LL MATERIAL MAY BE EPRODUCED

PLANES

NEWS OF THE AVIATION INDUSTRY

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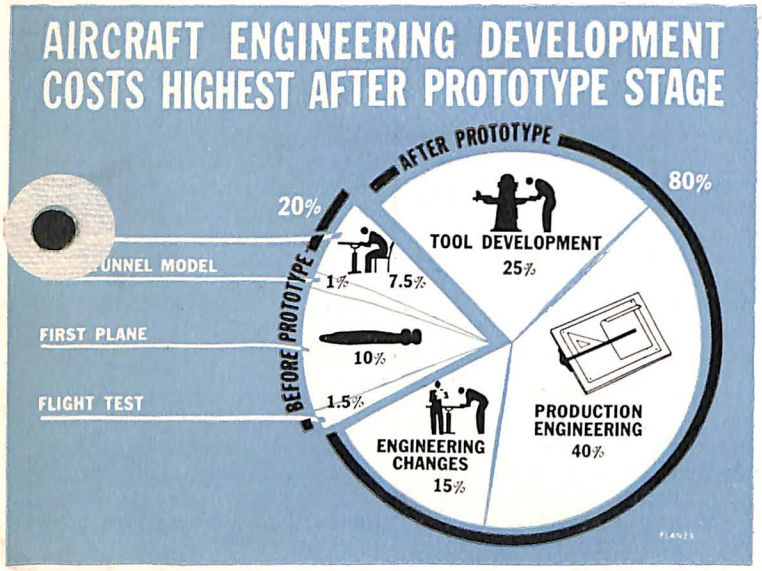
Each Technical Achievement More Costly and Difficult to Attain

Each major engineering advance in military and civilian aircraft is successively more costly and difficult to achieve.

A West Coast manufacturer reports that it has required 10 times the engineering development effort to bring a current superbomber to production than it did a preceding standard 4-engine bomber.

The earlier model had a top speed of 250 miles per hour. The superbomber advanced this speed to more than 350 miles per hour. This gain of 100 miles per hour was at the cost of 1,500,000 man-hours of engineering, roughly equivalent to the work of 750 men, 40 hours a week for a full year.

It is clear, industry engineers point out, that the 450 mile-an-hour bomber when it is designed, may cost 15 million man-hours or 7500 man-years.



It is a far cry from wind tunnel model to the flight tested prototype of the modern military aircraft, but, as this chart illustrates, it is even a longer road from prototype to battle-tested production model.

Jap Defeat Hailed As Major Triumph for Air Power

Commenting on the Jap defeat—

The **New York Times:** "Utter defeat for Japan is the most striking vindication for the dominant role of Air Power in present-day warfare that well could be imagined."

...l Arnold: "The Japa... knowledged defeat because ...s, both actual and potential, had made possible the destruction of the enemy's capability and will for further resistance."

Eugene E. Wilson, President of the Aircraft Industries Association: "The atomic bomb and the destructive power of the Army, Navy and Marine Corps Air Forces defeated Japan without an invasion of the homeland."

Prior to the Jap defeat, **President Truman,** in an Air Force Day proclamation, said: "Army airmen have demonstrated throughout the world the ability of Air Power to spearhead the attacks of our armed forces against our enemies and have materially contributed to the successful completion of the war in Europe."

Aircraft Industry Shrinks, Grapples with Reconversion

Tool and Plant Disposal, Plane Surplus Among Immediate Problems

The aircraft manufacturing industry, nation's largest during the war, is now hard at work adjusting to 10 per cent or less of its peak production rate of $20,000,000,000. In addition to the national problem of job losses (estimated to reach more than 1,100,000 by end of this year) and reemployment, the industry is faced with several problems of critical importance:

1. The most important of these is the maintenance of important research and development work now in progress which is essential to our technological leadership in world aviation. General of the Army H. H. Arnold, Commander of the Air Forces, said: "We can only assure compliance with Article 45 of the United Nations Charter (requiring 'national air force contingents') if we maintain the production and technological skills which aircraft manufacturers during the war developed to such a high degree."

Army and Navy long-range procurement programs, which are essential to this vital development work, must be inaugurated as quickly as possible in order that skilled industrial research and development teams be maintained intact. Otherwise they will be forced to seek other jobs.

