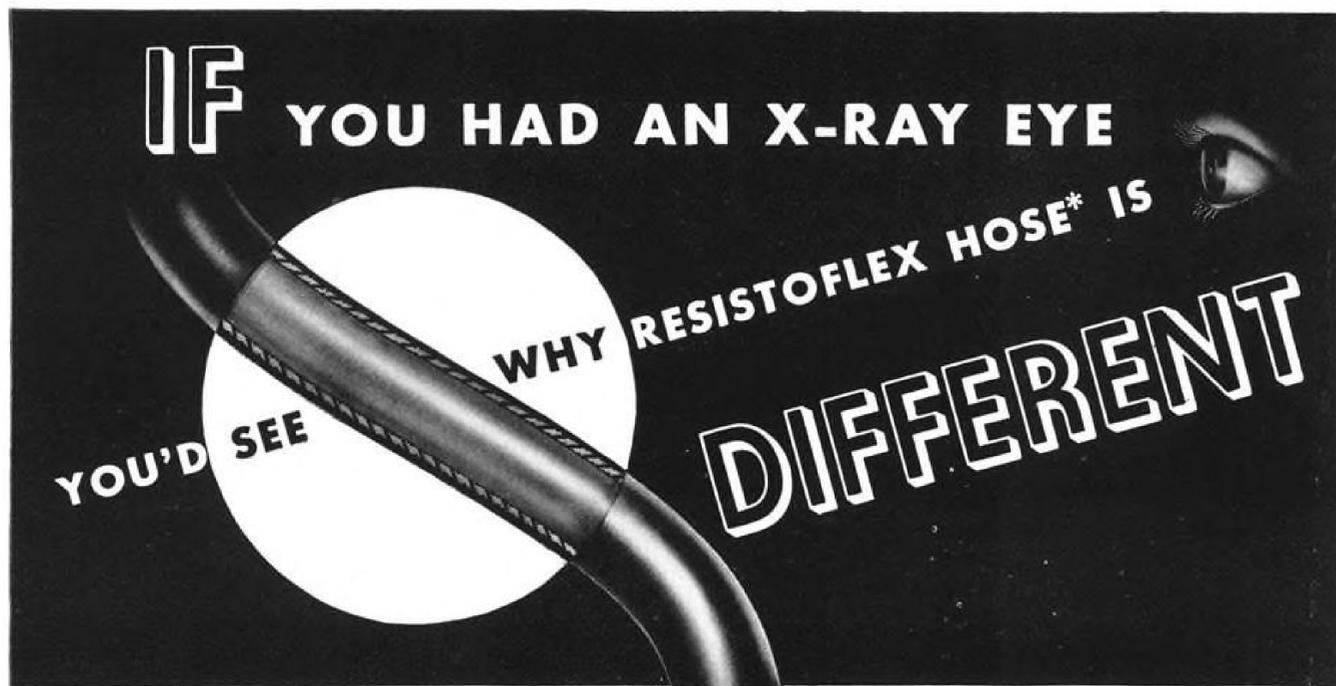
Airview of Proposed Miami Development: While runways have been completed and the Miami Aviation Country club is now reported ready for limited service to flyers, building developments shown in this architect's drawing await removal of wartime restrictions.

We dip our wings to the Airlines!

THE word "impossible" is not in the airlines' vocabulary—not when they have carried, with only one-half of their fleet, more than half again the number of passengers and four times the cargo carried in 1940—not when they have hauled everything from troops to K-rations, from rockets to V-mail, from helicopters to gasoline trucks. They deliver the goods! For these and a host of unsung war accomplishments we dip our wings to the airlines of our country! Curtiss-Wright Corporation, Airplane Division, Buffalo, New York.

**Curtiss
Commando**

Low Bidder for Tomorrow's Air Commerce



No hose can be more efficient than its tube. And if you were able to see through a Resistoflex hose that had been used for years, you would see the compar tube, unchanged since its original installation.

For compar is an elastomer that varies in formulation according to the job it is to do. Compar is completely immune to the corrosive and erosive attacks of gasoline, fuel oils, organic solvents, hydraulic fluids and lubricants. That is why compar cannot shrink in diameter... neither can it swell, rot, nor slough-off.

You would also see a tough reinforcement of selected fabric or fine wire spun around the compar tube. Thus, pressure resistance is built up without loss of flexibility.

And for even greater strength, a rugged outer cover of special formulation protects the hose assembly from external abrasion and rough handling as well as the corrosive effects of oil and moisture.

Yes, if you had an X-ray eye you would see compar, reinforcement and outer cover; and you would readily understand why Resistoflex hose has never failed due to vibration or flex under normal operating temperatures.

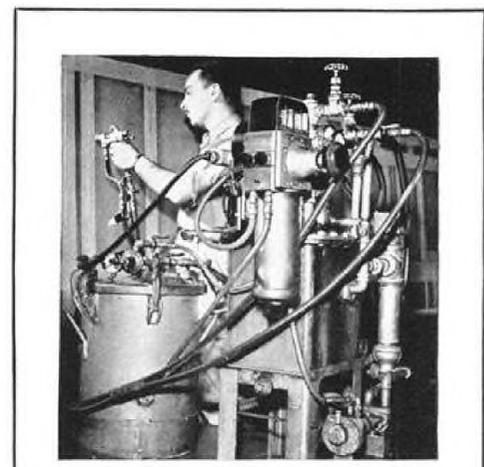
A staff of engineers, maintained by the Resistoflex Corporation, is prepared and willing to help you with your flexible hose problems. Laboratory technicians will be glad to work out special purpose formulations of compar for you, should your problem require them. A short letter will bring you the benefits of their experience without obligation.

***THE TUBE IS THE HEART OF THE HOSE—INSIST UPON IT BEING COMPAR**



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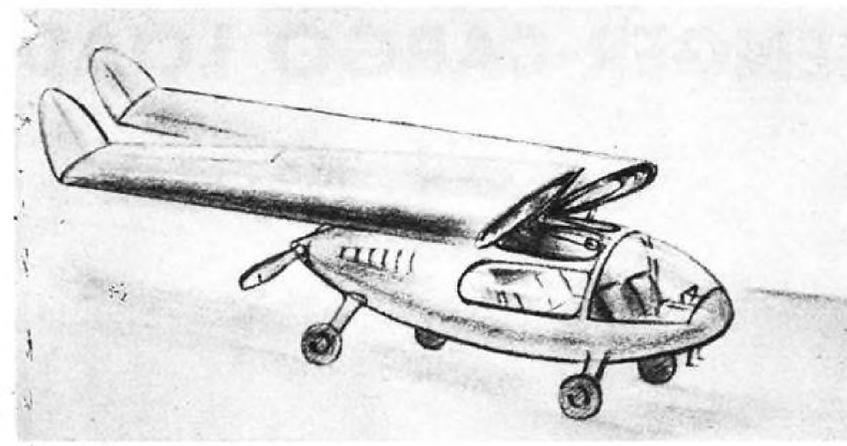


QUALITY APPRECIATES QUALITY

American Export Airlines' 32-ton "Flying Aces" make the world's longest regularly scheduled trans-Atlantic commercial airline flights. Obviously, maintenance is an important factor.

Resistoflex hose is a vital part of their hot dope equipment shown above. The compar tube is completely immune to the corrosive action of hot dope passing through it. It's a guarantee of long life, speed and dependability.

And in any other hose application requiring immunity to oils, gasolines and organic solvents, Resistoflex lines can be depended upon.



FOLDING WINGS FEATURE PLANCK DESIGN:

Charles Planck, CAA current information section chief, having seen lots of ideas for personal planes, decided to draw up his own, a roadable folding-wing, four-place ship, shown above. The design, among those submitted in the recent Popular Science competition, calls for cruising speed of 100 mph, operation with full load from runway less than 1500 feet long, steep glide under full control, spinproof, fourwheel landing gear, electric starter, 165 hp. engine, wings that will fold or can be removed, for roadability. Fuel for three hours of cruising, landing speed under 40 mph, and stalling speed of 50 mph, surface speed of 25 to 35 mph, ceiling of 10,000 to 12,000 feet, only enough instruments for contact flying, comfortable wide automobile type seats, fixed pitch propeller unless quantity producing makes controllable pitch prop available.

Coast Guard Unit To Recruit Airmen

Coast Guard is planning selective recruiting of pilots for its post-war air Auxiliary.

The air Auxiliary units will operate in cooperation with the surface vessels in air-sea rescue activities and other emergency functions and in maintaining safety. Creation of the air Auxiliary has been authorized by Congress, but little or no activity is contemplated until the Auxiliary returns to a peacetime basis.

Organized in 1939—The Coast Guard Auxiliary was founded in 1939 as the Coast Guard Reserve. In 1941 the need for reservists in the Coast Guard organization dictated a change in the name to Auxiliary for those who served with but could not become part of the Coast Guard or the reserve. Pre-war requirements for membership in the Auxiliary are the ownership of a boat and completion of required instruction courses in piloting, small boat handling and similar subjects. A limited number of others were admitted as boat crews.

Commander James H. Kimberley, head of Coast Guard Auxiliary activities, expects first enrollments in the air Auxiliary to be limited to flyers with amphibian or float

planes and later expanded to include land plane owners.

Radio Teamwork—Radio operators also will be enrolled to effect radio teamwork between coastal points, planes and boats. Membership in the Auxiliary will be selective, barring any mass absorption of the Civil Air Patrol. Qualifications will be worked out by an officer of Coast Guard aviation, and units will be organized chiefly where Auxiliary groups now operate. This includes the three sea coasts, the Great Lakes, and navigable rivers such as the Mississippi, Missouri, Tennessee and Hudson.

Port in City Limits

An airport bounded on the south by the southern city limits, is the answer of Lebanon, Ind., (population 7,000) to the airpark problem. The 53-acre field with two 1,500-foot turf runways, has been opened under temporary CAA designation on land owned by the city, under operation of Lebanon Airport Co., Robert Hulse, president.

The central Indiana town's airport has a five-plane row-type hangar of steel construction, fully occupied and a cinderblock building housing operations, pilots' lounge and observation room. East end of the building is entirely of glass, built in V-shape for specta-

tor purposes. Additional land is available to the east, if and when expansion is necessary.

Training Contracts

Settlement of 95 pilot-training war contracts of the War Training Service has been completed by the CAA contract termination board in the last four months, during which members flew 22,000 miles, inspecting training centers and dealing with 75 contractors. Claims totaling \$3,500,000 were settled for approximately \$1,600,000. One contractor only failed to agree and he has appealed to Administrator T. P. Wright for reconsideration.

Board included L. W. Lawrence, CAA contract and service officer; W. G. Stewart, assistant WTS director, and John P. Mifflin, WTS chief of operations. Contractors affected were those who had been training instructors when the Army ordered instructor training stopped as of Jan. 15, 1944. Many of the operators were left with no business, and some of the centers became virtual "ghost towns."



GOV. SNELL JOINS CAP:

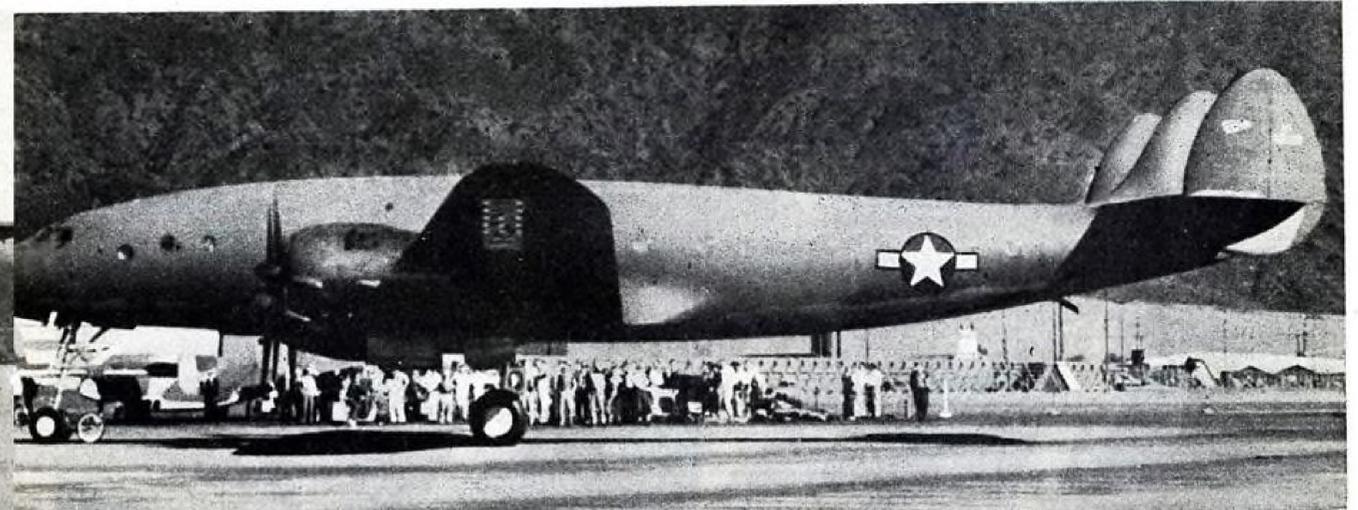
New addition to the Oregon Wing of Civil Air Patrol is Oregon's governor, Earl W. Snell, shown above signing his membership application, right, while Col. Earle Johnson, national CAP commander, left, witnesses his signature.

PASSENGER-CARGO LOADS ARE GETTING BIGGER—

Official Navy Photo



Two-thirds bigger than any flying boat now used by the Naval Air Transport Service, the giant 70-ton MARS forecasts even bigger sea-based passenger-cargo planes after Victory.



Largest and fastest land-based commercial transport plane, the 60-passenger CONSTELLATION gives a real indication of what America may expect in tomorrow's luxury liners.



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-  Powerful new fuels undreamed of two years ago play an important part in today's sensational aircraft performance.
-  Outstanding among these is Socony-Vacuum's great new Super Fuel Power, "Flying Horsepower."
-  It's the result of 11 years' research in catalytic cracking and multiple developments, climaxed by the famous TCC Process and the Magic Bead Catalyst.
-  "Flying Horsepower" is now flowing to U.S. warplanes from 19 great Socony-Vacuum catalytic cracking units, a \$90,000,000 investment in new refining facilities and equipment.



For aircraft designers, builders and operators this greatest catalytic cracking program in the world promises even greater "Flying Horsepower" for tomorrow's super planes and cargo craft.

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NEW SUPER AVIATION OIL HELPS KEEP ENGINES CLEAN!

Drawing upon 78 years' lubrication experience, Socony-Vacuum has developed a new super Mobiloil Aero for aircraft use, to serve as a running-mate for new Mobilgas Aero. In operational flights covering thousands of air-hours, this new oil has proved its exceptional wear-resisting qualities. Outstanding feature is resistance to ring-clinging deposits.

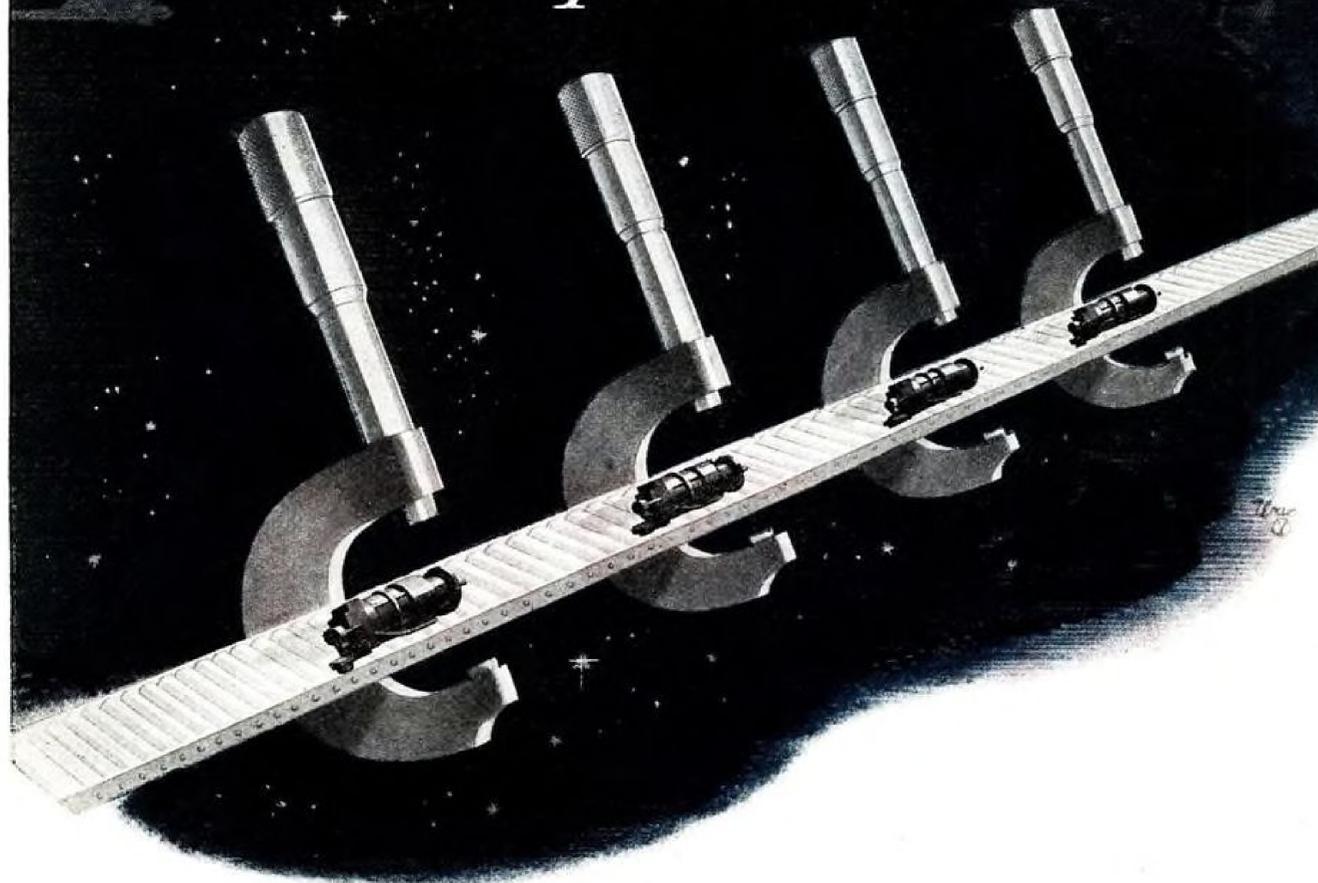


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IN 3 weeks Jack & Heintz designed a unique retraction motor for the Air Forces . . . made important improvements in motor performance and life that had never before been thought possible . . . and in 2 more weeks were producing it in production-line quantity at a lower price to the government. When the war is won this Jack & Heintz ability will be available to industry—to help you with better parts or products, engineered and produced with new precision at production-line speed and low cost, to meet your postwar competition. We would like to show you this unique combination at work now. Jack & Heintz, Inc., Cleveland, Ohio, manufacturers of aircraft engine starters, generators, gyro pilots, gyro flight instruments, magnetos, motors.



Minn. Groups Push Aviation Amendment

Backers see properly developed aviation facilities as strengthening state's bid for becoming great air center.

