Aviation News Features

Assembled and Released by the **Aviation News Sub-Committee** of the **Public Relations Committee, Aeronautical Chamber of Commerce of America**

a note to Editors . . .

PANACEAS. Don't expect overnight miracles which in some unexplained manner will suddenly produce thousands of airplanes! That's the warning of one of the foremost figures in aviation. Read what he has to say—Cols. 2 and 3.

COOPERATION. Months ago the aircraft industry initiated the practice of utilizing the idle facilities of automotive plants. Now the two industries are about to embark on a gigantic cooperative program of defense production. The details—Col. 8.

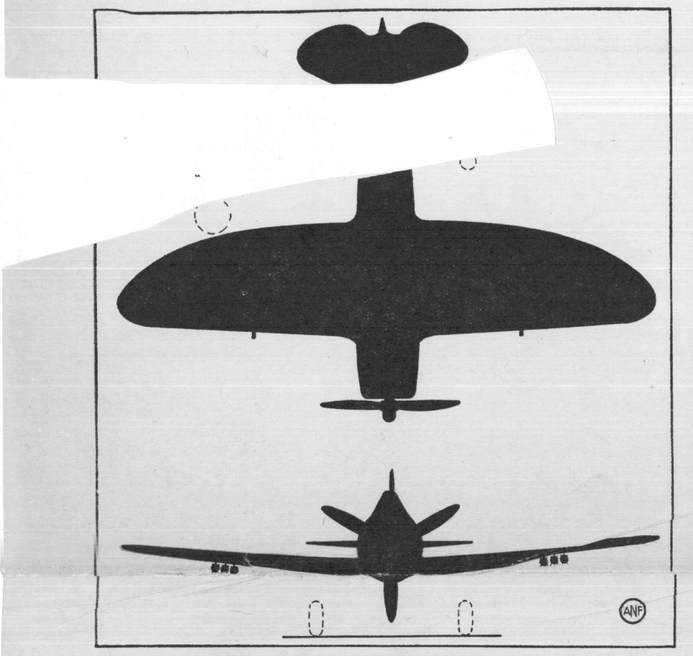
SPEED. Are American warplanes as fast as those of Europe? They are, and faster, in the opinion of the Aviation Writers Association.—Col. 3.

Vol. 1, No. 6 **February 1, 1941**

RELEASE FEB. 1

Know America's Planes

REPUBLIC LANCER



The American aircraft industry's ability to produce every type of aircraft needed for defense is illustrated by the Republic "Lancer," designated by the U.S. Army Air Corps (which has ordered a large number) as the YP-43. A high altitude fighter, the YP-43 is designed to attack bombers at heights above 25,000 feet and has a supercharged engine with a secret Republic installation said to give it unexcelled efficiency in the substratosphere.

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70 mph Added to Plane Speeds by Aeronautic Committee's Research

Laboratory Discoveries Are Basis for Continuous Improvements in Military Aircraft

This is the fifth of a series of articles illustrating the manner in which research keeps the aircraft industry ahead of prevailing need.

By JOHN F. VICTORY
Secretary, National Advisory Committee for Aeronautics
Written for AVIATION NEWS FEATURES

WASHINGTON, Feb. 00.—(ANF)—The effectiveness of an air force is largely dependent on consistent activity in research laboratories necessary to insure continuous improvement in design and performance of aircraft. Organized scientific research conducted by the National Advisory Committee for Aeronautics has provided new knowledge which in the present emergency is serving as the basis of extensive improvements in our military aircraft.

Speed is the most important single factor in increasing the relative importance of aircraft for national defense. As a direct result of the Committee's research, there have been great increases in speed and efficiency in recent years, and during the past year NACA studies of new types of airplanes about to go into production have resulted in further increases in speed of from 35 to 70 miles per hour.

EVEN FASTER

In addition, long-range research has recently provided new knowledge of fundamentals which should be the basis of even further increases in speed.

From the standpoint of national defense, the United States is most fortunately situated between two great oceans. However, as advances in aeronautical science result in increased range of aircraft, the protective value of these oceans will gradually diminish, and superiority in aircraft design will become more and more essential to our national safety.

With regard to this essential need, the primary function of the National Advisory Committee for Aeronautics is to conduct scientific study and investigation of fundamental principles underlying the design of improved military and naval aircraft.