NEW PRODUCTION DELAYED

2. The problem, mechanics and technicalities of disposition of government-owned tools and facilities delay the execution of new production schedules in which the emphasis is shifted from military to commercial models. This equipment, although used for military production, is essential to the production of many commercial models of identic design and the maintenance of skilled production teams familiar with the model.

The industry is on record as desirous of buying or leasing these tools and facilities, providing equitable arrangements can be worked out. The industry, because of its small sales profits during the war (lowest of any manufacturing industry) is not in every instance in financial position to make outright purchase of these facilities and long-term leases must be arranged.

3. The problem of surplus aircraft disposal looms an increasingly large one and present estimates are that as many as 100,000 planes will be declared surplus shortly.

Prior to the end of the war more than 40,000 planes had been declared surplus. Of these only 12,335 had been either sold or leased. Many thousands more are due shortly and nearly all will be combat models with little or no commercial utility.

In order that advanced design and production techniques will not be hampered by this vast stockpile of surplus equipment, the Surplus Property Board and the Army and Navy have strongly recommended extensive scrapping and metal reclamation of this material.

CONTRACT SETTLEMENT ACUTE

4. Contract settlement problems are complex with more than $19,615,000,000 worth of contracts, on which varying quantities of work have been done, pending settlement.

This problem is particularly acute in the aircraft industry because: (1) the amounts involved are large, (2) the aircraft industry has utilized more subcontractors than any other industry and their rights are involved, (3) there are more cost-plus-fixed fee contracts in aircraft and (4) there are more parts and sub-assemblies in aircraft than in almost any other war weapon.

Military, government and industry leaders are now at work on these problems looking towards an early solution in which a strong aircraft industry, the backbone of Air Power, will be preserved and strengthened for the critical peace-keeping days ahead.

'Prompt' Action on Aircraft Conversion Problem Urged

National Planning Association Calls Attention to "Section 202"

A National Planning Association joint committee resolution has warned that prompt legislative and executive action is required to prevent a threatened "costly stoppage" of vital aircraft technological development following V-J Day.

The resolution was issued by NPA's Labor, Business, Agriculture and International Committees endorsing the findings of a special NPA aircraft industry advisory committee which has been studying industry reconversion problems.

The endorsing resolution stated: "The (special aircraft advisory) Committee reports that it is in the national interest to have the earliest possible decision on postwar policies relating to the aircraft industry because of its importance to world security and to the future development of civil aviation."

DRASTIC SHRINKAGE EXPECTED

"The industry is obviously faced with a drastic postwar shrinkage, which in the absence of any planned program of transition, may result in a stoppage of vital technological development for an indefinite period of time."

The aircraft industry advisory committee, headed by Dr. Edward Warner, vice chairman of the Civil Aeronautics Board, considered its findings of sufficient urgency to interrupt temporarily its study after four months to issue a special interim report. The final report is scheduled for later in the summer.

Highlights of the interim report include:

1. Aircraft manufacturing is today the nation's largest industry and its future is of "concern" to the development of world security, to our national defense, and to our civilian economy.

2. America's own responsibilities for world security will require the continuance of effective air forces.

3. Present legal basis for continuing any war contracts after V-J Day appears "tenuous" by reason of a statutory requirement for termination of war contracts where performance thereof is not needed for *prosecution of the war.* (Section 202, Reconversion and Mobilization Act.)

4. The effect of this policy "would be that few, if any (manufacturers), could keep their vital research, engineering, labor and management skills together."

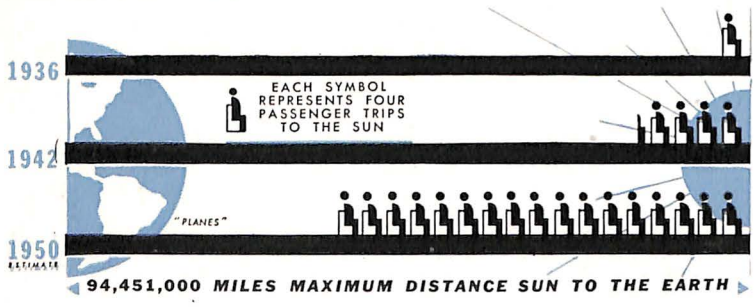
5. Production of civilian-type aircraft will not be a sufficient substitute for the continued production of military types.

6. Knowledge of postwar level of operations will enable the manufacturers to plan intelligently for the future and to keep together organizations of skilled management and labor.

7. Government agencies primarily concerned should "promptly take the action necessary" to assure peacetime procurement of military aircraft under a program which will become effective on V-J Day.