Launching a well-organized, all-out drive for passage of an aviation amendment to the Minnesota state constitution, Minnesotans have been told by Vernon S. Welch, campaign manager of the newly-organized Aviation Amendment Volunteer Committee, that passage of the amendment will insure the state a high place in post-war aviation and air commerce.

► **Urges Sound Program**—According to Welch, the real future of Minnesota lies in the development of a sound, progressive aviation program and he pointed out that the 1943 Legislature enacted a far-reaching and far-sighted program, totally dependent on passage of the amendment for its fulfillment. He compared the amendment in its designs for air travel with what

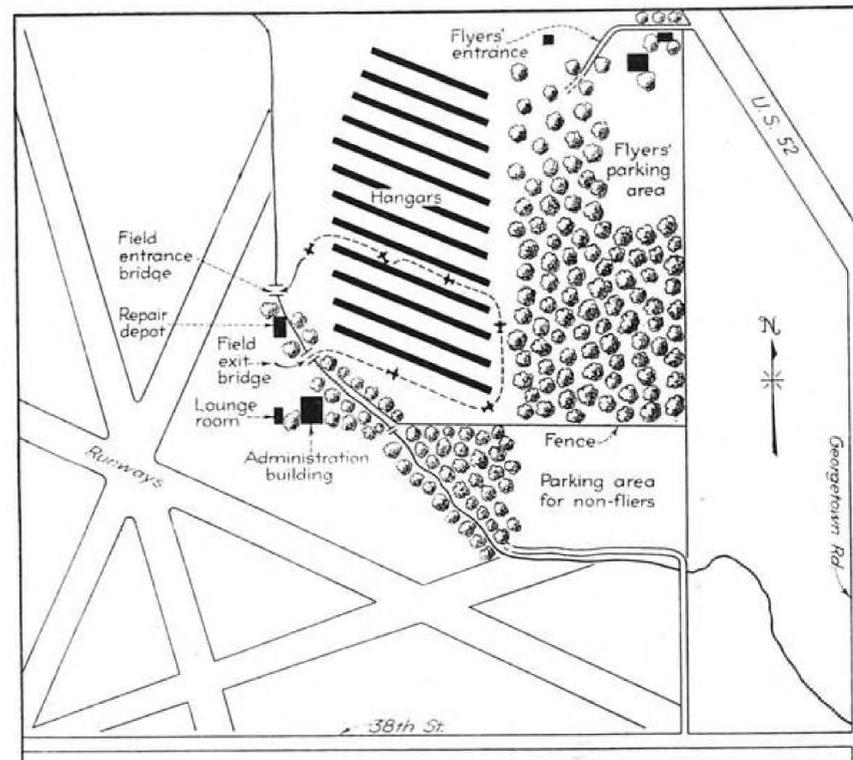
the Babcock highway amendment did 20 years ago for the state highway system by taxing autos.

The aviation amendment is an enabling act authorizing the state Legislature to levy a tax on aviation gasoline and to license airplanes. The money raised by such means would be made available for airport and airway development in the state.

Detroit Port Study

Analysis of aviation facilities within a 40-mile radius of downtown Detroit, as a basis for recommending such additional installations as may be needed for the next 15 years, is planned by a new Detroit Metropolitan Aviation Planning Authority.

The Authority is made up of the Michigan Board of Aeronautics, which has earmarked \$80,000 for the work, and officials of the city of Detroit and Wayne, Oakland and Macomb counties. A firm is to be employed to make the analysis and master plan. S. M. Dean is chairman of the authority.



SHANK AIRPARK TO USE NATURAL ADVANTAGES:

Plans for Bob Shank's new 152-acre airpark, six miles northwest of downtown Indianapolis, will use a drainage ditch already in field, to separate flying field from spectators' and flyers' parking areas, and will save most trees, to provide spectator shade. The all-turf field is planned so runways will be within 22½ degrees of any wind direction. Plan calls for eventual construction of 12 hangars, 600 by 26 feet each. Entrance and exit bridges across ditch to flying field, make possible one-way taxiing system for planes. Since 1928, Shank has operated Hoosier airport at Indianapolis, recently leased it to Parks Aircraft Sales and Service.

Briefing

For Private Flyers and Non-Scheduled Aviation.

By ALEXANDER McSURELY

► **Republic's Amphibian**—First all-metal production version of Republic Aviation Corp.'s new personal plane amphibian is being groomed for flight tests, following exhaustive flight tests on a plywood and fabric-covered prototype. President Alfred Marchev says the all-metal plane has been completely re-engineered to take advantage of mass production shortcuts, and man-hour savings.

► **Grumman Lightplane**—A two-place sportplane with topspeed of 185 mph., and powered with a 125 hp. engine, is said to be Grumman Aircraft Engineering Corp.'s proposed entry into the personal plane market. Plane is designed for high performance and maneuverability, slanted to appeal particularly to military pilots.

► **300 Canada Airstrips**—Russell L. Gibson, president, Cub Aircraft of Canada, Ltd., Hamilton, Ont., has disclosed plans to build 300 airstrips in Canadian municipalities with population over 2,000, as post-war employment measure. Towns are being urged to plan sites for strips 2,000-3,000 feet long, and 200 feet wide which could be enlarged if necessary for feeder line operations.

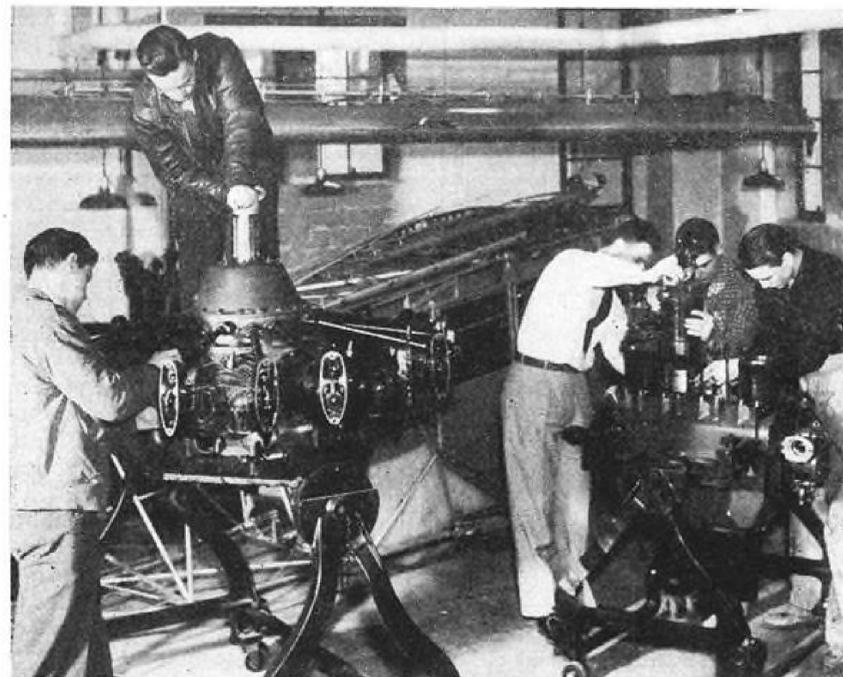
► **Oklahoma Flying Farmers**—Limiting active membership to farmers and their wives who use airplanes in their farming operations, some 38 Oklahoma farmers have established the Oklahoma Flying Farmers chapter of National Aeronautic Association, with headquarters at Stillwater and membership spreading through the state. Several members have instructors' ratings and are teaching neighbors to fly. Planes are used to locate cattle, hunt coyotes, check fence breaks, fly to town for supplies, emergency trips for machinery parts, delivery of light perishable produce to market, etc. Vice-President Forrest Watson, last winter flew in mail and supplies to his snow-bound community of Thomas, and recently took a farm agent on an aerial inspection tour of 165,000 acres of wheat in an hour and a half. NAA charter was presented by W. M. Morgan, Oklahoma state NAA councillor to Henry Bomhoff, Calumet, OFF president, at recent Oklahoma City meeting.



KENYON'S FLYING CLUB GOES TO WAR:

Kenyon College, at Gambier, Ohio, was one of the first colleges to operate its own flying field, Port Kenyon, which opened in 1935. Kenyon's pre-war flying club of 1940, above, contained many students who afterwards continued their aviation careers in military and civil life. Left to right: Ensign John W. Elliott, now Jap prisoner in Philippines; George W. Allaman, St. Joseph, Mo.; Lt. William F. Lieurance, Naval Air Corps; Lt. Stuart W. Rose, USN; Lt. A.

Rodney Boren, USN; Lt. Robert H. Legg, US Army; Maj. George E. Sutton 3rd Air Force; Lt. Murray J. Shubin, AAF, became Ace by shooting down 5 Zeros in 45 minutes; Lt. Clark L. Henderson, American Airlines; Instructor Donald M. Gretzer, now with CAA at Fairbanks, Alaska; Charles D. Nichols, American Airlines. Plane in background appears to be low-wing Aeronca of which model only a small number were built.



POWERPLANT STUDY AT KENYON:

Prewar picture of Kenyon college aviation students in powerplant course shows youths now in military service, aviation or industry. Both ground laboratory courses and flight school will be resumed at war's end. Left to right: Lieut. (JG) Joseph H. Allen, USN; Charles D. Nichols, American Airlines; Instructor Don Gretzer; Ens. Charles C. Bowen, USCG; John D. Huggins, Fansteel Metallurgical Corp.

Kenyon to Resume Aviation Course

With a tradition already established by its flying alumni probably second to no other college, Kenyon College at Gambier, Ohio, plans to resume its college aeronautics course, as soon as availability of instructors and equipment permit, according to Dr. Gordon K. Chalmers, president.

Meanwhile Port Kenyon, the college airport, is being leased and maintained by Cooper-Bessemer Corp. at nearby Mt. Vernon, O., which uses the field for operation of its Fairchild cabin plane to ferry its engineers between plants.

Kenyon's first airport, in 1934, was provided by an alumnus, Wilbur Cummings, a flying enthusiast, who wished to fly his own plane there, and who urged the college to pioneer in aeronautics education. The present field with two hangars and a flyers' lounge, with 120-acre landing area, was opened a year and a half later. A laboratory in the physics building provided facilities for study of powerplants and other aircraft components.



The American public, the aviation industry in general and a number of aircraft manufacturers in particular would like a specific answer to this question . . . and we wish that we could give it. This much can be said, however, with but little likelihood of disagreement. At no time in the twenty-odd years since the world witnessed the first practical flight of a rotary wing ship, has professional and public interest in rotary wing flight been as active as at present, *nor has the future of the field been as promising* ★ The Autogiro Company of

America has been engaged in rotary wing research and development longer than any other organization in America. Its engineering and research staff, its records of development, experimentation and thousands of hours of flight, and the right to use its numerous inventions, offer incalculable assistance to licensees. We shall be pleased to discuss details of Autogiro Company licensing arrangements with interested aircraft or other manufacturing executives ★ AUTOGIRO COMPANY OF AMERICA, Willow Grove, Pennsylvania.

Companies now producing for the war, under license from the Autogiro Company of America, include:

THE FIRESTONE TIRE & RUBBER COMPANY (G. & A. AIRCRAFT, INC.)
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**AUTOGIRO COMPANY
OF AMERICA ★**

THE AIR WAR

COMMENTARY

Battleship-Carrier Fleet Task Force Proves Efficacy in Philippines

Combination of mutually dependent units working in close coordination shows devastating effectiveness.

Although carrier-based aircraft played a strong, possibly a dominating role in the great air-sea Battle of the Philippines, surface vessels, including battleships, cruisers and destroyers, played such an important part that the extreme views as to their ultimate usefulness are being modified. Because of the airplane a new method of using the fleet has been developed in this war, and a new conception of "sea-air power" has emerged.

Even the most powerful battleships do not fight alone, but as part of the battleship-carrier team. The battleship is a floating gun platform whose newly developed and amazingly effective anti-aircraft armament (5-inch, 40 mm., and 20 mm.) protects the carrier from air attack. Likewise the carrier is a floating landing strip whose fighter aircraft protect the battleship. Defensively, both work together, each being indispensable to the other. Because of this, both have attained a new effectiveness offensively.

► **Battleships of the Line**—Despite the loss of powerful capital ships to aircraft attacks at Taranto (Italian), Pearl Harbor (U. S.), and off Malaya (British), battleships and heavy cruisers will continue to be essential members of the modern naval striking force. The United States now has 23 battleships in commission, besides the two new 27,000-ton, 750-foot, 12-inch gunned battle cruisers *Alaska* and *Guam* (four more well along in this CB (cruiser-battleship) class, the Hawaii, Philippines, Puerto Rico and Samoa, due for action in 1945).

Of the 23 battleships (BB), ten are new, including four of the 1939-40 *Iowa* class (*Iowa*, *New Jersey*, *Missouri* and *Wisconsin*). Two others in this class, (the *Illinois* and *Kentucky*), ordered in September, 1940, have been delayed owing to the higher priority

of the aircraft carrier, which sparks the new naval strategy. The *Iowas* have a standard displacement of 45,000 tons; dimensions of 880' x 108' x 36'; propulsion by four screws, with high pressure, high temperature geared turbines, totaling 200,000 SHP; speed 32 knots, plus; armament, 9 x 16" guns in triple turrets, 20 x 5" guns in twin turrets, numerous Bofors 40 mm. and Oerlikon 20 mm. automatic cannon and other AA guns; total crew, 2,300.

► **Indiana Class**—Six other new battleships include the *Indiana* class of 1938 (*Indiana*, *Massachusetts*, *Alabama* and the slightly varying *South Dakota*), and the *North Carolina* class of 1937 (*North Carolina* and *Washington*). These are all 35,000-tonners, 115,000 SHP, speed 28 knots. The 13 other battleships in commission are those of World War I or earlier, modernized as thoroughly as possible, some of course re-modernized after Pearl Harbor. Taken altogether, the 23 battleships represent a fast, powerful striking force of heavy units unsurpassed in naval history, the slugging element of an American Fleet now greater than all the rest of the world's navies combined.

► **Queen of the Pacific**—The past 14 months, however, have demonstrated that the spearhead of naval striking power is the aircraft carrier, and that the wisdom of high priority for the carrier program has been completely vindicated. There are now nearly 100 carriers of all types, including 14 Aircraft Carriers (CV) of the 27,000-ton *Essex* class, carrying 80 airplanes; 8 Aircraft Carriers—Light (CVL), being converted 10,000-ton light cruisers of the *Independence* class (one of these, the *Princeton*, was lost in the recent Philippines action). The CVL's carry from 35 to 45 planes, usually a mixed group of dive bombers, torpedo bombers and fighters. Be-

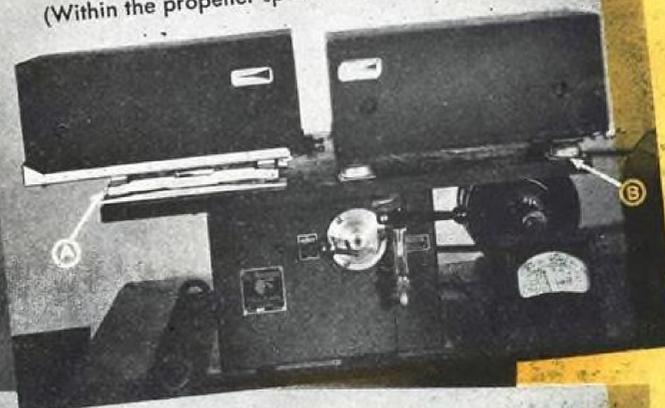
sides these there are more than 70 Aircraft Carriers-Escort (CVE), auxiliary carriers with flight decks atop merchant ship hulls, carrying from 20 to 40 airplanes, and with a variety of duties. Two of these were lost in the recent air-sea battle. Speed of the CV's is about 35 knots, of the CVL's, 33 knots, and of the CVE's from 16 to 24 knots, depending on type. Three aircraft carriers—Large (CVB), 45,000-ton "Battle Carriers," are under construction and should see action in 1945. Of our pre-Pearl Harbor carriers we still have the *Saratoga* (33,000 tons) *Ranger* (14,500) and *Enterprise* (19,900), each carrying over 80 aircraft.

► **Carrier Forces of 3rd and 7th Fleets**—It will be recalled from the communiques and press reports of the Philippines air-sea victory that Admiral Kincaid's 7th Fleet, which cooperates directly with General MacArthur, had a "light-carrier" force, and that part of the Jap strategy was to drive a wedge between Kincaid's fleet and Halsey's. The Japanese opened the action, and as the CVL's were no match for the enemy fleet in a straight surface contest they eluded the opposing warships at the start. Soon, however, from a safer distance the CVL's were able to pepper the Jap fleet with hundreds of *Wildcats*, *Helldivers* and *Avengers*, inflicting heavy damage and causing it to withdraw.

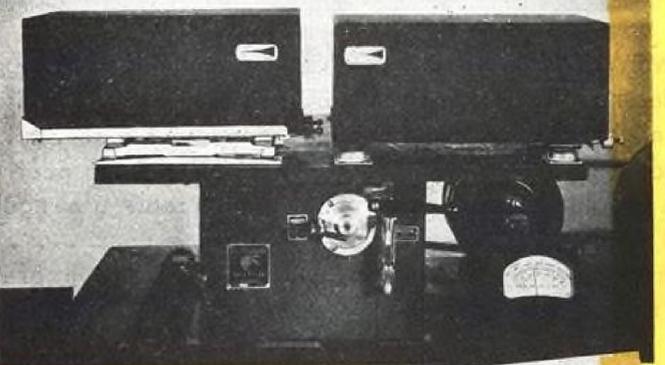
This battle of the Leyte Gulf was a daring and brilliant action, and Rear Admiral Sprague, commander of Kincaid's "jeep" carrier force deserves great credit. Later on, reinforcements of the big fast CV's from one of Vice Admiral Mitscher's carrier task groups (of Halsey's 3rd Fleet) joined up with Sprague and the rout was utter and complete. It should be noted that Mitscher's task force, composed of five carrier task groups each headed by a Rear Admiral, is not the famous Task Force 58. That designation applied to the large carrier task force led by Mitscher after the big Marshall Islands campaign in February, 1944, when it was the 8th Task Force in Admiral Spruance's 5th Fleet, hence Task Force 58. For the present blitz it has been enlarged and re-organized, and as part of the 3rd Fleet has a number (as yet unannounced) in the 30's, such as Carrier Task Force 35. Its component carrier groups are designated (for example) as Carrier Task Group 35.1, 35.2, etc. NAVIGATOR

A PREVIEW

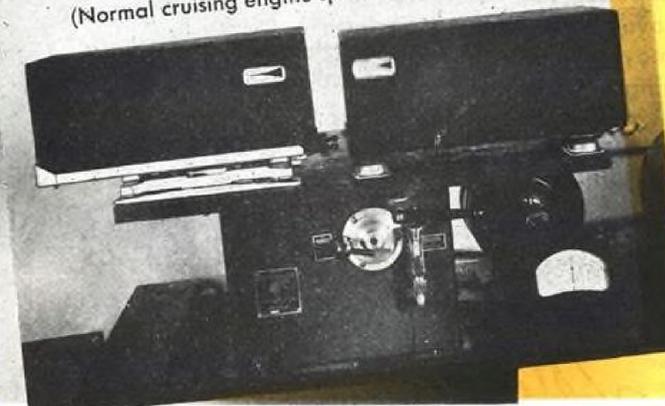
Vibration frequency — 1200 cycles per minute.
(Within the propeller speed range on many airplanes)



Vibration frequency — 1500 cycles per minute.
(Within the propeller and lower engine speed ranges)



Vibration frequency — 1800 cycles per minute.
(Normal cruising engine speed for most airplanes)



THESE PICTURES PRESENT A PREVIEW OF THE CONDITIONS UNDER WHICH YOUR AIRBORNE ELECTRONIC EQUIPMENT WILL OPERATE DURING FLIGHT.

TWO shock suspensions, both "mounted in rubber" and carrying equal weights, are shown installed side by side on the same shake table with the table set for a horizontal amplitude of 1/32 inch.

The mount A is a Robinson Vibra-shock* suspension, as manufactured to support a vital electronic unit on our warplanes. B is a conventional shear type mount formerly used for this same equipment.

These photographs were taken at three vibrating frequencies within aircraft operating ranges. (See captions) It is apparent that the mere mounting of equipment "in rubber" does not assure protection from vibration and shock. In fact, conventional mountings often amplify vibration 300% or more.

Robinson engineers use the exclusive double-neutral axis principle, and have as a background the design and manufacture of more than 75,000 complete shock suspensions for the Armed Services.

We can design and build, for your equipment, Vibrashock suspensions guaranteed to absorb better than 90% of all engine and propeller vibration throughout aircraft operating ranges.

Robinson Aviation offers for the first time a complete shock mount service, available to aircraft and radio manufacturers and users.

*Trade Mark

ROBINSON AVIATION, INC.

730 FIFTH AVENUE, NEW YORK 19, N. Y. • FIRST NATIONAL BUILDING, HOLLYWOOD 28, CALIF.



SOMEWHERE in the dark of a Celebes moon, a silent shape steals closer, ever closer to the menacing bulk of a Japanese heavy cruiser. Suddenly . . . its mighty engines exploding in a thunderous roar . . . it drives home its lethal load and swerves, madly bucking, to make good its escape. Aiding in its headlong dash for safety, beyond the reach of vengeful guns, is the careful design and construction of its bow sections . . . a modern scientific development of the ancient, fundamental principle of the Wedge, which has served Man in countless usages from the first flint axe to the P. T. boat.

ALSO serving mankind in the scientific adaptations of of fundamental engineering principles, Lapointe has been ever first to combine imagineering with time-proven principles. Broaching is no longer just another method of removing metal. In the hands of those who plan for Tomorrow, broaching has become a powerful weapon in the war of production . . . and in those same hands, will provide revolutionary achievements in the days of peace, by making things quicker — cheaper . . . and better!

The first broaches, or drifts, as they were then called, were driven, one upon another, through the work part.



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

THE WORLD'S OLDEST AND LARGEST MANUFACTURERS OF BROACHES AND BROACHING MACHINES

PERSONNEL

S. C. Bennett recently has joined the staff of the Lawrence Aeronautical Corp., at Linden, N. J., as chief engineer. Bennett has been associated with Bell Aircraft Corp. at Buffalo and Marietta, Ga. since 1942, and was previously associated with Ranger Aircraft Engines at Farmingdale, L. I. Bennett has had extensive experience dealing with engineering problems and organizing engineering departments.



George Pizarro has been appointed sales manager of Adel Precision Products Corp.'s consumer products division. He plans immediate opening of sales offices in Chicago, Atlanta and Dallas and enlargement of Adel's New York City engineering office. For 25 years he held executive sales positions with Norge, Kelvinator, Stewart-Warner and Youngstown Pressed Steel.



Capt. Harold F. Fick, USN, has received the Bronze Star Medal for meritorious achievement as commanding officer of an escort carrier and as an Atlantic Fleet anti-submarine task group commander. Captain Fick is now on duty as director of the Aviation Planning Division, Deputy Chief of Naval Operations (Air).

Arthur E. Smith (photo) has been named assistant chief engineer of Pratt and Whitney Aircraft Division of United Aircraft Corp. He has been chief engineer for Pratt and Whitney Aircraft Corp. of Missouri at Kansas City for the past two years. John L.



Bunce, who has been service manager of Pratt and Whitney at East Hartford, will replace Smith in Kansas City. Smith was project engineer of the R-2800 engine in 1940 when it reached the production stage. He supervised all engineering activities as the new R-2800-C model went into production in Kansas City.

The Board of Directors of General Aircraft Corp., Astoria, L. I., announce the resignation of Harlan J. Maynard, Jr., president. Resignation becomes effective Dec. 31 and in the interim period Maynard will be on leave of absence. Other organizational changes include: Lawrence W. Mattson, Sr., formerly director of war contract procurement and personnel, has been named general manager in charge of production, inspection, planning and contract procurement; Ambrose Forward has become factory superintendent, replacing Stanley Batakis, resigned; David Smurl has become director of contracts procurement; and Donald McCormick becomes chief of the inspection department, replacing O. C. Leonard.

Maj. Gen. Charles E. Branshaw, former commanding general of the AAF Material Command at Wright Field before its merger with the Air Service Command into the present Air Technical Service Command, has been awarded the Legion of Merit. The award was given for his work from 1940 to 1943 as district supervisor of the western procurement district of the Material Command. General Branshaw is now on terminal leave awaiting retirement, effective Dec. 31.

Edward O. Ireland (photo), formerly New York mail and express traffic representative for Transcontinental and Western Air, Inc., has been named assistant director of cargo sales for the TWA system. He will work with A. W. French, TWA



director of cargo sales. Ireland will be headquartered in Kansas City, but will spend considerable time in New York coordinating TWA's air cargo program with surface carriers. Ireland was formerly vice-president in charge of traffic and terminals for the Liberty Motor Freight Lines, Inc., of Secaucus, N. J., and a director of the Transco System, Inc., of Denver.

J. G. Holland is the new general attorney for Continental Air Lines, Inc., and has not been named general counsel to replace Terrill Drinkwater, as previously announced. No successor to Drinkwater, who has since joined American Airlines, has been named by Continental. The airline has both a general counsel and a general attorney.



G. O. Wiggin

G. O. Wiggin has been appointed assistant general manager of the Aeronautical Chamber of Commerce. He will coordinate the activities of the eight committees of the Aircraft Manufacturers Council and assist in the management of the service departments of the Chamber. Prior to joining the Chamber, Wiggin was executive engineer of Ranger Aircraft Engine Division of Fairchild Engine and Airplane Co. He also has served with Continental aviation Engineering, Fairchild Aerial Camera Corp., and Kirkham Aeroplane and Engine Corp. He is a member of the Institute of Aeronautical Sciences and the Society of Automotive Engineers.

Maj. Raymond C. Firestone has returned to his former position as general manager of the Memphis plant of Firestone Tire and Rubber Co., after having served over two years with the Air Transport Command. He set up the first rubber conservation unit of the ATC and was also rubber conservation officer for the ferrying division of ATC. Major Firestone introduced a program to teach pilots and mechanics proper handling of heavily loaded aircraft to obtain maximum tire life. He has flown overseas as a ferrying division pilot.

Richard J. Stevens (photo) has been named superintendent of overhaul at the home maintenance base of Transcontinental and Western Air, Inc., at Kansas City. A veteran of fifteen years with TWA, he assumes the position formerly



held by Verde A. Blackwell, deceased. The new superintendent has been regional maintenance supervisor at the La Guardia Field base. In 1929 Stevens joined Aero Corp.,



"High" Gear for the family car?

The many and varied structural and mechanical advances in warplane design will be used to advantage in Tomorrow's commercial and private aircraft. Abundant strength has been coupled with lightness of weight. Tremendous power has been made submissive to control. The future promises more latitude in design to meet an increased variety of services.

Analysis shows that a surprising number of these engineering advances have been made possible by the solution of friction problems by Fafnir engineering and manufacturing skill. Fafnir Ball Bearings, properly designed and produced for strength and sensitivity in all vital turning points, have permitted aircraft

engineers to obtain the greatest efficiency from their control system designs.

Whatever the transformation of aircraft from the sorties of war to the flights of peace, Fafnir will have the right ball bearings for each requirement. We will continue to make it sound practice for aircraft engineers to specify Fafnir Ball Bearings. The Fafnir Bearing Company, New Britain, Conn.

FAFNIR 
BALL BEARINGS *for Aircraft*

FREE-



The Complete Series of Prints of Norman Bel Geddes "Aircraft of Tomorrow" Designs, of which this is the sixth and final featured by Fafnir. These are separately printed in large size suitable for framing for your office or home—or a welcome gift to an airman friend. Name and description only is added—without advertising text. Mail the coupon now—supply is limited.

The Fafnir Bearing Company
 New Britain, Connecticut
 Please send me the Series of Six Prints—"Aircraft of Tomorrow".
 Name.....
 Address.....
 City.....State.....
 Firm Name.....

Taking to the air as readily as it follows a highway, the sedan of 195X may acquire a third travel dimension—a new "high" gear! The Flying Roadable—with accommodations for five passengers—has sturdy wings that telescope and fold upward for garaging or road travel. A push of a button transforms it to an airplane capable of 100 to 150 m. p. h. — and man's immediate "locality" extends beyond far horizons!

of California, a predecessor company to TWA.

Ed Herold has been named express and mail superintendent for Pan American Airways' Alaska Sector. Herold worked ten years for Grace Line and became assistant traffic manager. In 1942 he joined Pan American as traffic representative in Seattle and



later served as assistant to the traffic manager before his promotion Oct. 1 to express and mail superintendent.

J. J. Russell, formerly general works manager of the Fort William, Ont., plant of Canadian Car and Foundry, Ltd., making Curtiss Helldivers for the U. S. Navy, has been appointed assistant general manager of the Aircraft Division of Canadian Car and Foundry, with offices in Montreal. He is succeeded by **W. O. Will**, who was manager in charge of sub-contracts and assistant general works manager at the Fort William plant.

Jay M. Jackson has been appointed assistant to the general counsel of Braniff Airways. During the last five years he has been assistant to the resident attorney and in the contract division of Transcontinental and Western Air, Inc., in Kansas City.

Rob Roberts, former Associated Press war photographer and recently head of the photo department of Pan American Airways, is on a leave of absence with the Coordinator of Inter-American Affairs. He is now taking pictures in Brazil.

Maj. W. O. Riley has assumed command of the AAF Base Unit at Hawthorne Field, Orangeburg, S. C., replacing **Maj. William A. Buechner** who has been assigned to Hendricks Field, Sebring, Fla.

Lieut. Gen. Carl Spaatz, commanding general of the U. S. Strategic Air Force in the European Theater, has been awarded the Oak Leaf Cluster to the Distinguished Service Medal for exceptionally meritorious service as commander of the Strategic Air Forces in Europe, consisting of two widely separated Air Forces. "The mission of his force was the strategic aerial bombardment of German-held Europe, to weaken the internal organization of the enemy supply and maintenance system and to facilitate the Allied assault upon Northwest Europe."

J. E. White, project manager in charge of construction, procurement and equipment for the new plant of the Kropp Forge Aviation Co.,



TEN YEARS WITH PCA:

John Hoover Schaum, Pennsylvania Central Airlines' foreman of line maintenance, stationed in Detroit, came to Washington especially to receive a ten-year award pin from C. Bedell Monro, president. After a year of mechanical experience with one of the transcontinental airlines, Schaum joined PCA in 1933 and was assigned to Cleveland and later moved to Pittsburgh.

Chicago, has been appointed sales engineering representative of the company for the northern part of Illinois. White joined Kropp Forge in the formative stages of the aviation plant development and made a record in erecting and equipping the new buildings.

Gerald T. Jones, assistant shop superintendent at the trans-Atlantic headquarters of Pan American Airways, LaGuardia Field, recently received his 15-year service pin and a personal letter of felicitations from Juan T. Trippe, president. Jones joined Pan



American in Nassau where he was employed in aviation by the British government and later conducted his own machine shop. As co-pilot, radio officer and flight engineer aboard the Sikorski and Martin flying boats, he logged 1,750 flight hours.

Radio Division of Bendix Aviation Corp. announces appointment of **Samuel Rochester**, now buyer for Bendix radio, as district manager of the Middle Atlantic territory; and **Royal Vilas**, former official of the War Production Board, as district manager of the southeastern territory. Bendix recently announced its program for manufacturing and marketing a complete line of home radio sets as soon as the military situation permits.

TELLING THE WORLD

• **Maj. Charles E. Harner**, now on inactive status after two years service in the Army Air Forces, has joined Hill and Knowlton, public relations counselors. Major Harner, former financial and aviation writer and foreign correspondent of the Associated Press, was with N. W. Ayer and Son, Inc., previous to entering the Army. Hill and Knowlton handles numerous aviation accounts.



• **Hugh H. Johnson**, for the past three years director of advertising for the Bell Aircraft Co., with headquarters in Buffalo, has resigned to join Arthur Kudner, Inc., as assistant director of media. Before joining Bell, Johnson had been assistant to the director of merchandising of the Buick Motor Division of General Motors.

Mercy Flight

An Army plane dashed 230 miles recently to save the life of Seaman (2nd Class) Carlos E. Dillingham, Barnardsville, N. C. Maj. Waldo B. Jones, former A-20 pilot in Italy, flew the plane which carried Dillingham from Asheville-Hendersonville, N. C., air base, to the Navy Hospital at Charleston, S. C., where equipment was available for a delicate brain operation necessary to save the sailor. He had been wounded in the head in a hunting accident while home on leave.

An eight-minute change of a complete set of spark-plugs in one engine of the Lockheed Ventura, by the ground crew, made possible delivery of the sailor to the Charleston Army airfield by Major Jones, one hour and 38 minutes, after the North Carolina base had been alerted to make the flight.

Gets Far East Post

Air Chief Marshal Sir Trafford Leigh-Mallory, Commander in Chief of the Allied Expeditionary Air Force under Gen. Dwight D. Eisenhower, has been named Allied Air Commander in Chief in Southeast Asia. Air operations in western Europe will come under General Eisenhower's deputy overall commander, Air Chief Marshal Sir Arthur Tedder.

Looks Simple?

—here's what it takes to make a good DISCONNECT PLUG

• There are more than 25 precision-made parts in the average Multiple Circuit Electrical Connector. When assembled, they perform their function—that of making or breaking many electrical circuits simultaneously—with the utmost simplicity and efficiency. Such simplicity in operation is the end result of years of research, many refinements and great skill in manufacture. The Breeze Multiple Circuit Electrical Connector reflects in the efficiency with which it does its job, the experience which went into its production—the background which has made Breeze a leading producer of many different types of aircraft and electrical accessories.



CORPORATIONS, INC.

NEWARK, N. J.

PRODUCTION FOR VICTORY — PRODUCTS FOR PEACE

AVIATION NEWS • November 6, 1944

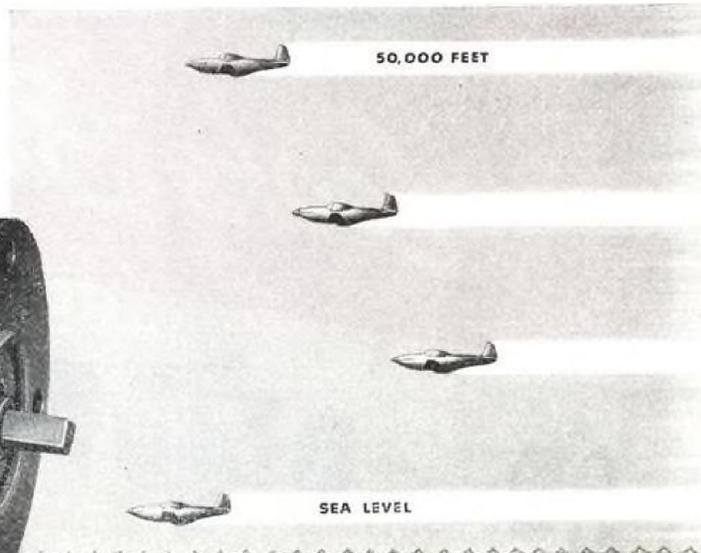
Socket construction features spring-loaded contact for positive electrical connection with pin.

Both pin and socket feature spring snap for ease of assembly in housing insulators after soldering.

Cross-section illustrating how contact pin is snapped into place after soldering on lead wires.



New Hartwell bantam air compressor has been performance tested from sea level to 50,000 ft.

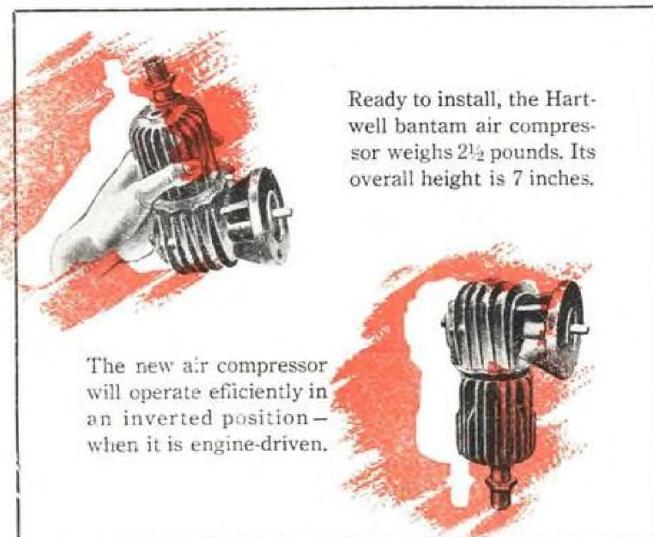


H-6520

BANTAM AIR COMPRESSOR

Provides New Vacuum Source

The Hartwell bantam air compressor meets the need for a compact, lightweight vacuum source for aircraft. Designed to solve the problem of one of the nation's largest aircraft manufacturers, it is being enthusiastically received by all who have tested it.



Ready to install, the Hartwell bantam air compressor weighs 2½ pounds. Its overall height is 7 inches.

The new air compressor will operate efficiently in an inverted position—when it is engine-driven.

Here is a typical performance rating: Operating at 2,000 r.p.m., at an altitude of 30,000 feet, the Hartwell air compressor's output is 73 c.f.h. under a pressure of 9 lbs. p.s.i. Performance tests from sea level to 50,000 feet have proved the stamina and dependability of this new lightweight air compressor. Made with a minimum number of parts, it is built to give long-term continuous service. All material finishes and processes conform to or exceed applicable AN specifications.

For detailed engineering information write or wire our Los Angeles office

Single source for 779 different aircraft
production parts and tools

HARTWELL

AVIATION SUPPLY COMPANY

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

PRODUCTION

Canadians Study Plans to Convert Mushroomed Aviation Industry

Continuation of sizable manufacturing organization after war with view to cooperation with RCAF in designing and building civil and military aircraft proposed.

Post-war activities of the mushroomed Canadian aircraft industry which before the war employed fewer than 1,000 people and now employs, with subcontractors, nearly one percent of the Canadian population, is being as widely discussed in the Dominion as the future of the United States industry is in this country.

Several plans have been brought forward. One which looks for a continuing sizable aircraft industry, calls for the industry designing and building new types of military aircraft in close cooperation with the Royal Canadian Air Force. Canada has always used either American or British designed aircraft, both civil and military, with the exception of the Noorduyn *Norseman* (UC-64) which was designed in Canada to meet Canadian bush freighting conditions. No engines are as yet being built in the Dominion and establishment of an engine-building industry also has been suggested.