8. Congressional committees concerned should give NPA recommendations "immediate consideration" with a view to prompt legislative action.

AIRLINE TRAFFIC (revenue passenger miles)



The greatest expansion of air travel in history is forecast for the next five years with globe trotting passengers riding in new faster, safer and more luxurious equipment than ever before. The Civil Aeronautics Administration predicts airline traffic in 1950 will equal 68 passenger trips to the sun. The stage for this bright future was set on foundation of global military air transport operations under which trans-oceanic flights have become routine.

Newspaper Now "Covers" the Air Age by Plane

Convinced that you can't cover the air age from the ground, the Indianapolis News recently gave wings to its aviation editor, Gene Dawson, right, who chats with former speed king Roscoe Turner at the Indianapolis Municipal Airport. Dawson flies with a student license but as soon as he completes his training he plans an air tour of the Middle West to get a bird's-eye view of airpark developments in small communities. Dawson says he had little trouble selling his bosses on the idea of buying a plane when he pointed out its utility in improving state-wide news coverage.

Chemical 'Bath' Can Salvage Pure Aluminum From Surplus Aircraft

It now is possible for the first time by a chemical process to salvage pure aluminum from surplus fighters and bombers.

The process consists of subjecting chopped-up airframes to a caustic soda bath, which dissolves the aluminum and breaks up the alloy elements. Foreign metals are left undisturbed. The process was developed by the Aluminum Company of America.

A strategic reserve of raw aluminum equal to a year's supply at peak war output could be provided if only 50 per cent of aircraft produced in past four years was scrapped in this fashion, according to figures of the Aircraft Resources Control Office.

In the four years ended Jan. 1, 1945, the aircraft manufacturing industry produced 2,579,103,564 pounds of airframes, 686,277,184 pounds of engines, and 22,707,937 pounds of propellers. On a conservative assumption that 50 per cent of these materials will be declared surplus, there will be 1,743,544,342 pounds of aluminum for processing into raw stock in ingot form.

The peak annual aluminum production currently is 1,840,000,000 pounds.

Remembering the painful and unavoidable delays in expanding aluminum production facilities at the outbreak of war, government officials see in the new chemical process a possible easy way to purchase a year's time in event of another emergency.

NEW NAME, NEW GOAL

The Aeronautical Chamber of Commerce of America, Inc., the national association for the aircraft manufacturing industry for more than a quarter-century, has changed its name to Aircraft Industries Association of America, Inc.

The new name is believed to be more indicative of the membership, which includes the nation's aircraft, aircraft engine, propeller and aircraft accessory manufacturers.

In recent years, the chief goal of the aircraft industry has been Air Power for war; now the goal is Air Power for peace.

Wide Utility of the Lightplane Proved By Its Wartime Exploits

The war record of the little 65-horsepower "grasshopper" plane has for all time established it as an essential component of American Air Power, in peace or war.

In a review of the war service of Civil Air Patrol for "Planes," Col. Earle L. Johnson, national CAP commander, reported that CAP planes had flown more than 24 million miles on watch for the enemy, spotted 173 submarines and dropped depth charges on 57. Military uses also included artillery spotting, liaison, target towing, search and photography.

"Following peace," Colonel Johnson said, "war-developed and proved uses will find application by national, state and local enforcement authorities, doctors, ranch-owners, farmers, forestry and game officials."

In civilian war-time use, CAP has proved that during catastrophes, light planes can deliver medicines, clothing, blood plasma and food, locate stranded families and livestock. Isolated communities can receive mail, urgent shipments and supplies. The stricken in outlying districts can be flown to hospitals, and doctors rushed to attend patients.

"All this and more has been proved by the CAP in war and is a significant demonstration of the flexibility and dependability of the light plane," Colonel Johnson said. "There is no doubt that the CAP has advanced the development of postwar personal flying by months, and perhaps years."

LISTEN IN!