► **Look for New Lines**—Meanwhile, Canadian aircraft plants, with war orders gradually terminating, and a number of contracts expected to

be completed early in 1945, are looking for new work. Automotive equipment and metal furniture have been rumored as lines being considered for the immediate period following contract termination.

Cutbacks recently reported include that for the *Catalina* PBY flying boats at Boeing Aircraft of Canada, Vancouver; Curtiss *Helldivers* at Fairchild Aircraft Ltd., Montreal; advanced trainers and *Norseman* transports at Noorduyn Aviation, Ltd., Montreal. The Montreal plants have received subcontracts for *Mosquito* and *Lancaster* bomber parts, as has Fleet Aircraft of Canada, Fort Erie, Ont., and Boeing is making parts for their B-29 *Superfortress* at Vancouver.

► **Conference**—A national conference of labor and management to discuss the future of the aircraft industry in Canada has been requested by aircraft lodges of the International Association of Machinists. The meeting recognized that Canada could not continue to support an aircraft industry employing 120,000 people as at present, and that management was un-

able to make concrete plans for the future, due to the precarious financial condition of the industry.

The Machinists meeting, which requested the conference, went on record to the effect that Canada can maintain an aircraft industry of substantial size to supply the domestic market and compete in the export field.

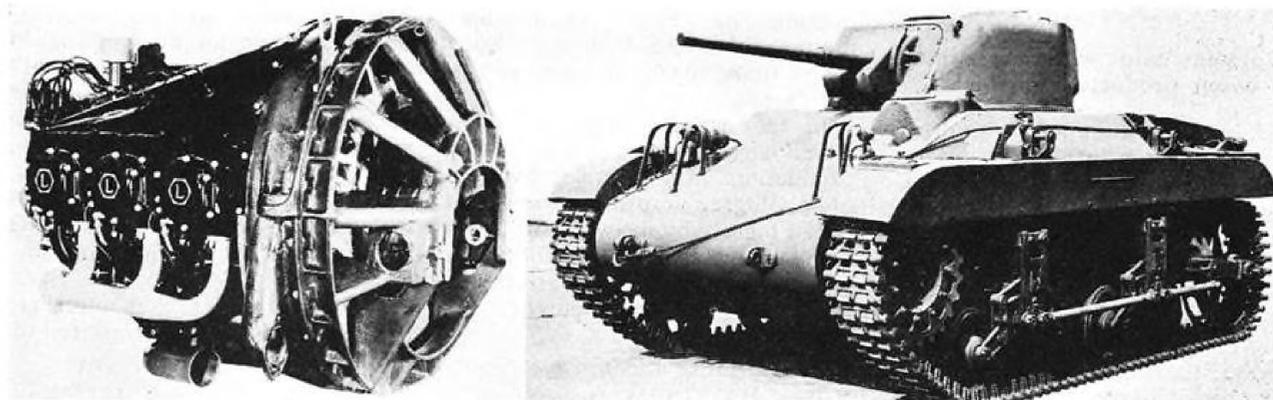
The conference also sketched a post-war civil aviation policy, including planned development of airport facilities, development of cheap and efficient air transport with neighboring nations, full utilization of Canadian geographical positions and government subsidies to small airlines to effect uniform wages and working standards throughout the industry.

IAS Meets this Week

Thirteen technical papers dealing with aircraft accessories and equipment will be presented in four technical sessions of the National Fall meeting of the Institute of Aeronautical Sciences in Dayton this week.

Radio noise in aircraft, aircraft engine gage unit, operational methods in servo-mechanism design, potentialities of a capacitance measurement method for fuel quantity gages in aircraft, airborne electric computing gun-sight, electronic controls in aircraft are on the agenda.

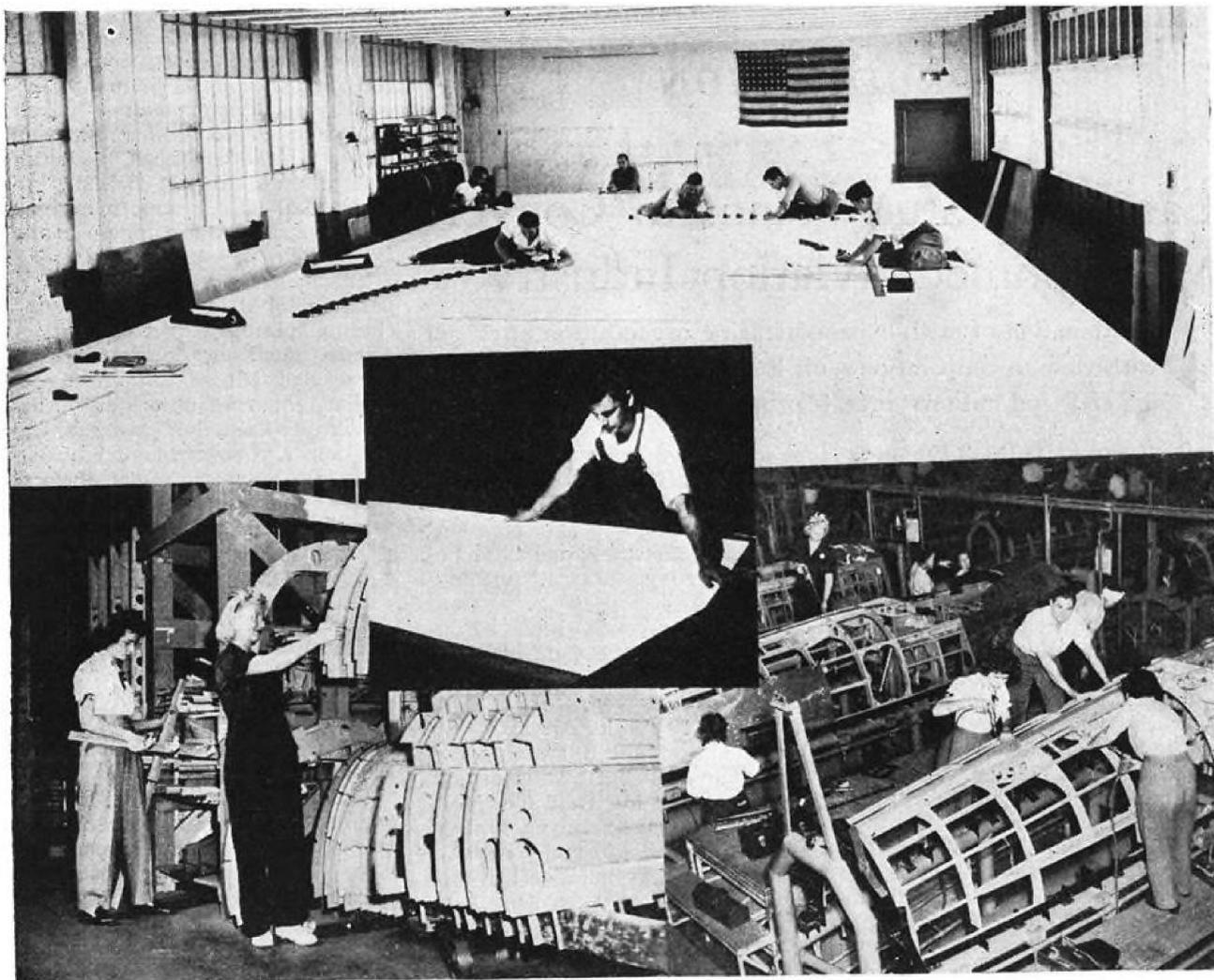
► **Col. Keirn to Be Honored**—The Thurman H. Bane award for 1944 will be presented on Thursday evening to Col. Donald J. Keirn, of the Power plant laboratory, Air Technical Service Command for his contribution to the development and utilization of the new jet propulsion engine.



AIRBORNE TANKS POWERED BY LYCOMING:

One of the first photographs of the airborne tanks which have been playing an important role in the Allied advance across Europe is shown above. Builders are the Lycoming engine plant at Williamsport,

Pa., and the Marmon-Herrington plant at Indianapolis. The engine is Lycoming's direct drive, six-cylinder, horizontally opposed, air-cooled engine, described as a "packaged power" unit.



"Ray-Production" Speeds Republic Output: Shown above are loftsmen at Republic Aviation scribing full-scale engineering layouts through a white overcoating to a luminous-coated sheet of metal. That single operation makes a reproduction negative from which copies are made on sensitized materials by simple photographic printing. The luminous drawing absorbs light, and throws it off for printing in a dark room. Inset shows a metal positive being developed. This war-born process has just been disclosed by Republic, which holds basic patents on the operation. The two lower pictures show women workers at the plant fitting fabricated parts into P-47 fuselages.

Republic Develops New Tooling Process

System said to speed aircraft layout production methods.

A process designed to expedite the tooling job in aircraft production involving hundreds of subcontractors and marking a major improvement in the art of tooling has just been disclosed by Republic Aviation Corp.

Republic engineers report that it will greatly improve layout reproduction methods for all industries using tools, dies, jigs, fixtures and templates, although it was designed specifically for aircraft.

► **"Ray Production"**—Called "Ray Production" and employing a patented luminous coating on metal to make reproduction negatives, the

process is credited by Republic with great speed and accuracy and as a prime element in their production of P-47 *Thunderbolt* fighters, of which they have built more than 10,000 in two and a half years.

In the process, negatives from which any number of master reproductions may be made by simple photographic printing, are produced merely by drawing full scale engineering layouts on metal to which the luminous coating has been applied. Basic patents are held by Republic.

In operating the process, luminous-coated metal is used as a drawing surface in producing negatives larger than 20 inches by 50 inches. For smaller detail layouts, the negatives are made by drawing on coated Vinylite, a transparent plastic to which Re-

public applies a special opaque coating.

► **Process**—The metal sheets which loftsmen convert into reproduction negatives have an overcoating of white masking material, presenting a smooth drawing surface on which preliminary pencil work may be done. Then, by using an ordinary drafting instrument with a sharp point, a loftsmen scribes through the overcoating, exposing the luminescent composition underneath with exactly the lines, curves and angles that interpret the engineer's design translated by the layout.

By mere exposure to strong light, either natural or artificial, the exposed luminescent lines and curves are activated sufficiently to radiate rays in a photographic dark room. Printing from this negative merely involves placing



It's well over 8,000 airline miles from Los Angeles to Calcutta: No small distance even in these days of global air transportation. Yet, surprisingly, flight mileage equal to more than four round trips over this route is the extent of the daily operational flying at the Ryan School of Aeronautics.*

The Ryan School has had 22 years of experience in dealing with the problems of daily flight operations. It already has hundreds of skilled pilots and technicians in its organization. With these assets, it is well equipped to undertake the operation of extensive airline service.

*At Army primary training bases at Hemet, California, and Tucson, Arizona

RELY ON RYAN TO BUILD WELL



RYAN

SCHOOLS

RYAN SCHOOL OF AERONAUTICS, SAN DIEGO, CALIFORNIA
OPERATING BASES: HEMET, CALIFORNIA, AND TUCSON, ARIZONA
THE RYAN SCHOOLS ARE SUBSIDIARIES OF THE RYAN AERONAUTICAL COMPANY

Aerocon Conduit

— FOR ALL SHIELDING APPLICATIONS

High Tension — Aerocon type 154 was first developed by Titeflex engineers to provide the surest and most efficient shielding conduit to blank out radio interference from high-tension aircraft ignition systems. Aerocon or its equivalent is now specified by both Army and Navy Air Forces for the shielding of ignition cables.

Low Tension — In addition to shielding of high-tension systems, Aerocon type 154 is now being used extensively for difficult shielding problems on low-tension systems. Aerocon is used on: electrical wiring from magneto to the ground switch, high voltage power lines

to sensitive electronic devices, as well as lines from the booster coil to the instrument panel.

Aerocon is Standard — Titeflex Aerocon type 154, or its equivalent, is now specified by both the Army and the Navy for high and low-tension shielding . . . wherever electrical connections on airplane or engine must be radio-shielded. Inquiries from aircraft manufacturers will receive the immediate attention of our engineering staff.

TITEFLEX, INC.
508 Frelinghuysen Avenue
Newark 5, N. J.



it in a contact printer with a previously sensitized sheet of material. Exposure of two or three minutes is sufficient to reproduce the drawing. The positive sheet, which may be metal, wood, plastic, paper or any material that has been sensitized with the requisite emulsion, is then developed under usual photographic solutions.

Marchev Minimizes Reconversion Needs

Republic Aviation president sees problem as mainly one of not-too-drastring shrinkage and revision.

Contraction and adjustment rather than reconversion is the principal problem facing the aircraft manufacturing industry, in the opinion of Alfred Marchev, president, Republic Aviation Corp.

In a different approach to post-war problems from that usually taken, Marchev said he did not hold with those who contend that the industry will lose approximately 99 percent of its present business, simply because it does not have that much to lose, since he estimated that about 50 percent of the present production is being done by subcontractors, many of whom are eager to get back to a peace-time production basis.

▶ Overtime—He estimated 30 percent was due to overtime work that would not be necessary to meet post-war requirements and that at least 10 percent could be traced to workers who are in the industry as a wartime measure.

It is his opinion, as expressed before the Advertising Club of New York, that the aircraft industry will not have to make any voluntary separations after the war on a basis of five percent of the present aircraft industry business.

It should be noted that Marchev is regarded among his colleagues in the top executive branch of the industry as an optimist.

▶ Fresh Start With Peace—He contends, however, that with peace, the industry will get a fresh start and that the cost of peacetime airplanes will be reduced sharply as a result of manufacturing experi-

ence gained during the war. He forecast a revolution within the industry out of which will come planes so much better and so much cheaper than anything the civilian market has seen before that aviation will retain its position as one of the greatest industries in the world, with horizons unlimited.

While problems of design, manufacture and financial readjustments are present, Marchev believes the biggest problem is the learning of the know-how of merchandising and distribution.

Allison to Make Jet Units for AAF

Company is first manufacturer of reciprocating engines to enter JP field.

Production of the first jet propulsion units by Allison Division of General Motors for the Army Air Forces will begin shortly after the first of the year, it was disclosed last week by E. B. Newill, general manager, who said preparations have been under way for some time looking to quantity output.

The new production assignment is in addition to present production and delivery schedules on Allison liquid-cooled V-1710 aircraft engines, of which more than 60,000 have been built since the start of the war.

▶ Wide Range of Products—Allison is the first producer of reciprocating engines to enter the jet field and will have a range of products not matched by any other manufacturer of airplane power at this time, although other engine companies have plans for jet and turbine power plants. General Electric Co. was the first United States manufacturer elected to produce in the United States the jet propulsion unit for Bell Aircraft's jet plane.

Allison will cooperate with the AAF Air Technical Service Command and General Electric in the manufacture of the units. Newell said a large number of subcontractors are being engaged and necessary tools and machinery being purchased.

▶ Test Cells—To provide necessary new facilities, 17 specially designed test cells will be constructed and additions built to two departments at Allison. Cost of this construction, together with purchase of necessary tools and equipment, is covered by a commitment of DPC for \$12,500,000.



P-47 BRINGS HIM HOME:

This Republic P-47 Thunderbolt pilot, Capt. Roy T. Fling, flew low to strafe a truck convoy in German territory, so low that tree branches still were snagged in the engine when he brought the ship in. The propeller was shot, both wings damaged beyond repair and the stabilizer a twisted mass of metal.

Ford Glider Order

A new contract for construction of 2,000 additional troop-carrying gliders for the Army Air Forces has been awarded Ford Motor Co., to be completed by December, 1945.

Production will be started as soon as present contract commitments are concluded. The gliders will be manufactured at the company's Iron Mountain, Mich., plant. With completion of the new contract, Ford will have made more than 5,000 of the ships.

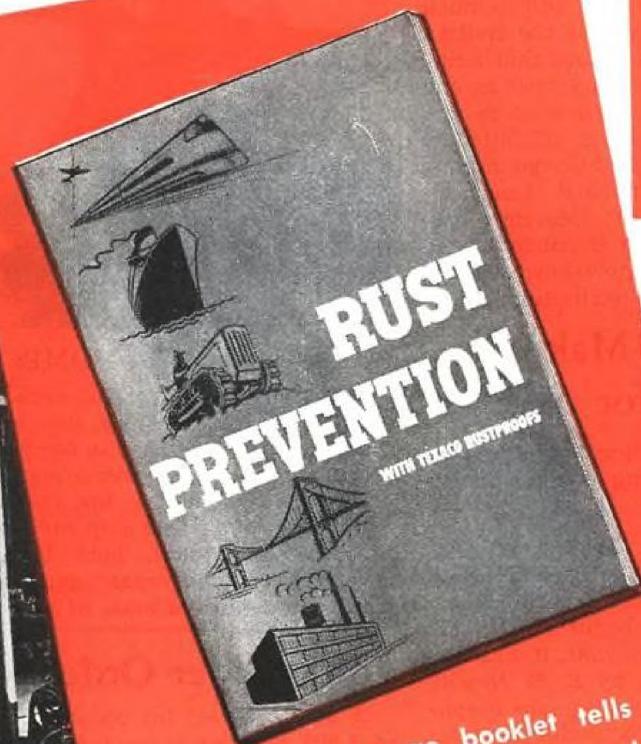
▶ Turbo-Superchargers — A side from the new contract, Ford reports they have produced 52,244 aviation turbo-superchargers. Total man-hours spent on each unit have been reduced from 619.74 in the first month when production was started at Ford, Jan., 1942, to 149.34. At employment peak on the supercharged job there were 3,700 workers. Now there are approximately 2,000.

Shift to Launchers

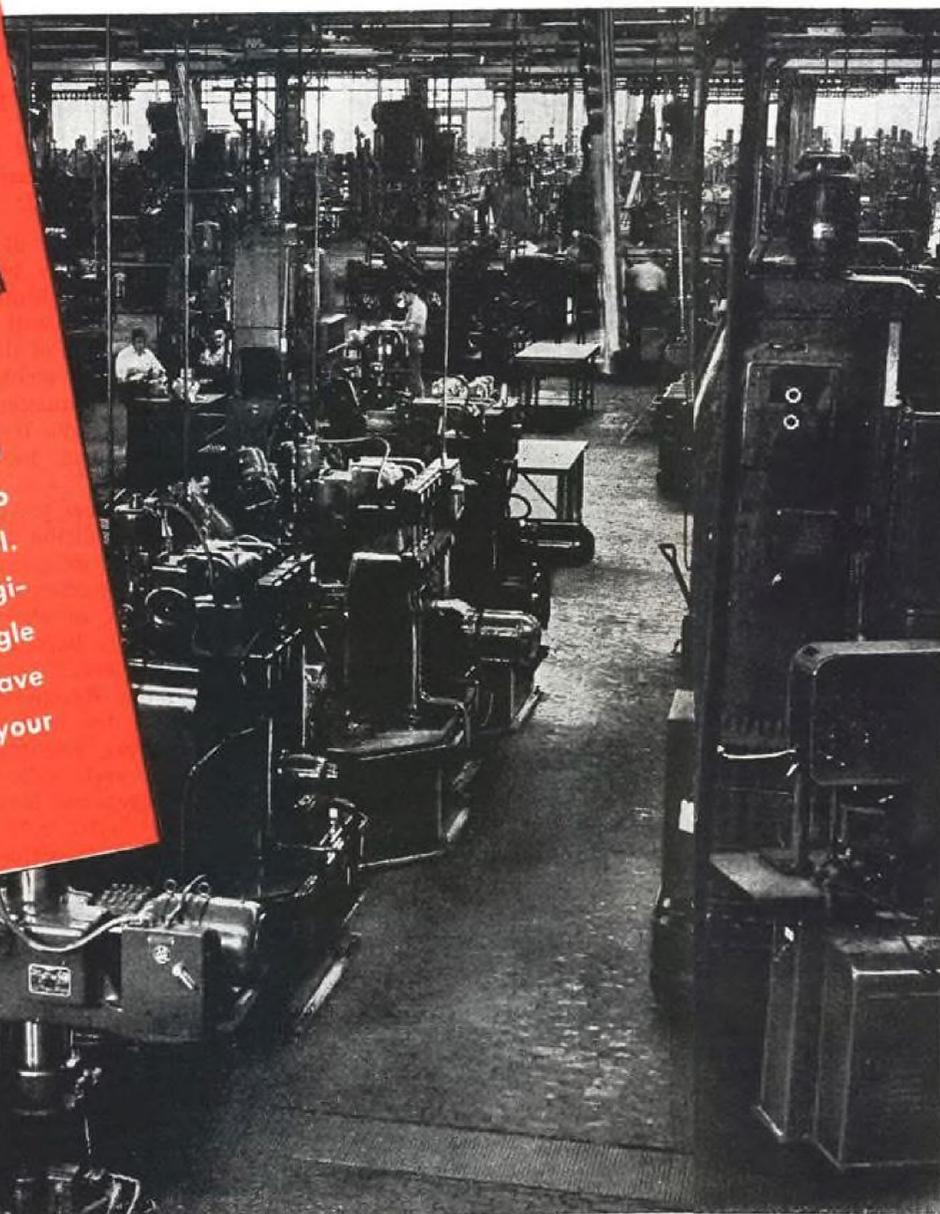
Firestone Tire and Rubber Co. has completed shift from manufacture of Bofors 40-mm. anti-aircraft guns to plane rocket launchers in quantity.

Firestone-built launchers are adaptable to wings of Lockheed P-38 Lightnings, Bell P-39 Airacobras, Douglas A-20 Havoc and North American A-36 Invaders (P-51). Firestone is fabricating the launchers from magnesium and plastic-hardened paper.

RUST-PROOFING



FREE! This 36-page booklet tells how Texaco Rustproof Compound prevents rust, where and how to apply it, and why it is so successful. Every industrial executive and engineer should have a copy. A single suggestion in this booklet may save thousands of dollars. Send for your copy today!



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IMPORTANT in any plan for smooth, speedy reconversion to peacetime production is protection of unused equipment against destructive RUST. Government-owned equipment, according to official specifications, must be rustproofed with minimum delay after "shut-down". And if the equipment is your own, you will likewise wish to protect it fully until it is disposed of or put back in use.

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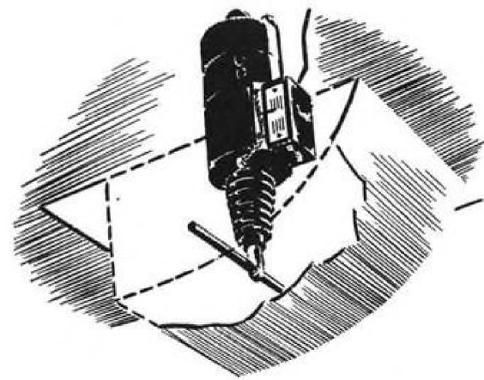
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These are but a few examples of how AiResearch's specialized experience will benefit peacetime flying. Perhaps you can profit by this warborn experience.

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"Where Controlled Air Does The Job"—Automatic Exit Flap Control Systems • Temperature Control Systems • Supercharger Aftercooling Systems • Engine Air Intercooling Systems • Cabin Pressure Regulating Systems • Engine Oil Cooling Systems

ATSC Trains 3,000 For Termination Job

Organization gets priority on selection of officers outside of combat zone.

Air Technical Service Command now has first priority on officers for contract settlement and reconversion to civilian production, wherever they may be located out of the combat zones.

Maj. Gen. Bennett E. Meyers, deputy director of ATSC, in disclosing this situation, said the choice falls on men who in civilian life were successful bankers and corporation executives, recognized lawyers, property managers and production experts. Once trained, they work in teams composed of a contractor officer, a negotiator, property disposal officer, legal officer and an accounting officer.



► **3,000 Being Trained**—ATSC is training more than 3,000 officers to handle the details of contract termination.

General Meyers said ATSC not only was training men to handle the Army's part in the termination job, but also was offering to manufacturers all the information at their disposal to help in winding up contracts on the producer's end.

Manufacturers are being invited to attend meetings in the six procurement districts to see demonstrated steps in preparation for termination and requirements which must be met. Sessions vary from one-day meetings to courses that last over several days.

1st York Completed At Toronto Plant

The first York, transport version of the Lancaster bomber, has been completed at Victory Aircraft, Ltd., Toronto, government-owned factory making Lancaster bombers and Lancaster mail planes for Trans-Canada Air Lines. The York was to have been built in quantity, but after the first plane was started the contract was cancelled and the Canadian government decided to build Douglas DC-4 transports instead at Canadian Vickers, Ltd., Montreal.

► **Fuselage Wider**—The York differs primarily from the Lancaster

in its fuselage, which is wider than the Lancaster, and is nearly as long, high and wide as a box car. It can carry 40 passengers comfortably and cargo, including tanks.

The plane, built at Toronto, has a range of about 3,000 miles, is powered with four Rolls-Royce 1,250 hp. engines, a wing spread of 102 feet, over-all length of 75 feet and weighs 31 tons. It has a landing speed of 100 mph. and top speed of around 300 miles.

Vickers Wage Plan Held Up as Model

Indorsed by Canadian Commons War Expenditures Committee which recommends other plants follow incentive program.

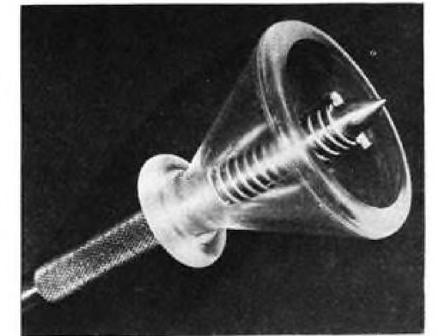
The wage incentive plan used by Canadian Vickers aircraft division at its Montreal plant has been endorsed by the Canadian House of Commons War Expenditures Committee. The committee has recommended that other Canadian aircraft manufacturers study and use the plan wherever practicable.

Under the Vickers wage incentive plan, each task is time-studied and the normal rate in hours or minutes per unit set. For every saving over normal, the savings in time are shared between the company and the employee on a 50-50 basis. The war expenditures committee reports the plan has resulted in increased production and substantially lower cost per plane. "Not only is production speeded up," the committee reported, "but the savings greatly exceed the cost of the bonus."

► **Jobs Time-Studied**—The Vickers plan differs from the most successful American plan—that of the Grumman company—in that individual jobs are time-studied for value. Under the Grumman plan, studies are eliminated and incentive pay is given on a plant-wide basis. Every employee, from janitor to junior executive, is paid a bonus on half of all poundage produced over a fixed rate of .48 pound per worker per hour. This totaled 25 percent of wages last year.

New Symbol System

A coordinated system of indicating electrical circuits and equipment on engineering drawings has been worked out by the American Standards Association and is now available to industries.



NEW PLEXIGLAS USE:

The latest application of plexiglas, the Rohm & Haas plastic used on bomber noses and other aircraft enclosures, is a bell cap center punch, used in aircraft production both for centering holes in template work and for providing a drill point at the necessary 90 degree angle to the surface. Developed by Curtiss-Wright, this bell cap is made of transparent Plexiglas, permitting the operator to position the point visually.

► **Ends Confusion**—Graphical symbols have been worked into a consistent set that will eliminate confusion existing where one symbol meant two different pieces of equipment and sometimes two different symbols meant the same thing.

Copies of the Coordination of Electrical Graphical Symbols, Z32.11-1944, may be obtained for 10 cents each from the American Standards Association, 29 West 39th street, New York 18, N. Y.

Canadian Fairchild Considers New Line

Fairchild Aircraft, Ltd., of Montreal, which will complete its present contract for Curtiss Helldivers next March, and faced with the prospect "that there may be no further military contracts available to the company," is studying the possibility of temporarily entering some other type of manufacture to maintain the organization.

► **First Canadian Announcement**—H. M. Pasmore, president of the Canadian Fairchild Company, made the first announcement of any Canadian aircraft company of attempts to determine some other phase of activity to keep production facilities and organization intact "until the situation with respect to the manufacture of aircraft has become clarified."

RUSSIA

Threat . . . or Promise?

WHEN this war is ended, two nations—the United States and Russia—will possess the bulk of the world's military and industrial might.

Whether this new situation will hold seeds of catastrophe or of unprecedented opportunity will be determined by policies . . . still to be formulated.

If this concentration of power leads to a bitter struggle for supremacy, then the world will be turned into a giant munitions factory.

If it is used cooperatively to maintain order, then, I believe, the stage is set for a long era of prosperity . . . and peace.

It is time that Americans, whether of the Right or the Left, face this basic issue squarely and open-mindedly.

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No group in this country has a greater stake than have business and industry in seeing that a satisfactory Russian-American understanding is reached.

Without such an understanding there can be no reasonable hope for more than a temporary and insignificant reduction of our crushing wartime tax burden. If the threat of a clash between these two giants impends, neither bankers nor governments will run the risk of lending on a scale adequate to maintain international trade at levels necessary for our future prosperity. Potential international customers, instead of buying freely in open world markets, will be forced—as during the dangerous period introduced by Hitler in the early 1930's—into the trading camp of whichever power they fear most.

If, however, Moscow and Washington will agree on cooperative plans for maintaining the peace, American business will enjoy enormous new trade opportunities after the war.

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Russia, during the three and one-half years since it was attacked by Hitler, has conclusively proved to a doubting world that it is a top-flight military power.

Soviet railroads did not break down under the strain of war.

Regions accounting for nearly 70 per cent of Stalin's key industries were engulfed by the invading Nazis, but before they fell, Soviet management engineers performed a near miracle by transplanting entire industries a thousand miles to the Urals with the loss of as little as four months' production in many cases.

Though American planes, trucks, and medical supplies have been welcomed by Moscow, fairness demands the admission that more than 98 per cent of American production has not gone to the Russian front.

Russian planning and Russian equipment won the victories of Leningrad, Stalingrad, and the Caucasus.

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But these measures of Soviet military strength—indicative as they are of an unsuspected economic development—fail to picture in adequate detail the startling potential of the Russian market after the war.

Russia, for instance, has two and one-half times the area of the United States.

It has a population of nearly 200,000,000, and this is increasing at the rate of 2,500,000 a year.

And statistics just released show that Russia has three times as many youngsters under 16 as has the United States. This is a measure both of war potential and of a vast commercial market.

And remember that in no part of the world before the war was per capita production rising as rapidly as in the Soviet Union.

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German armies occupied a region in Russia roughly equivalent to the territory in the United States north of Richmond, Virginia, and east of the Mississippi.

This huge area—with its counterparts of Pittsburgh, Buffalo, and Bridgeport; of Illinois corn fields, New York dairy farms, and Maine potato harvests—was twice subjected to the most withering destruction; first by the Russians themselves when they retreated before the Germans, and then by the Germans when they withdrew before the victorious Russians.

As a result, 30,000,000 people are in urgent need of complete reoutfitting. They need houses and shoe laces, trolley cars and baby carriages, tractors and livestock, hydroelectric plants and electric light bulbs.

Many of these needs will be met at home. It is doubtful, for instance, if Moscow will import cooking utensils or sewing machines, for many of Russia's huge war factories can quickly be converted to peacetime production of such consumer goods.

But for the rebuilding and expansion of her industries Russia looks to the United States for equipment.

Soviet representatives already are in this country with authority to negotiate for technical men and the equipment necessary to rebuild the great Donbas coal mines according to the most modern American methods.

It is important to remember that Russia's whole iron and steel industry, its non-ferrous mining and processing, some of its chemical production, much of its coke roasting and gas recovery, practically its entire automobile and tractor industry, and the largest of its hydroelectric plants, are based on American machinery and processes.

It is known among manufacturers that Russia recently has asked for bids on shipbuilding equipment, construction and roadbuilding machinery, alloy steels, textile machines, plastics, and a long list of rail, air, and water transport supplies.

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The Soviet Union, however, has more than a rehabilitation job on its drawing boards.

The first Five-Year Plan, which, as we all remember, was completed ahead of time in 1932, was devoted almost exclusively to heavy industry. Russia set out to build for itself the machines and the factories which, in later years, could turn out, at home, modern equipment for a vast range of light industries.

Stalin, when he inaugurated the second of his famous Five-Year Plans, promised that before it was completed Soviet factories would begin to turn out a flow of con-

sumer goods—ready-made dresses, canned foods, soap, cosmetics, shoes, kitchenware, automobiles, telephones, and modern houses.

But, by 1935, Moscow realized that Russia could not afford to enjoy such luxuries in the face of growing political tension in Europe. So, when the third Five-Year Plan was launched, there was no fanfare. Russians continued to wear their old clothes, to eat whatever simple food was available, and began grimly to build the industries which ultimately produced enough tanks, planes, and guns to turn the tide of battle at Stalingrad.

It is characteristic of Moscow that even before the last battles with the Nazis are over, Russia is planning to pick up its Five-Year Plans where the war had interrupted them.

Invitations to participate in a permanent exhibition in Moscow already have been mailed to American manufacturers. Soviet officials want their public to see samples of our new machine tools, aluminum and alloy products, oil-drilling machinery, bulldozers, and prefabricated kitchen equipment. Russia already is projecting specific plans to resume the job (1) of making the country an industrial giant comparable to the United States, and (2) of making life more pleasant for a long-suffering people.

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What is the measure of this postwar market in the Soviet Union?

Some estimates place the total quantity of goods which Russia might take from the United States during the first two or three years after the war as high as \$5,000,000,000 a year. Then, as Russian industry is restored, imports from the United States might taper off perhaps to \$2,000,000,000 a year.

Actually, these estimates are far too optimistic, unless the United States is prepared (1) to help Russia pay by buying vast quantities of Soviet raw materials, and (2) to provide large credits to handle the purchases during the first few years of rehabilitation.

The relations of American exporters with Russia during the period covered by the three Five-Year Plans have been eminently satisfactory. Moscow has met all of its obligations punctually; fifteen years of experience have reduced contract forms to the point where they cause a minimum of misunderstanding between the Russian representatives and the American producers; individual American companies with extensive prewar experience in handling Soviet business already are offering large credits on initial postwar orders though these may yet be replaced by large government credits at lower interest rates.

But the volume of trade with Russia after the war hinges upon Moscow's ability to pay. Never before the war did the United States buy more than \$30,000,000 of goods a year from Russia. As late as 1938, Soviet exports to this country amounted to as little as \$23,500,000, far less than enough to pay even the service charges on the credits which would have to be extended in connection with exports of several billion dollars a year. Only South Africa produces more new gold each year than the Soviet Union. But the United States does not want gold; more of it would only complicate the problem of controlling prices here.

If the United States, however, is to achieve, after the war, the high level of national income which is necessary (1) to keep our expanded factories in operation, and (2) to service the national debt, it might absorb from \$90,000,000 to \$100,000,000 a year of the kind of goods bought from Russia before the war—furs, timber,

manganese, chromium, and handicrafts. But unless this volume of purchases from Russia can be boosted by another \$50,000,000 annually, credits of the size necessary to fill immediate Russian needs could not be serviced without large supplemental importations of undesirable gold.

The nub of the situation is that Russia offers an extraordinary potential market particularly for our heavy industries which have grown so enormously during the war. But if this sales outlet is to materialize, then the United States must find a way to import from Russia (or from Russia's debtors if any) from ten to twenty times as much as we did before the war. Instead of merely going after the export business, American businessmen must explore with the Russians the possibility of buying bigger supplies of Soviet products.

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But more than the Russian market itself hinges upon sound cooperative action by the world's two leading military-industrial nations.

If trade between them is held to a minimum and if relations are strained, the flow of trade all over the world will be adversely affected.

Europe, long this country's biggest export outlet, certainly will never take the bold steps necessary to reconstitute its economy on a peacetime basis if Russia and the United States drift into a race for military supremacy.

The Balkan states, which may be industrialized by Moscow in order to reduce their dependence on Germany, and the Arab world with its huge need for transportation, irrigation, and sanitation, will not dare accept American credits or make big contracts with American engineers if Moscow frowns on the deals.

And refusal of Russia and the United States to work cooperatively to maintain the peace would kill, in their present embryonic stage, all dreams of a vast industrialization program for China.

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The opportunity to make a major change in the trade map of the world and at the same time to achieve a sharp rise in our own standard of living is before us.

It demands of American business leaders the kind of boldness and imagination that their predecessors displayed when they pioneered this country's unknown West.

It demands realistic action by men who know that the solution to this country's real foreign trade problem under today's conditions lies in boosting imports not exports alone . . . men who are not afraid of being paid for what they sell.

It calls for leaders who will approach Moscow and other major customers at once with constructive plans that would parallel in scope those on which this country is waging war . . . leaders who will make it clear at the outset that this bid for cooperative action emphatically demands that each nation shall have complete freedom to determine its internal political and economic organization without interference from the other.

It is this caliber of leadership upon which our future hinges.



President McGraw-Hill Publishing Company, Inc.

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MAJOR C. C. MOSELEY, PRES. SINCE 1929

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AVIATION CAREER

Never was it more opportune for you to get into Aviation! Its future is clear, definite, assured. Military air transport lines have proven the airplane to be an indispensable factor. AMERICA IS GOING TO FLY—for pleasure, for business, for commerce. Prepare yourself now for your career in post-war aviation.

"CAL-AERO" has purchased GRAND CENTRAL AIR TERMINAL in GLENDALE, CALIFORNIA, the home of Curtiss-Wright Technical Institute. The Curtiss-Wright Corporation originally acquired this airport, in 1929 at a cost of almost \$3,000,000.

In preparation for the great post-war activity in Aviation, the name of this school has been changed to CAL-AERO TECHNICAL INSTITUTE.—simplifying and coordinating relative operations. Other than in name, there will be no change in the school.—SAME MANAGEMENT—SAME LOCATION—SAME PERSONNEL—SAME FINE SPECIALIZED TRAINING in Aeronautical Engineering and Master Aviation Mechanics, incorporating all of the latest developments and methods to insure a thorough foundation for your future career in Aviation. Flight training is restricted to Army Air Force Cadets for the duration.