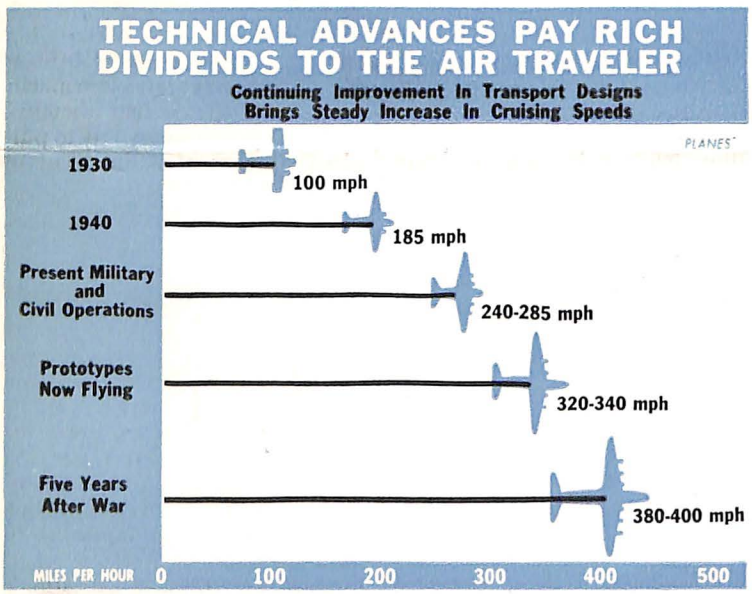
"Men of Vision" is the title of a new radio program devoted to telling the story of our aircraft manufacturing industry and its contribution to victory. Narrated by Edwin C. Hill, noted news analyst, the program dramatizes the history of development of each aviation corporation in the country.

"Men of Vision" is heard over the Columbia Broadcasting System network at 7 P.M. (EWT) each Sunday. Listen in!

Aviation Agency Acts Passed by 23 States

Twenty-three states had either passed or amended existing laws pertaining to state aviation agencies by mid-July, according to estimates of the National Aeronautic Association.

States which approved either new or amended acts creating state aviation agencies were Alabama, Indiana, Illinois, Iowa, Maine, Maryland, Michigan, Minnesota, Montana, Nebraska, New Hampshire, New York, North Carolina, North Dakota, Ohio, Pennsylvania, South Dakota, Tennessee, Texas, Vermont, Washington, West Virginia and Wyoming.



Because of their larger size, faster speed and longer range, the new air transports now being warmed up for postwar scheduled domestic and international operation will provide better service for more travelers than any comparable equipment under development anywhere in the world. American transport aircraft which established its world leadership before the war, will emerge after V-J Day in an even stronger competitive position.

PLANE QUIZ

A 70 per cent score on this quiz is excellent. Sixty per cent is good. Answers on Page 4.

1. If an engine cowling came loose it would be blown back into the air behind the plane. *True or false?*
2. A single cylinder on modern aircraft engine develops: (a) *14;* (b) *250;* (c) *120 horsepower?*
3. Fifty caliber bullets used in aircraft machine guns contain explosive charges. *True. False?*
4. At what altitude are paratroopers normally released in combat? (a) *10,000 ft.;* (b) *400 ft.;* (c) *2,275 ft.?*
5. An airplane engine turns *(faster) (slower)* than an automobile engine?
6. How long did the first transcontinental flight take? (a) *36 hours;* (b) *six weeks;* (c) *five months?*
7. If a huge dirigible and a tiny training plane were flying in a strong side wind, which would be blown off-course most? (a) *the dirigible;* (b) *the plane?*

8. The commercial airlines expect to operate a combined postwar fleet of approximately: (a) *400;* (b) *750;* (c) *1000 transports.*
9. Most optimistic estimates place postwar volume of aircraft production (both civil and military) at: (a) *10 per cent;* (b) *35 per cent;* (c) *70 per cent of 1944 production levels.*
10. Is it feasible to convert surplus four-engine bombers into civil air transports? (a) *Yes;* (b) *No.*

New Civil Air Regulations Seen As a Progressive Step Forward

The revised Civil Air Regulations which have cut much red tape for the personal flyer are characterized as "a progressive step forward" by Lowell Swenson, manager of the National Aeronautic Association.

The new liberalized provisions include:

1. Physical examination by the family doctor instead of certified physicians.

2. Flight instruction by any qualified pilot rather than licensed instructors.

3. Simplification of flight test requirements.

"The NAA sees the new regulations as a progressive step forward," Mr. Swenson said, "and it is hoped this liberal trend will continue. We feel strongly that personal airplane licenses should be no more difficult to obtain than automobile operators' certificates. 'Demonstrated proficiency' should suffice.

"Only in this way can the benefits and enjoyments of personal flying be made available to the millions who will want to fly after the war."