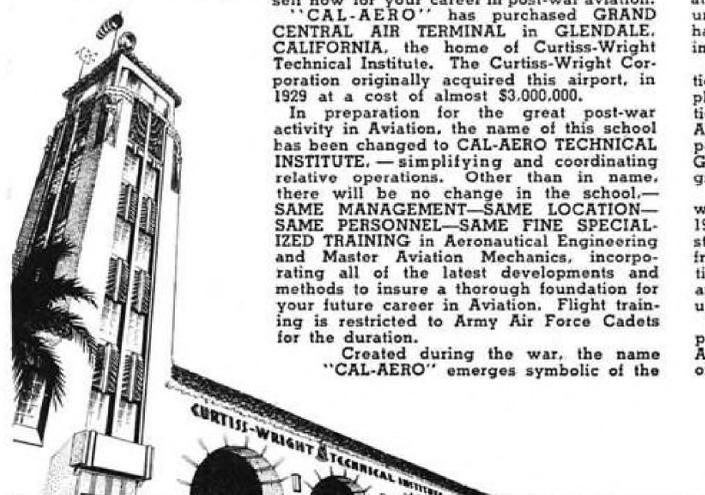
Created during the war, the name "CAL-AERO" emerges symbolic of the

highest standards in Aviation training. With an unmatched and unparalleled record of efficiency and safety in training more than 20,000 pilots for the Army Air Forces, together with this school's record of training 7,500 ground-crew men, at the same time, graduating thousands of civilians for the production front; these schools under the personal direction of Major C. C. Moseley since 1929, have been highly honored by citations for distinguished service in training men for the Army Air Forces.

In view of the co-related activities of these two schools in Aviation, with their honored record of war effort, it is but natural in planning, for the post-war period, that the technical phase of Aviation training should come under the distinguished name of "CAL-AERO". It will continue as heretofore, since 1929, under the personal direction of Major C. C. Moseley, on its own airport,—Grand Central Air Terminal in the heart of Southern California's giant aircraft industry.

As a result, CAL-AERO TECHNICAL INSTITUTE, with its honored war record and continuous service of training civilian students since 1929, emerges larger, stronger and finer than ever before. Civilian students have continued to enroll into this school during the war from many states and foreign nations, despite the difficulties of war-time travel. Returning service men, anxious to fit themselves for an outstanding place in post-war Aviation, likewise are enrolling upon discharge.

And so, as this distinguished old school of Aeronautics enters the post-war era, it does so with a distinguished new name,—CAL-AERO TECHNICAL INSTITUTE—a name that, in the supreme test of war has come to signify a new standard in Aviation training.



THIS TOWER OVERLOOKS AVIATION'S MOST DISTINGUISHED SCHOOL OF AERONAUTICS



FORMERLY CURTISS-WRIGHT TECHNICAL INSTITUTE

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1230 AIRWAY, GLENDALE 1, CALIFORNIA
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ON OUR OWN AIRPORT - IN THE HEART OF THE AIRCRAFT INDUSTRY

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FINANCIAL

Record Earnings of Airlines Not Likely to Affect Dividends

Return of more planes to industry has given sharp fillip to incomes but bulk of funds is expected to be ploughed back into business in view of great need for capital.

Increased dividends will hardly follow mounting airline earnings this year, although profits during the current second half are running at record levels and promise to bring the final results for 1944 well above previous years. Chiefly responsible for this showing is the return of more planes to the industry which has imparted tremendous leverage to airline earnings.

Nevertheless, airline stockholders will see but a small fraction of their current profits in the form of immediate dividends. The great bulk of earnings will continue to be "ploughed" back and re-employed in the industry. The need for additional capital appears almost unsatiated. The proposed recapitalization of American Airlines calling for upwards of \$20,000,000 in potential new funds is but another reminder of capital demands of the group.

Capital Appreciation—The expanding and growth characteristics of the airlines will hardly permit any liberal dividend disbursements over the near term. But this is expected, as serious investors never looked to airline securities as a source of stable, assured dividend income. The airlines have always held forth their greatest attraction in the form of capital appreciation. The fact also remains that the retention of earnings is constantly building up the equity of the shareholders.

Among the domestic carriers, American has the most consistent dividend record. Starting in 1940, \$1.00 was paid on the common. This rate was increased to \$1.50 in each of the following years. Thus far no action for 1944 has been taken. Last year, the carrier declared its annual dividend on Dec. 1 to stockholders of record on Dec. 10 and payable on Dec. 22. It is believed at least the same amount will be paid this year. How small even the most "liberal"

disbursements are in relation to earnings is indicated by the \$8.23 per common share earnings reported by American for last year.

United—United Air Lines first paid 20 cents per share in 1936 and then waited for earnings to permit another disbursement in 1943—this time 50 cents a share. Early this year, another 50 cents a share was paid. Observers look for another payment of at least the same amount before the year is over. Earnings this year may run between \$4.50 and \$4.75 per share compared with \$2.13 for 1943.

Braniff is a newcomer to the airline dividend paying ranks, having started with 15 cents a share late last year. Thus far in 1944, three quarterly disbursements of the same amount have been paid. As this appears, it is likely Braniff will have declared the final 15 cent dividend for the year, payable to stockholders Nov. 15.

Northwest—Northwest first paid 50 cents a share on its old stock in 1937. Being on a fiscal year basis ending on June 30, the carrier has evidently declared its annual dividend for 1944 when it paid 50 cents a share Sept. 1. Similar dividends were paid in 1942 and 1943. Earnings for the year ended June 30, 1944, aggregated \$1.45 a share or about three times the amount of the indicated annual dividend.

Perhaps the most interesting dividend payer is Delta Air Corp. This carrier has a relatively small public participation in its securities and has no broad market. The record discloses, however, that dividends were first paid in 1938 and, with but one interruption, were continued every year since. The equivalent of 25 cents a share on the present stock was paid annually for the three-year period ended June 30, 1940. Deficit operations for 1941 caused a lapse in

that year. Dividends were resumed in 1942, this time at 50 cents a share and have continued through 1944.

Pan American—Pan American Airways has also followed the policy of making token dividend payments. The first dividend checks were mailed in 1936 when 80 cents a share was paid on the old common. In 1937, the rate declined to 62½ cents a share, to be boosted to \$1.00 for 1938. There were no payments in 1939 and 1940, although earnings were present. The \$1.00 annual rate was resumed in 1941 and continued through 1943. It is expected that the company will act on Nov. 23 and declare a similar disbursement to stockholders of record Dec. 3, payable Dec. 10. These were the dates followed in 1943.

Eastern Air Lines, which has one of the best earnings record in the industry, has failed to pay a single dividend since its present incorporation early in 1938. From the very outset, the carrier embarked on the policy of retaining all earnings. The effect on the company's financial structure becomes evident when it is realized that working capital has increased from about \$5,000,000 at the end of 1940 to approximately \$13,700,000 as of the last year-end.

TWA—Transcontinental & Western Air paid 25 cents a share in 1936 and has not paid anything since. An erratic earnings record is the explanation in this instance. Then, too, with the Hughes Tool Co. owning about 45 percent of the stock, any dividend policy would most likely be influenced by the tax problems faced by the principal stockholder. It is unlikely that the Hughes interests are in any need of dividends from TWA nor are they inclined to accept taxable income at this time with excess profits taxes at high levels.

Western Air Lines, when it held virtually the bulk of the nation's early airlines under its control, paid a cash dividend of 45 cents a share in 1929. In 1936, an additional 25 cents a share was paid. Since that time, Western has shown no indication of resuming any dividend payments, retaining all available earnings.

With the exception of Continental Air Lines which paid 15 cents a share early this year, none of the other air carriers not here indicated, is likely to disburse any dividends to stockholders this year.

TRANSPORT

Airlines Study Proposal to Divert Planes from C-47 Assembly Line

Program suggested by Douglas and requiring Army sanction, providing companies approve, is expected to affect enough aircraft to meet CAB's estimate for present operations.

By MERLIN MICKEL

Careful scrutiny is being given by the airlines to a proposal by Douglas Aircraft Co. calculated to avoid reconversion headaches by diverting several hundred new planes to airline use directly from the Douglas C-47 assembly line, and increase the number of planes in service substantially without overburdening the lines financially.

How many planes might be made available by the plan has not been indicated, but it may be assumed it would affect enough additional aircraft to meet the Civil Aeronautics Board's estimate that about 450 planes are needed by the airlines in their present operation.

This is 150 more than the present 300 ceiling, reached recently with the release of 26 by the Army.

► **Requires Army OK** — The plan proposed by Douglas and under study by the airlines would require Army sanction, but likely will not be put up to the Army unless the airlines approve it.

Approval by the airlines, which constantly face delay and red tape in reconversion of the planes coming back from the military, probably will hinge on what the plan would cost them.

Cost is a big item in reconversion, but difficulty of obtaining labor and materials is more of a stumbling block. Nevertheless, the

airlines would like to know more about the price of planes under the Douglas proposal, and the method of assuring delivery.

► **Manpower Factor**—A factor in the Douglas plan is the loss of manpower. When a cutback occurs, employees leave in large numbers. This creates a shortage of manhours available for reconversion. Condition of the planes turned back lacks uniformity. Materials—particularly radio—are hard to procure. Army approval must be obtained before workers can be diverted.

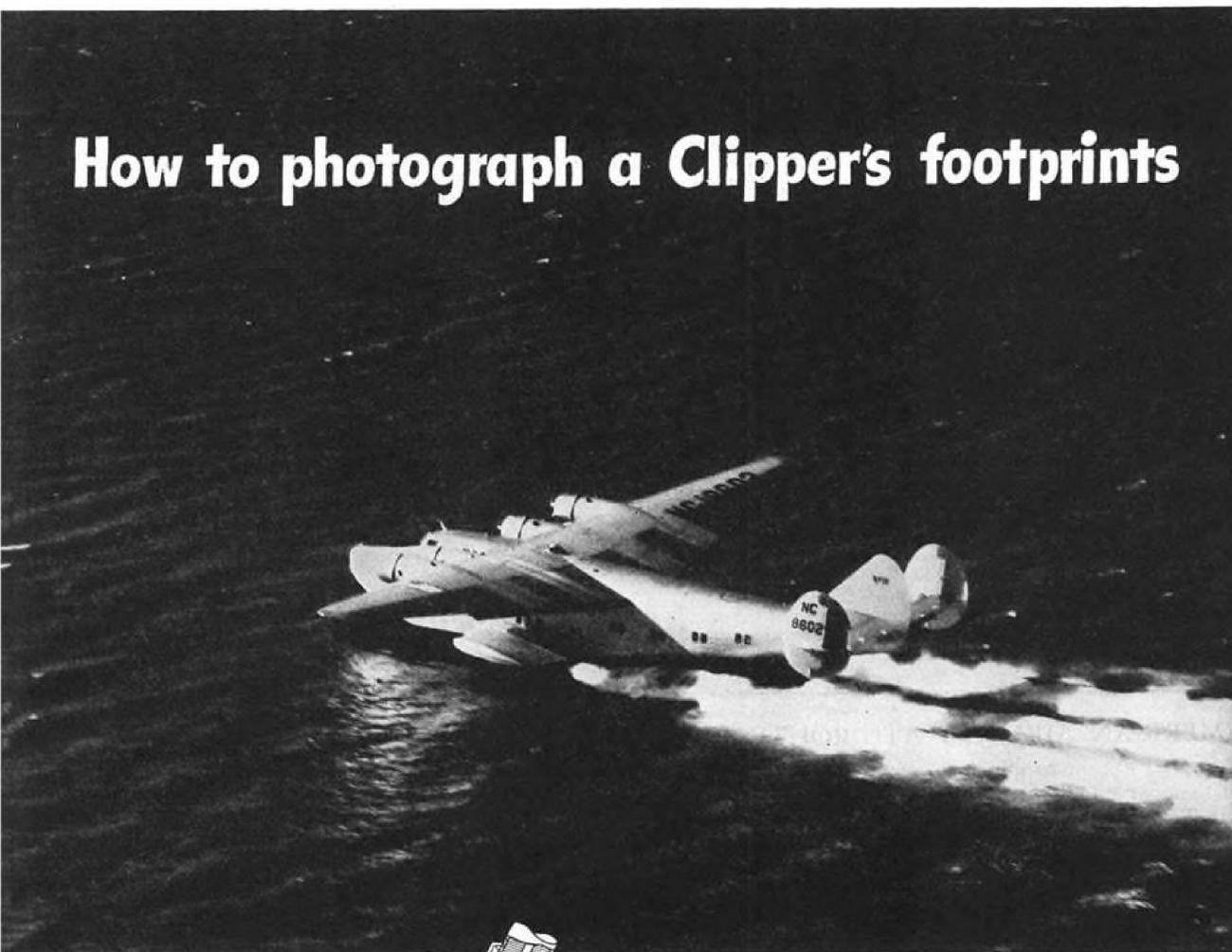
These and other considerations led Douglas to suggest that it might be possible to turn out new planes directly, thus avoiding future reconversion complications. Extensive factory changes would not be necessary. The ships destined for commercial use simply would be diverted at one point in the assembly line, and from then on equipped for airline operation.

► **Leasing Plan Proposed**—Suggestion has been made that these new planes be leased to the operators by Douglas, who would retain title. There is another possibility that the government might hold the title and dispose of the planes as surplus property. Army now owns the material that would go into them. But whether the airlines would be leasing from the government or from Douglas, the set-up probably would be substantially the same.

What the ships would cost has not been determined, although one report is that the leasing figure would be \$25,000 a year per plane for three years. Douglas has asked airline reaction to this arrangement. This total of \$75,000 probably would not be higher than the ultimate conversion cost per plane. In addition, the lines would be operating new planes.

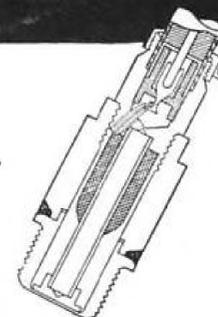
► **Avoids Capital Funds Tie-up**—Advantages of the leasing arrangement, its proponents say, is that it would permit the lines to pay for use of the planes out of operating income, thus avoiding a tie-up of capital funds intended for the purchase of new, larger post-war types when they become available.

In the meantime, most of the last batch of 26 turned back by the Army have been delivered to the airlines to whom they were allocated. That is only the first step in a long chain, however, before they can be placed in commercial use, and the airlines are deeply concerned with how long the reconversion may require.

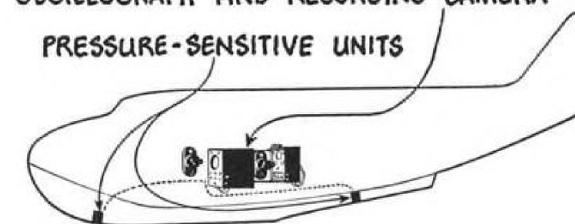


How to photograph a Clipper's footprints

SENSITIVE ALLOY ROD IN CENTER TRANSMITS, ELECTRICALLY, SLIGHTEST VARIATION IN PRESSURE



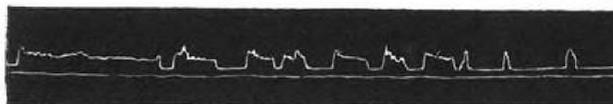
OSCILLOGRAPH AND RECORDING CAMERA PRESSURE-SENSITIVE UNITS



1. This is a "pressure-sensitive unit," a Standard of California development in petrolelectronics (use of electronics in petroleum research). When Pan American World Airways wanted to study the effect of the pounding of take-offs and landings on the hulls of their Clippers they asked if this device could be used.

2. We thought so. It was an unusual job for petroleum engineers, but Standard's research staff—the California Research Corporation—is often consulted by airlines. For this job, two pressure-sensitive units were attached along the keel line of a Clipper hull. These were connected to an oscillograph and a recording camera.

PART OF PHOTOGRAPHIC RECORD OF HULL PRESSURES

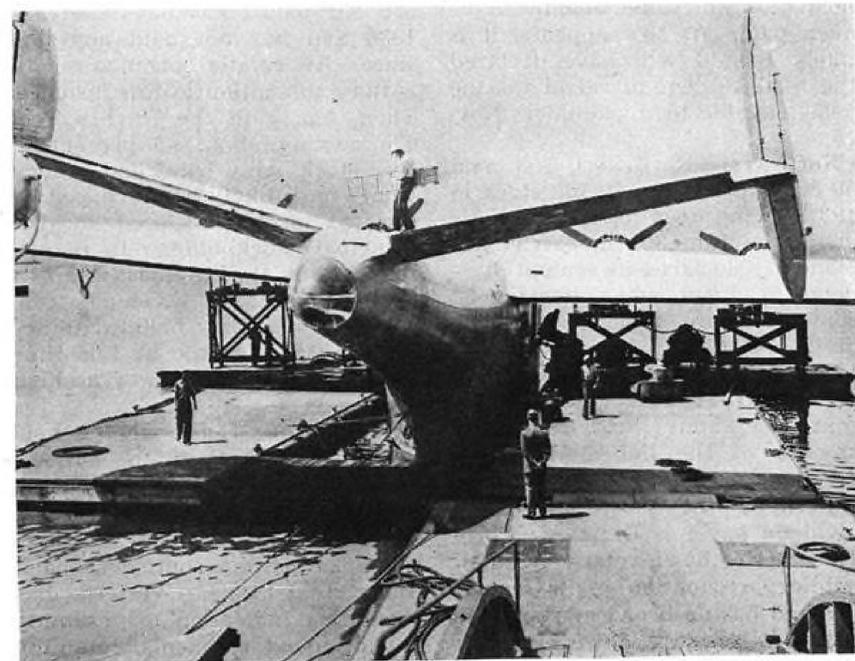


3. Here are the footprints of a Clipper during take-off, time of greatest strain on flying boat hulls. The oscillograph record shows little water pressure on the forward hull area. But the jagged upper track reveals that greater pressures battered the hull farther aft.

4. These tests that reassured Pan American as to the strength of their Clipper hulls emphasize again that Standard leadership in aviation research rests upon fundamental knowledge of all phases of aircraft operation. This thorough understanding of aviation's needs enables us to produce even better Standard Aviation Gasolines and Lubricants for Pan American, and flyers everywhere.