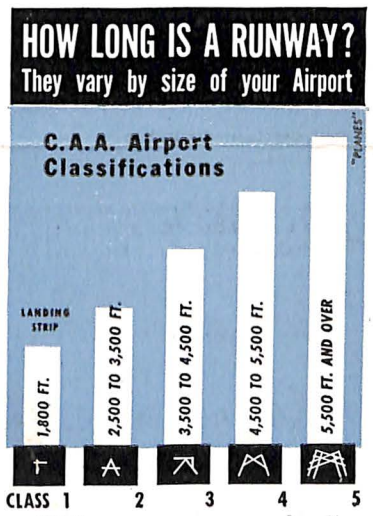
Airport Plan May Provide A Billion-Dollar Market

Government-aid airport development as contemplated in pending Congressional bills would create a billion-dollar labor and materials market in the next decade according to the Civil Aeronautics Administration.

The CAA proposes the construction of 3,000 additional airports. It estimates that it will provide $525,300,000 worth of labor and materials for preparation of sites, $395,300,000 worth of paving, $55,000,000 in lighting and identification equipment, a $10,900,000 investment in radio equipment, and related miscellaneous installations costing $34,800,000.

Schools Want Surpluses

More than 400 inquiries have been received by the Reconstruction Finance Corporation from schools and colleges interested in obtaining surplus aircraft equipment for aviation education. The Surplus Property Board has authorized sale of surplus aircraft to educational institutions at nominal cost.



Of the some 3,000 new landing facilities provided for under pending Federal-aid airport legislation, more than 90 per cent are class one strips, or airparks, for personal flying. A nation-wide expansion of small landing facilities is essential to fullest utility of the personal aircraft by the millions who will want to fly after the war.

Industry Designs, Develops 417 Separate Plane Models

Technical Advancement Steady Despite Large Production Demands

In the deadly technological race for control of the air, the American aircraft industry designed and developed a record total of 150 separate types of military aircraft in less than seven years.

Comprising 38 distinct tactical classes to fulfill the widely varying tasks of combat, training and supply, these 150 basic types went through 417 distinct models and additional thousands of detailed engineering changes during their design and production life.

The magnitude of this scientific achievement, as reported by Army and Navy records, is fully realized only when it is considered that it takes an average of four years to design, develop and produce a military airplane.

The degree of acceleration of technical advances due to the war is indicated by the fact that in the 20-year period before 1940, a total of 107 separate models of pursuit aircraft were designed and delivered to the Army, while the industry designed and developed 212 pursuit models in the last four years.

Because of its predominant size and variety of jobs, the Army Air Forces accounted for the larger share of these totals, utilizing 255 models of 97 basic designs in 21 separate tactical categories. Naval aviation's role in the war to date has required 162 models of 53 types in 17 different tactical classifications.

Whereas model changes in autos, refrigerators and other family conveniences are largely for improved style and appearance, aircraft model changes are "styled" by hard practical requirements of mass production, combat performance and field maintenance.

TACTICS DICTATE CHANGES

The replacement of machine guns with wing cannon characterizes the modified combat airplane as a "new model." New models also result from the addition of armor plate, rockets, a large engine, improved oxygen or radio and radar equipment.

Each modification to the airplane structure necessitates a re-evaluation of the important weight-strength ratio and redesign of affected parts.

Model changes are made as answers to specific questions, each modification requiring hundreds of thousands of engineering man-hours and millions of dollars in research, planning, testing, tooling and production engineering.

The addition of a "bubble" canopy, a new type rudder, an improved oil cooler or a new instrument requires careful test and analysis of the new device, a study of its application to the model in production, and the planning to shift of the production "flow" through a new channel.

REFINEMENT IS CONTINUOUS

One make of radial-powered fighter plane has reached the model series "M" and still is undergoing constant refinement even as its quantity production level is maintained in steady flow.

The first production model of this plane cost 260,000 engineering man-hours. It has since undergone 189 master changes, and 3,000 minor engineering changes at an engineering man-hour cost of nearly three times that expended to bring the first model to its production stage.

These refinements have paid off in increased speed, longer range, and greater fire-power.

The 417 models of 150 separate aircraft types designed and developed by the aircraft industry for war represent 417 major engineering product problems, solved in the face of the steady increases in war-time production schedules.