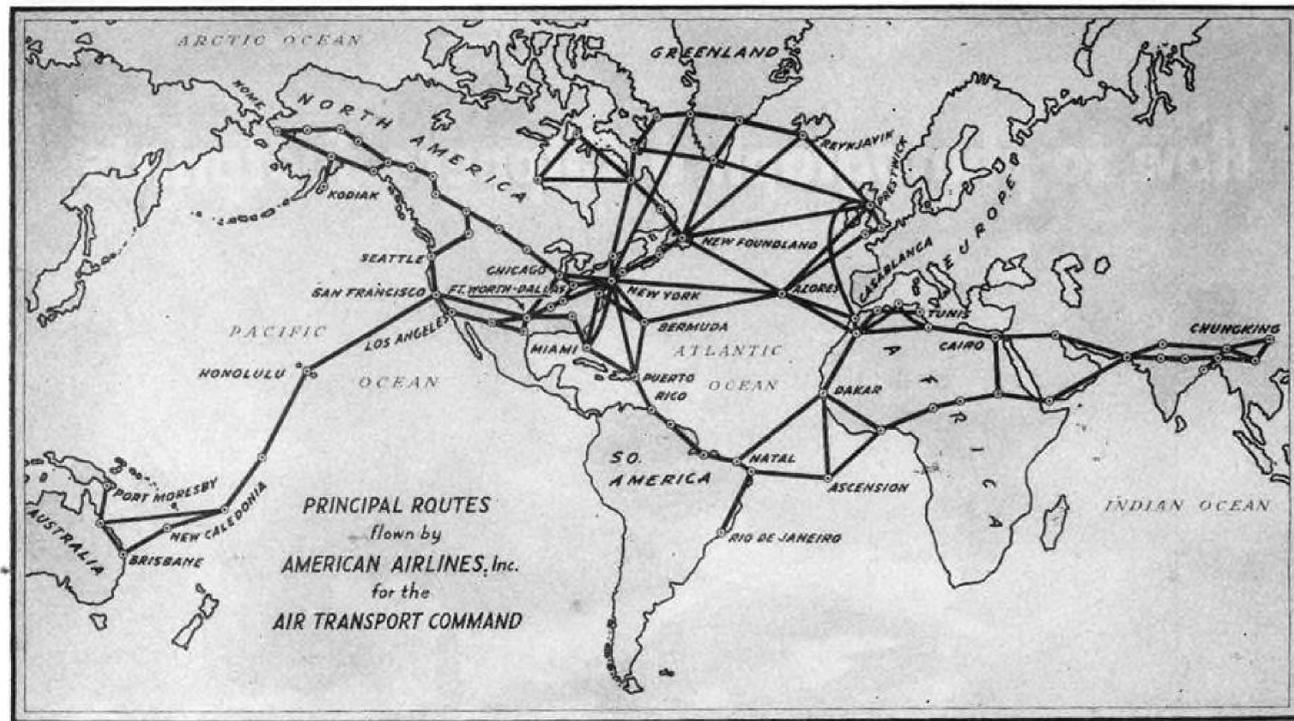


STANDARD OF CALIFORNIA



SPECIAL DOCK SERVES MARS:

Navy has devised a special U-shaped seaplane dock at its Alameda, Calif., Naval Air Station to serve the Martin Mars. Consisting of a concrete deck over standard pontoons, the dock can be raised or lowered by adjusting ballast in the pontoons. Simplified cargo handling and servicing of the Mars, shown here in its new berth, makes possible a five-day turn around operation between Alameda and Pearl Harbor.



AMERICAN AIRLINES' ATC ROUTES:

Map tells extent to which domestic airlines have aided the war effort through their contract work for the Air Transport Command. Drawn by American Air-

lines, it shows routes of 33 countries on six continents. ATC has canceled its domestic contracts, but overseas contracts with domestic lines continue.

ATC, NATS Tackle Civilian Fare Job

Seek to decide reasonable charge on airlines for non-military passengers.

Officers of the Air Transport Command and the Naval Air Transport service are working on problems raised by President Roosevelt's Executive Order making the planes of the two military airlines available to civilian passengers in certain instances. Fixing fares for routes never before operated commercially, and the establishment of express and cargo tariffs are the main questions to be solved.

Under terms of the Executive Order, passengers carried by the Army and Navy must be charged fares not lower than current commercial rates. Inasmuch as commercial fares vary widely, depending upon the route as flown, ATC and NATS, whose lines are frequently not those of commercial carrier, are experiencing some difficulty in establishing reasonable charges as required by the order. Fares based on plane mileage flown will probably be evolved.

► **Cargo Included**—The President provided also for carriage of non-military cargo by ATC and NATS.

In this field, current commercial rates furnish little or no guidance. Commercial tariffs, based on commodity classification systems, make no provision for air freight as distinct from air cargo. Presumably, the military services will set tariffs on a pound-mile basis regardless of classification.

► **Stopgap**—Alexander B. Royce, chairman of the Airlines Committee for U. S. Air Policy, called the move a "constructive, temporary step" designed as a stopgap until U. S. air carriers can be certificated by CAB. Existing international operators are vitally concerned with the entry of ATC and NATS into commercial operations, but it is certain that the military lines are not competitive factors.

U. S. Transport Policy

National Federation of Shipping, presently seeking entry in the air field for steamship lines, has published a new booklet entitled *American Transportation Policy* which traces national transportation legislation and purports to show that the Civil Aeronautics Board is not following the intent of Congress in refusing certificates to steamship companies.

Author of the pamphlet is T. W. Van Metre, professor of transpor-

tation at Columbia University, who has served as consultant and expert for the United States Shipping Board and the United States War Shipping Administration. The booklet has been given wide distribution by the National Federation of Shipping.

Delay Asked on AA's Bid for Export

Question of American Airlines' proposed acquisition of control of American Export Airlines will be deferred pending the decision of Civil Aeronautics Board in the North Atlantic case if the Board adopts recommendations of its examiners. In a report issued last week, CAB Examiners Thomas L. Wrenn and Ferdinand D. Moran recommended the Board withhold action on the acquisition until it determines whether Export's temporary certificates shall be made permanent.

The examiners found the proposed sale of a majority interest to American Airlines is a suitable form of compliance with the Board's order that American Export Airlines divest itself of steamship control. They suggest, however, that the purchase price of \$3,000,000 is unreasonably high for a temporary certificate.

Frankly, we expect to learn a lot at the N A T A Convention . . . and are looking forward with interest to hearing your ideas and plans for the future of our industry. Also, we hope to make a worthwhile contribution.

For 11 years we have been a source of supply for Aircraft Dealers. That's

given us a lot of information which we'll be pleased to pass on. We're anxious to share our experience with you—to add what we have learned to your fund of knowledge—to consult with you on your own specific problems, and to submit workable, profit-making suggestions.

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You've still got to use your ingenuity and that of your staff to find even more ways to *use less paper*.

All material made of paper and paperboard still must be cut to the bone. Eliminate whatever you can until complete and final victory ends the paper pinch.

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WAR POWER**



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This advertisement contributed by this publication and prepared by the War Advertising Council in cooperation with the War Production Board and the Office of War Information.

Hearings Open on AA Application For San Francisco-L. A. Route

Inter-company agreements apparently abandoned as United, TWA and Western Air Lines seek to keep fourth line from sharing lucrative West Coast business.

Any inter-company "understandings" that may have existed in previous years went into limbo last week as United, TWA and Western Air Lines strove to keep American from becoming a fourth to share the San Francisco-Los Angeles route.

American Airlines was the first of 13 new route and extension applicants to be called by Civil Aeronautics Board Examiners Francis W. Brown and F. Merritt Ruhlen in the opening of West Coast hearings in San Francisco.

► **Compared with Boston Case**—The hearing opened with the belief prevalent, but unspoken in testimony, that American's case is a sequel to the failure of other domestic lines to abide by an understanding that they would preserve American's Boston monopoly as long as American stayed out of the Los Angeles-San Francisco picture.

However, American cited the precedent of the Boston case and admission of other operators to the New England area as one of several reasons why its Los Angeles-San Francisco application, proposing six daily round trips during the first year of operation, should be granted.

President A. N. Kemp, C. W. Jacob, secretary, and C. A. Rheinstrom, vice-president of traffic, provided American's testimonial support of the application which was under a constant attack. American claims that the San Francisco-Los Angeles traffic potential will provide all operators with adequate returns.

► **Passenger Forecast**—Jacob multiplied by five the route's present business to estimate that in 1948 the route should produce 313,140 passengers, shared one-third each by United and Western and one-sixth each by TWA and American.

In American's lengthy brief was estimated the cost and revenue for the first year of an extension of its transcontinental service from Los Angeles to San Francisco — expenses totaling \$966,830 and total revenue to \$1,121,084 from passengers, mail and express. Jacob said American expects to increase

the first year's six daily round trips to 30 a day by 1948.

Under cross examination by TWA attorney James K. Crimmins, American's President Kemp, conceded that he would be willing to submit temporarily to the restriction of handling only through business on the coast route as a condition of certification.

However, in support of American's appeal for release of a restriction against handling local passengers between San Diego and Los Angeles—a condition waived for the war's duration—Kemp said "it is stupid for American to be flying with empty seats between San Diego and Los Angeles."

► **Hearings Expedited** — CAB examiners gave every indication of expediting Coast hearings that had been expected to carry through from four to six weeks, and at the opening Brown was confident that all testimony could be taken within two weeks. To that end, he received without testimony and filed for reference use factual briefs of 92 West Coast cities affected by one or more of the applications covering proposed routes in Arizona, California, Oregon and Washington.

To facilitate further the speedy delivery of testimony, and cross examination, the examiners set up the following sequence of hearings in three general groups—

Group 1 . . . Southern California . . . American Airlines—Coast Aviation Corp.—Los Angeles Airways, Inc.—Ryan School of Aeronautics — Transcontinental and Western Air. Group 2 . . . Coast Wide . . . Southwest Airways—West Coast Air Lines, Inc.—Western Airlines, Inc. — United Air Lines, Inc.—Nevada Pacific Airlines, Inc. Group 3 . . . Pacific Northwest . . . Northwest Airlines, Inc.—Roy G. Owen Co.—Albert L. Zimmerly. Western Washington Airways withdrew its Group 3 application and was placed off calendar. Interveners listed were Catalina Air Transport and the U. S. Department of Justice.

SABENA Resumes

The Belgian Airline, SABENA, has resumed a scheduled service between England and the Belgian Congo, according to the Belgian Ministry of Information. At present the operation consists of one round trip monthly, using an 18-passenger Lockheed *Lodestar*.

The route now being flown extends from a terminal in England to Leopoldville, Belgian Congo, via Lisbon, Casablanca, Aloueff, Gao, Lagos, Libreville and Pointe-Noir. Pre-war services operated with greater frequency and on faster schedules from Belgium itself.



TWA's NEW REGIONAL MANAGERS:

Under its new reorganization plan (AVIATION NEWS, Oct. 4), all operating and service functions of TWA's domestic system are incorporated in a Transportation Department, headed by Vice President John A. Collings (above, center). Newly appointed regional general managers who will administer the new department's functions under Collings are (l. to r.), C. E. McColum, central region, Chicago; J. S. Bartles, western region, Los Angeles; W. N. Gorham, midwestern region, Kansas City; and F. W. McGrath, eastern region, New York.

Study Non-Scheduled Carriers' Position

ATA to prepare material for submission to CAB to supplement that offered by airlines.

With announcement of a date for hearing expected momentarily, interest is gaining in the move by Civil Aeronautics Board to clarify the rights and privileges and economic status of non-scheduled air carriers.

Air Transport Association has decided to prepare material for submission to the Board, after approval by its directors, to supplement whatever individual airlines may care to do along the same line. **Job For Sorrell**—The job probably will fall to Dr. Lewis C. Sorrell, ATA's director of research, who made the Association's studies in connection with the local-feeder-pickup investigation by CAB. In that case, however, ATA's observations were submitted after the hearing had closed. Presumably the decision to proceed in the non-schedule study will permit submission of the material before this hearing ends.

Board officials attach much im-

portance to the preliminary work before such a hearing, which in this case will precede consideration of the many pending requests for certificates to authorize non-scheduled service.

Information is sought on need for such service, types of operation, facilities, extent, legal considerations and other factors.

ATA Survey Urges Higher Rate Return

Research official sees urgent need for level above that ordinarily allowed other utilities.

Studies of airline rate-regulation procedure have proved to an Air Transport Association research expert that there is urgent need for a rate of return to the airlines "higher than customarily has been allowed most of the other public utilities."

The conclusion is that of Reginald V. Hobbah, ATA's assistant director of research, who recommends for further study four "areas of research" in rate regulation procedure. His investigation, under direction of ATA's board of directors, sought without suc-

cess for a better alternative to the "fair-return-on-fair-valuation" method of determining the reasonableness of the level of commercial airline rates and their resultant earnings. He found principles of regulation have developed or are developing "counter to the economic welfare and business needs of commercial air transport."

Four Problems—The four matters he would like to see further analyzed are the status of working capital, "investment" in the rate base, status of the rate of return, and need for cost analysis.

It was in connection with the third of these that Hobbah drew his conclusions on need for a higher rate of return for airlines than most other public utilities. Factors indicating this, he says, could be marshalled into an impressive array that any regulatory commission would find it difficult to ignore.

Among these factors are technological change and risk of rapid obsolescence, high operating ratio and inherent financial dangers, expectations of expansion which at first may be more developmental than profitable, need for increasing proportions of borrowed capital, and the fact that freedom from subsidy, in which the public is interested, will develop most rapidly "by permitting the airlines to charge more or less what the traffic will bear, and allowing them to retain a substantial rate of profits if such profits derive from those charges."

Working Capital — Policies of treatment of working capital differ among state and federal commissions to the point of "chaos," Hobbah finds, and "the treatment of air transport's capital, specifically in the use of 'net' working capital, is particularly bad in respect to its disregard of economic and financial considerations." He suggests an early study.

To continue allowing only "invested capital" to enter the rate base for regulation purposes may lead to eventual exclusion of all capital other than owner-equity capital, promising an important issue if borrowed capital ever plays a larger part in commercial air transport's capital structure. To postpone analysis of this, his second point for research, "may well be to lock the barn after the horse is stolen."

Study of cost behavior, Hobbah points out, may develop that proportion of overhead costs in air transport is smaller than in other

public utilities, that air transport therefore tends in lesser degree to be a natural monopoly than do other public utilities, and that the public interest does not require such rigid restrictions on rate of return as in regulation of most other public utilities.

Ship Line Presents Case at Hearing

Question of steamship participation in airline operations was injected into Civil Aeronautics Board's North Atlantic route proceeding near the close of the hearings last week as witnesses for Moore-McCormack Lines, Inc., pressed their company's case for air routes.

The steamship operator presented an estimate that the airplane would divert nearly 90 percent of pre-war passenger traffic from steamship companies, and that the latter would have to be permitted to conduct air operations



National Airlines Signs for DC-4's: George T. Baker (left), president of National Airlines, and Donald W. Douglas, president of Douglas Aircraft, as the former contracted for seven DC-4's at a cost of about \$3,500,000.

if they were to survive as passenger carriers.

"Type 10"—Pan American Airways case had been completed early last week, with much testimony, presumed to relate to the "Type 10" aircraft, being presented in executive session. Other applicants heard in the closing sessions were Trans-Oceanic Airlines, U. S. Midnight Sun Air Lines, and National Airlines.

NAL Plane Orders Total \$8,500,000

Recent contract for seven DC-4's increases post-war commitments to 23 aircraft.

National Airlines' recent \$3,500,000 order for seven DC-4's, added to its \$5,000,000 contract for 16 Curtiss-Wright CW-20's, brings the line's post-war plane commitments to \$8,500,000 for 23 new planes.

At the same time, it raises to 62 the number of DC-4's for which the airlines have contracted with Douglas Aircraft Co., plus the undetermined number for which Eastern is negotiating, believed to be eight on firm contract and a like number on first refusal basis.

Plan DC-4 Operations—National already is making plans for type of operations to which its DC-4's will be assigned. These include a great circle route between Miami and New York, 227 miles shorter than the present 1,322 miles, bringing the flight time down to 4 hours and 38 minutes. Other great circle courses are planned between Miami and New Orleans, Jacksonville and New Orleans, New Orleans and New York, and Tampa to New York.

G. T. Baker, National's presi-

Contract Flying

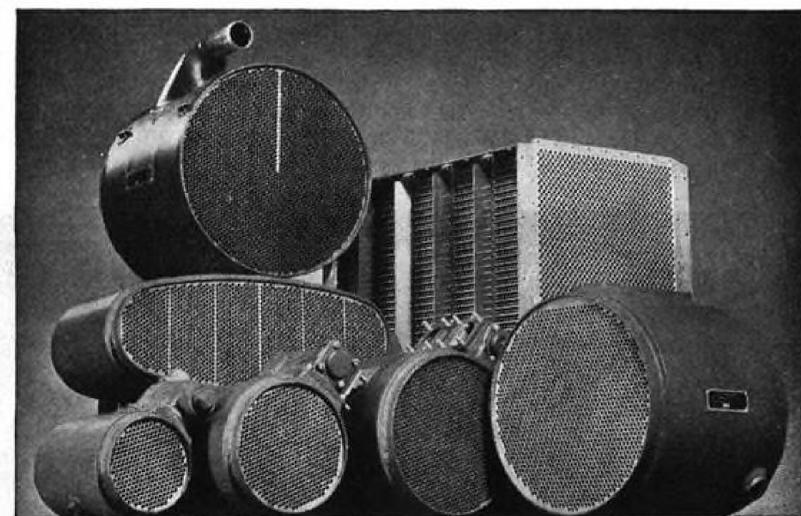
International contract flying by the airlines for Air Transport Command has expanded to the point that it is expected to exceed in the current fiscal year the mileage flown on both domestic and international ATC routes during fiscal 1944.

Domestic contracts have been canceled, the ATC now doing its own flying on these routes. Last fiscal year, ending June 30, 29,000,000 transport plane miles were flown on operations in continental U. S. and 71,000,000 were on international routes—a total of 100,000,000.

The Command now anticipates that increased international operations, coupled with greater intensity in use of aircraft, will run the airlines' ATC operations to more than 112,000,000 transport plane miles for fiscal 1945.

The ten contracts for international ATC operations are held by American Airlines, Consolidated Vultee Corp., Eastern Air Lines, Northeast Airlines, Northwest Airlines, Panagra, Pan American Airways, Transcontinental & Western Air, United Air Lines, and Western Air Lines.

ATC has budgeted its U. S. airline services for fiscal 1945 at \$86,000,000, compared with approximately \$65,000,000 reported spent for such services during fiscal 1944.



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dent, said the additional equipment was ordered with a view to successful prosecution of the line's applications for trans-Atlantic and Caribbean routes.

Proposed Revision In CAR Circulated

Civil Aeronautics Board is circulating a proposed revision of Part 41 of the Civil Air Regulations dealing with rules governing scheduled air carrier operations outside continental United States. The Board hopes to elicit comment from interested operators and prospective operators which will permit the final adoption of a body of rules meeting general approval.

As in recent proposed CAR revisions, the Board has attempted to reduce duplication of rules, to eliminate those more properly contained in an operator's manual, and to clarify the wording of the section.

Long and Short Range Operations—The draft of the proposed Part 41 is based on a distinction between long and short range operations, with the principal differences in the sections dealing with route and aircraft requirements,

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dispatch rules, flight crew requirements and fuel reserves.

The proposed draft removes the airplanes proving period required by the Part 61 now in force. To replace it, the Board has proposed route operation proving flights with a minimum number of hours in the case of new model planes.

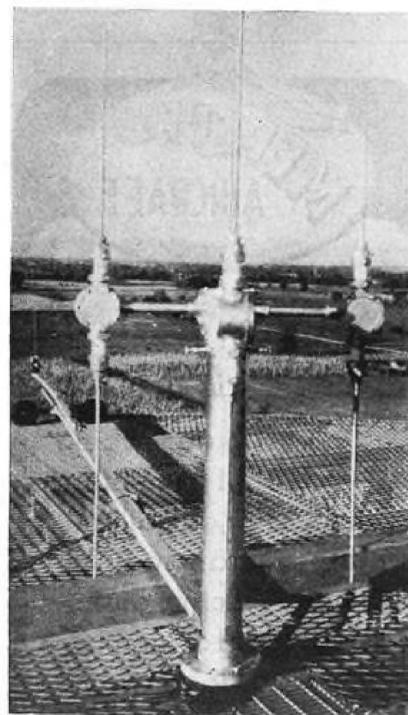
CAB has asked written comment from the industry be submitted by Jan. 1.

Deny High Priority Program for C-69

ATC has no plans for starting highspeed non-stop coast-to-coast line with *Constellations*.

Reports that the Air Transport Command plans to start a high-speed non-stop scheduled transcontinental service for important passengers and high priority cargo were labeled incorrect by the Command last week. The story, ATC officers say, grew out of an experimental West Coast to Washington round trip flown recently by the first *Constellation* released from the Army's experimental base for service with the ATC.

The transcontinental roundtrip



UHF ANTENNA:

Above is a four-course vertically polarized antenna used by Civil Aeronautics Administration engineers in testing ultra high frequency radio range equipment at Indianapolis. Antenna is designed to operate at 63 megacycles.

presumably was one of the many required to eliminate the usual "bugs" from the plane. Reliable sources report the Army's east-bound flight was completed in nine hours at 40 percent power, and that the plane returned to the West Coast within 24 hours elapsed time. ATC will operate the *Constellation* experimentally within the U. S., but will not introduce it into overseas operations, at least for some time.

► **Cargo**—One of the chief problems remaining to be solved is the *Constellation's* cargo space, which has been criticized as difficult of access. The forward cargo compartment must be loaded through the nose wheel well; the rear through a hatchway in the fuselage. It also is understood that the ship's cargo facilities provide for handling 900 pounds less cargo than the original purchase agreement specified.

Transcontinental & Western Air is reported not too concerned over any shortcoming the *Constellation* may have as a cargo carrier, inasmuch as the line plans to use the plane primarily for high speed passenger operations.

2 U. K. Lines Reveal Expansion Plans

TCA maps trans-Atlantic service while Scottish Aviation, Ltd., projects world route.

Two British Empire air carriers—Trans-Canada Air Lines and Scottish Aviation, Ltd.—laid their post-war plans for international operations on the table prior to the opening of the International Civil Aviation Conference last week. The Scottish company projects a world route, while the plans of the government-owned Canadian line call for trans-Atlantic service.

O. T. Larsen, vice-president of Trans-Canada, said it is ready to start overocean operations as soon as the post-war pattern for civil aviation is settled and the appropriate franchises can be obtained. He placed his line squarely in the competitive picture with a statement that TCA could compete as well or better on the North Atlantic with fares already announced by U. S. airlines.

► **Circle Route**—Scottish Aviation, Ltd., a nine-year-old company, disclosed in London plans for a circle route around the northern hemisphere, with round trip trans-Atlantic fares between Scotland

and New York as low as \$320. Prestwick, Scotland, will be the company's operating base.

Services announced as planned include:

► **Internal United Kingdom services.**

► **Continental shuttle service to most of the capitals of western European countries.**

► **A global circle route serving Oslo, Stockholm, Leningrad, Moscow, Omsk, Peiping, Vladivostok, Fairbanks, Vancouver and Chicago.** This would be supplemented by two loop lines serving Central Europe, the Middle East, Karachi, Calcutta and Hong Kong, rejoining the main line at Vladivostok.

► **Day service between Scotland, Canada and the U. S., via Iceland, Greenland, and Goose Bay, Labrador, for passengers, second class mail and freight.**

► **Night service, Scotland to New York, for sleeper passengers, first class mail and freight.**

The company plans initially to use converted military planes which have been used in overocean transport service, until normal commercial types are available.

CAB ACTION

• The Greater Miami Port Authority and the Orleans Airport Commission, New Orleans, have petitioned the Civil Aeronautics Board for permission to intervene in the Florida case (Docket 489 et al.).

• PCA has filed with CAB notice of its intention to start service to Huntsville, Ala., Nov. 5. Huntsville has been certificated on PCA's AM 55 since 1942, but service has never been offered because of airport conditions. Since that time airport improvements, including two 4,200-foot paved runways and a third unpaved landing strip, have been built there.

• An application filed by Arthur J. Heiser, formerly consolidated with the New England case (Docket 399 et al.) has been dismissed by CAB at the applicant's request.

• At the request of United Air Lines, the Board also dismissed an application of the airline for feeder routes in Washington, Oregon and California. The application had been consolidated with the West Coast case.

• The Department of Justice has received CAB permission to intervene in the South Atlantic case (Docket 1171 et al.). Presumably the Department is interested in the applications of the American South African Line, Inc., and Seas Shipping Co., Inc., both steamship operators.

• Prior to the beginning of hearings on the West Coast case last week the Board dismissed three applications formerly consolidated in the proceeding. Applications of Oregon Airways, Inc., and Pacific Northwest Airways were dismissed for failure to file exhibits for the case. Application of Grays Harbor Lines was dismissed at the applicant's request.

• Eastern Air Lines received CAB permission to operate non-stop over AM 6 between Columbia, S. C., and Jacksonville, Fla., and between Columbia and Washington. The non-stop authorizations will permit Eastern to decrease its flying time on the New York-Florida route by elimination of several stops. Eastern has complained of the advantage in time accruing to National Airlines through the use of Lockheed Lodestars, and the non-stop permission it has obtained presumably will enable Eastern to bring its schedules closer to National's.

• A supplementary consolidation order issued by the Board adds to the Pacific case (Docket 547 et al.) applications proposing service between U. S. and Alaska. Latest indications are that the case will be heard by Examiner Ross I. Newmann beginning Feb. 1.

SHORTLINES

► **PCA reports a total of 52,188 passengers carried during September, a 122 percent increase over the 23,412 passengers using the system in September, 1943.** Mail for the same period was up 2 percent and air express 7 percent over September last year.

► **Chile plans a new landing field in the Marga Marga Valley to permit operation of a proposed daily air service between Santiago and Valparaiso by Linea Aerea Nacional, (LAN), Chilean National Airline.**

► **Pan American-Grace Airways has prepared a survey of basic trade information, trade balances, major import commodities, area and population data, and existing and proposed air services in Panama, Colombia, Ecuador, Peru, Bolivia, Brazil, Chile, Argentina, and Uruguay.** The survey will be released through accredited travel agents, and is intended for Chambers of Commerce, Manufacturers' Associations and Boards of Trade, to encourage expanded business relations with Latin America by air.

► **What is reported to be one of the British Empire's largest airports was opened recently at an undisclosed location in British West Africa.** One runway already is in use. The field, when complete, is expected to fulfill Britain's requirements for the next ten years as a junction point for the British Isles-Latin America route.

► **Surface shipping interests are pursuing their efforts to persuade Congress that "integration" of surface and air transport is desirable in overseas transport operations.** Almon E. Roth, president of the National Federation of American Shipping, told the Worley Subcommittee on Foreign Trade and Shipping of the House of Representatives that it would be "sheer folly" for the U. S. not to employ integrated plane-ship services when other nations are sure to use the plan.

► **Officials of Trans-Canada Air Lines foresee considerable post-war expansion of "pioneer or small freighter" type of air services reaching into outlying areas of the Dominion, as well as growth in TCA's interurban operations.** Carriage of all first class mail by air is also under consideration.

► **Aerovias Nacionales de Colombia (Avianca) has resumed daily scheduled service connecting the isolated cities of Bucaramanga and Cucuta with the capital, Bogota.** A new airfield is under construction at Cazadero near Cucuta.

► **Domestic service has been started in the Dominican Republic by Compania Dominicana de Aviacion with two daily flights between Ciudad Trujillo and Santiago and three flights weekly to La Romana.** The

company operates two planes, and is planning extension to other Dominican cities. KLM and Pan American schedule 64 weekly flights through Ciudad Trujillo. The General Andrews Airport there was opened last Spring and is reported capable of handling any size aircraft.

► **Stockholders of Air Cargo, Inc., will meet in Washington Nov. 29 to hear directors' recommendations for the organization's future functions and authorize disposal of its property and New York City lease.**

► **Electronics and new de-icing methods being perfected by the military are the key to the all-weather commercial transport plane and 100 percent flight schedule completion,** says G. M. Williams, senior vice-president of Curtiss-Wright Corp.

► **Air transport is listed by a Commerce Department report as one of the forms of transportation that enters the 1944 fall traffic peak better prepared for capacity operation than last year.** A considerable re-orientation of transport is expected when the principal military effort shifts to the Pacific, to accommodate the reversal in direction of traffic flow.

► **Hawaiian Airlines estimates that for the year 1944 its air freight and air express service will carry 7,000,000 pounds of cargo.** First nine months accounted for 5,023,415 pounds, more than 25 percent over the 1943 period.

► **Air express shipments at LaGuardia Field for the first nine months of this year totaled 482,012, a 22.8 percent increase over the 392,247 for the 1943 period.** Air Express Division of Railway Express Agency reports September average was 1,950 shipments a day.

New Mexican Service

Aero-Transportes, S. A., fast-growing Mexican air carrier, opened a new service recently on a route between Tampico and Mazatlan via San Luis Potosi, Aguascalientes, Guadalajara and Tepic. The twice-weekly service now available is expected to increase with the addition of another aircraft in the near future.

The route offers connections with LAMSA at San Luis Potosi and with Compania Mexicana de Aviacion (CMA) at Tampico and Guadalajara.

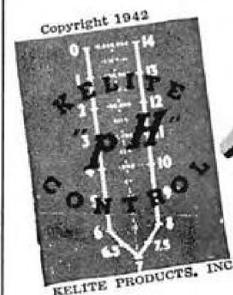
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CAB SCHEDULE

- Nov. 8. Preliminary briefs due in proceeding for approval of acquisition of Aerovias Braniff, S. A., by Braniff Airways. (Dockets 1360 and 1373).
- Nov. 11. Briefs due in Hawaiian case. (Docket 851 et al.). Extended from Nov. 4.
- Nov. 11. Preliminary briefs due in the Hawaiian case (Docket 851 et al.).
- Nov. 13. Date for exchange of exhibits in the New England feeder case. (Docket 399 et al.). Postponed from Oct. 26.
- Nov. 15. Rebuttal exhibits due in Florida cases. (Docket 489 et al.). Postponed from Nov. 1.
- Nov. 15. Exhibits due in applications of Ellis Air Transport and Ketchikan Air Service for additional service in southeastern Alaska. (Docket 876 et al.).
- Nov. 17. Hearing at Juneau, Alaska, on applications by Alaska Coastal Airlines for routes between Juneau and Skagway and Juneau and Gustavus, Alaska. (Dockets 878 and 1539).
- Nov. 20. Hearing at Ketchikan, Alaska, on application of Ellis Air Transport and Ketchikan Air Service for additional service in southeastern Alaska. (Docket 876 et al.). Postponed from Sept. 25.
- Nov. 23. Deadline for rebuttal exhibits in New England feeder case. (Docket 399 et al.). Postponed from Nov. 13.
- Nov. 24. Prehearing conference in National Airlines' reopened rate case for AM 31 and AM 39. (Docket 824).
- Nov. 27. Hearing date for the Florida case before Examiner William F. Gusi. (Docket 489 et al.).
- Dec. 4. Preliminary briefs due in Latin-American proceeding. (Docket 625 et al.).
- Dec. 4. Hearing in the New England feeder case (Docket 399 et al.) at Washington, D. C.
- Dec. 10. Exhibits due in South Atlantic route case. (Docket 1171 et al.). Postponed from Oct. 16.
- Dec. 13. Tentative hearing date, North Pacific routes.
- Dec. 18. Briefs in the North Atlantic proceeding due (Docket 855 et al.).
- Dec. 23. Exhibits due in the Pacific proceeding.
- Jan. 10, 1945. Hearing date for South Atlantic case. Postponed from Nov. 1. (Docket 1171 et al.).
- Jan. 10, 1945. Tentative hearing date, Central Pacific routes.
- Feb. 1, 1945. Tentative hearing date, Australian routes.



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The Chicago Conference

WITH A FREEDOM which the press has not enjoyed at any previous international session recently, the International Civil Aviation Conference is underway. At this stage the delegates themselves have not the slightest knowledge of the accomplishments that will be possible for future world air transportation.

The U. S. delegates, faced with the perplexing and unprecedented problems in preparing to serve over 200,000,000 square miles by commercial aircraft, realize their responsibilities. They are cognizant of criticism, some of it justified, that the conference is on a bewilderingly grandiose scale, that subjects are on the agenda on which no action is possible other than a poll of opinion or attitudes, that many details are up for discussion which at this early stage should not even be considered, that we may find ourselves delaying aviation expansion while the world quibbles over phraseology, that we should start the most necessary services now and adjust our operations as the problems arise, that we may take premature action on technical standards and regulations which not only may hold up aviation but will require extensive revision and rewriting to meet new developments.

The best the conference can hope for are general agreements between countries toward establishing and maintaining a provisional route pattern and policy, an air navigation agreement or at least agreement on principles to guide an interim drafting committee, and certain broad airworthiness conclusions. Little that the conference accomplishes can be or is intended to be final. It is a preliminary conference in every sense of the word. These facts the press should make eminently clear to the public, lest it come to expect too much and we bring a reaction of cynicism and mistrust which would do aviation irreparable harm.

Why Don't Women Fly?

WHEN WILL PERSONAL AIRCRAFT manufacturers and salesmen, flight training operators and airport management wake up to the importance of interesting women in aviation and in learning to fly?

Only three percent of the pilot certificates which were in effect before the war were held by women. Yet there is not an advertising man in the country who does not realize that the feminine half of the

nation controls much more of the annual U. S. purchasing power than men.

This is an era of polls. Private flying has had more than its share, but we have yet to see a good one which set out to learn the attitude of women toward aviation in general and personal flying specifically. Why ask a thousand citizens of both sexes, if they would "like" to have a plane, whether they would prefer a red low-wing sport monoplane or a yellow one, when the truth is that perhaps fifty percent of the women would not buy any plane now, of whatever color, or let their husbands do so, even if they could afford it, because of the conviction that small craft are not safe enough yet?

Personal aviation cannot afford to remain ignorant any longer on the reasons women shun airports, refuse to fly, or seek to prevent their families from flying. The war has insured some increased feminine interest for the future. But in the competitive, expensive months and years ahead no intelligent or resourceful businessmen in personal aviation dare remain content with only the business that materializes haphazard. Their investments will demand that they consider every able bodied citizen a potential flyer. Such a philosophy is incredible as long as half of the nation's population is permitted to remain off the prospect list, especially the half which controls the family pocketbook.

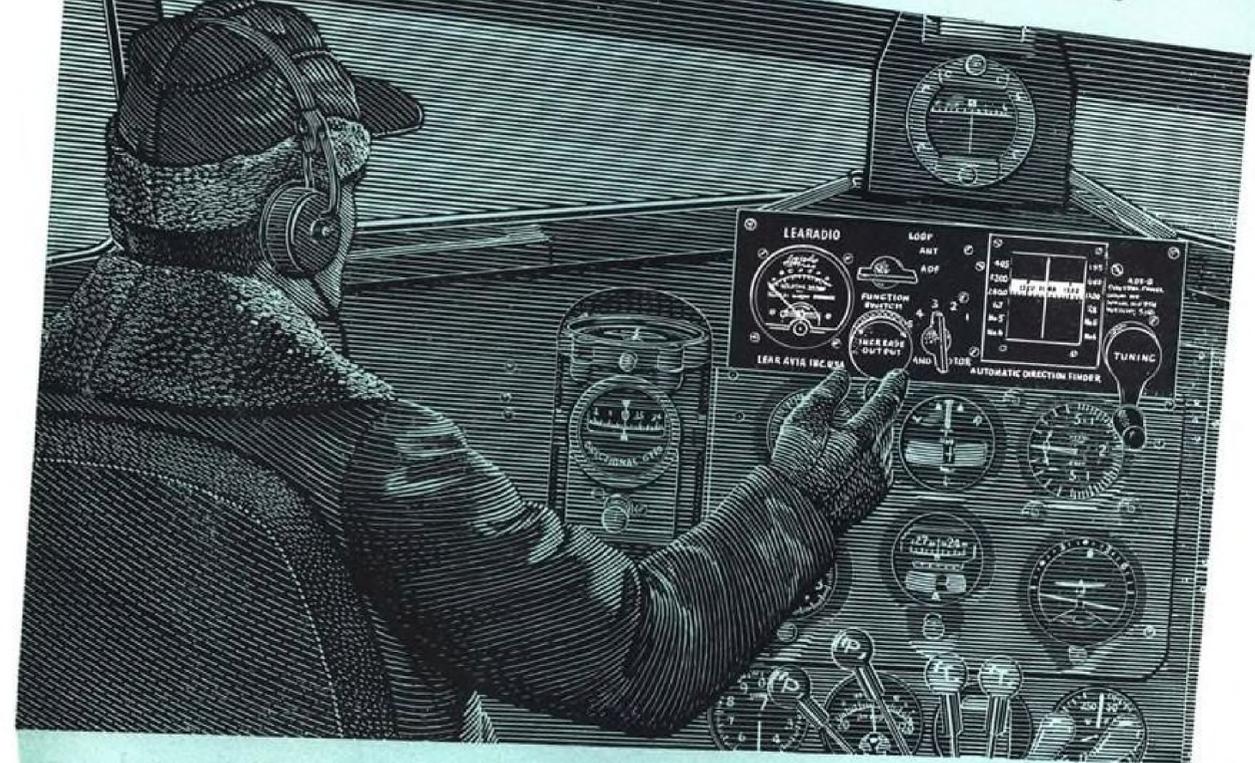
Isn't it time to start learning why more women don't fly, and then do something about it?

Recognition of Aviation Writing

THE VOLUME, variety and quality of aviation writing in the United States warrants a competition or compilation of the best products each year in various categories, chosen from the widest possible field. TWA some seven years ago in a praiseworthy promotional step established a writing and photographic contest which for a time drew exhibits from a long list of publications. In recent years, however, it has not attracted anything like a representative selection, especially in the periodical field, and in the latest competition no entries were made by AVIATION NEWS, *Air Transport*, *Flying*, *Aero Digest*, *Western Flying*, *Southern Flight*, *Air News*, *Air Tech*, *Air Trails*, *Air Pilot and Technician* or *Air Facts*. Any such project which fails to attract virtually any of the largest periodicals in aviation is not a competition at all and should be abandoned or revitalized.

ROBERT H. WOOD

Two miles up - with an ear to the ground



Keeping posted high in the air is one secret of successful flying. The ground keeps track of the plane. The plane knows the weather, the course, and what it's like at the field.

Lear was among the very first to make aircraft radios — had gained an enviable reputation for fine radio and navigation instruments long before the war — was ready when war needs demanded greater and greater technical development.

Some of these developments can't even be mentioned now. They're too secret. Some are in the field of electric aircraft controls. Some will have no use outside of war.

But there are others that hold vast promise for everyone when peace returns.

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★ A Sikorsky XR-4 hovering motionless over East Hartford, Connecticut. This first helicopter to be delivered to the Army Air Forces is equipped with six Timken Bearings in the Main Rotor Blade, two in the Tail Rotor Gear Box, and six in the wheels.

To meet the need of aircraft engineers for an anti-friction bearing—lighter in weight—of compact design—with maximum radial and thrust load carrying capacity—Timken engineers have developed a new series of tapered roller bearings.

Already, these bearings have contributed to the fine performance of Sikorsky helicopters... while giving them all the other advantages of Timken Bearing design for aircraft applications: assured smoothness of operation... ease of handling... power conservation and endurance... economical maintenance.

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