Answers to Plane Quiz

1. False. It would be "sucked" forward into the propeller due to the low pressure area existing in that region.
2. (c) 120. This is nearly one horsepower for each cubic inch of the cylinder volume!
3. False. The smallest explosive shell is the 20 millimeter used in aircraft cannon. Its fuse is so sensitive a rain drop can explode it!
4. (b) 400 ft. The troopers must get down quickly to avoid enemy sniper fire.
5. Slower. The maximum rpm of an aircraft engine is 2,500. Automobile engines frequently run at more than 3,000 rpm.
6. (c) R. C. Fowler flew from Jacksonville to San Francisco, a distance of 2,232 miles, in 151 days, finishing on Jan. 10, 1912.
7. Neither. Both would "drift" an identical distance as they are flying in a common "block" of air.
8. (c) 1,000, or an increase of 600 over prewar fleet.
9. 10 per cent.
10. No. Designed for war, with narrow fuselages and other drawbacks, bombers have no commercial value.

Jet Planes Too Quiet

Because of the absence of vibration in the new jet-propelled fighters, small vibrators are attached to the instrument panels to give the constant "jiggle" needed to assure accurate instrument readings.

LICENSE CIVIL TYPES ONLY

Of a total of 225 types of military aircraft declared surplus and offered for private sale by the Reconstruction Finance Corporation, only 125 models have been approved for civilian flying by the Civil Aeronautics Administration. Most of these are liaison, trainers and light transports. The remaining 130 models, mostly tactical aircraft, have been found ineligible for certification and, therefore, cannot be flown by civilian operators.

MAYBE SO, BUT WE'RE DUBIOUS

Since surplus bombers can't be converted into air transports why not use them to keep the sun out of farmers' eyes?

That's the latest "solution" to the surplus aircraft riddle as received in a letter by the Reconstruction Finance Corporation, the government's disposal agency.

It goes like this:

Take a thousand four-engine bombers and convert bomb bays into water tanks equipped with nozzles. Fly them in formation between 3,000 and 5,000 feet over western farm lands and turn on the spray.

This will form clouds which will protect the sun-scorched crops in the dust bowl and in addition take the heat off the hard-working farmer.

And because the prevailing winds move eastward, other states also will enjoy the benefits.

It's a bit cloudy here already.

NOTE: Of the 40,565 military aircraft declared surplus to date only 12,335 have been disposed of through sale or lease and these have been almost exclusively pre-war civil types.

Air Mail Rate Reduced

The air mail postage rate from the continental United States, including Alaska, to the Union of Soviet Socialist Republics has been reduced from 70 cents to 30 cents a half-ounce.

Facts and Figures

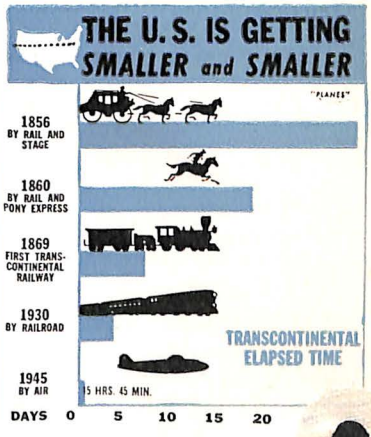
More airplanes were produced during 1944 by the American aircraft industry than the total [illegible] aircraft of all types produced in the country from 1903 to Pearl Harbor. In the 38 years of its history prior to 1942, the industry produced an estimated 85,000 airplanes of all types, military and commercial. In 1944 a total of 96,369 military airplanes was produced.

An airliner travels more miles per year than any other vehicle, three times as much as a Pullman car, its nearest competitor. The average truck or bus travels about 50,000 miles per year and a Greyhound bus about 80,000 miles per year. A Pullman car travels 145,000 miles per year while average airliner logs 464,000 miles per year.

Chicago's largest department store has agreed to open an "airplane department" and will offer a popular, two-place model for sale from a conventional display room. The service will start in October.

Both England and Russia have expressed intention to return aircraft, acquired under lend-lease, to the United States for disposal as surplus, further burdening our own surplus disposal problem.

The expansion of aircraft engine production facilities from July, 1940, to June, 1944, exceeded air-frame factory expansion by 10 per cent, indicating the pressing need for increased engine production following Pearl Harbor. The advent of four-motored bombers and the expanded production of multi-engine types placed a tremendous load on engine production.



We might add: so has the [illegible] become smaller under the impact of global air transport systems developed for war and to be inherited in peace as an instrument of international trade and goodwill among peace-loving nations.

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