LONG-RANGE RESEARCH

Any national aviation policy would be incomplete that did not provide adequately for the comprehensive planning and execution of long-range research programs.

The National Advisory Committee for Aeronautics is the one Governmental research organization which, with the active cooperation of the War, Navy and Commerce Departments, of the aircraft industry, and of educational institutions, coordinates and supplies the research needs of aviation, civil and military, without overlapping or duplication of effort.

AEROQUIZ

Power Turrets in New Ships

Q—What is the advantage of the power-driven airplane turret?

A—The European war has shown that at speeds around 300 miles per hour, the rush of air against a manually operated turret makes it difficult to move quickly. Several new American warplane types are equipped with U.S.-designed power turrets.

Q—Is the X-ray used in aircraft inspection?

A—Yes. It is utilized to reveal defects in metal parts which might otherwise escape visual inspection.

Q—How many types of airplanes are in service with the British fighting forces?

A—The British magazine "Flight" lists nearly 40.

QUOTE AND END QUOTE

Aircraft Industry Speaks!

Excerpts from a talk by Col. John H. Jouett, president of the Aeronautical Chamber of Commerce of America, at the National Press Club in Washington:

* * *

". . . The aircraft industry is proud of the job it has done and is now doing. The period of today is the low point of production in relation to expansion . . . yet the industry is turning out five times the number of military airplanes it was producing two years ago. It will continue to increase production."

* * *

"If . . . you expect an overnight miracle or some panacea from outside the industry, which will suddenly produce thousands upon thousands of planes, you are due for a disappointment. It cannot be done. . . . If it were possible our manufacturers would be doing it."

* * *

"Broadly speaking, the present program calls for delivery of all planes thus far ordered by July, 1942—18 months from now. It probably will be completed in that time."

* * *

"We have heard many times that we make too many models. We haven't much to say about that. The air forces . . . do not want us to standardize too much on types and they reject the idea of frozen models."

SPEED! *Table Shows U. S. Ships Are Swift*

Maximum speeds of at least two American pursuit planes exceed those of any warplane now in action in Europe, while other recent United States fighters equal and in some cases excel the speeds of British and Nazi ships.

Authority for these facts is the Aviation Writers Association, headed by Devon Francis, Associated Press aviation editor. The association has compiled the following table of comparative statistics. All speeds are approximate and are at critical altitude, ranging from 12,000 to 23,000 feet:

Model	Horsepower	Top Speed
GERMANY		
Messerschmitt 109	1150	360 mph
Messerschmitt 110	2300*	370
Heinkel 112	1150	360
Focke-Wulf 198	1500	370
Focke-Wulf 187	2300*	360
BRITAIN		
Hurricane "1"	1030	335
Spitfire "1"	1030	365
Spitfire "2"	1250	385
UNITED STATES		
Curtiss P-40	1090**	360
Bell P-39	1150**	385
Lockheed P-38	2175* **	390
Vultee Vanguard	1050	360
Vought-Sikorsky XF4U-1	1850	400 plus

(* Twin-engine)
(** Government rated horsepower)

U. S. Planes Make Fine War Showing

Performances in Britain and Egypt Are Lauded

American-made fighting planes are beginning to figure prominently in the European aerial conflicts—and are giving a particularly good account of themselves, according to word reaching the United States from the English and Mediterranean fronts.

Performance of U. S. planes on the British home front has been reported by the Air Ministry, which reveals that naval pilots, flying Grumman single-seat planes, had shot down a Junkers 88 bomber and that the four German crew members had been captured. The Junkers 88 is one of the most heavily armored German planes—a twin-engined bomber.

From Cairo, Egypt, comes word that American planes have made their initial appearance with the British Near East forces in the Libyan offensive and have done "exceptionally good work." Martin bombers have gone into service there and are said to be well adapted to desert aerial warfare.

Sir Hugh Dowding, British air marshal, told newspaper men that the American Lockheed-Hudson bombers, now in use by the RAF in the home defense zones, were "outstanding" after each plane had had a gun turret added to give it protection aft, and that the craft were thoroughly up-to-date.

The Douglas DB-7 bombers, which were built for attack bombing on enemy troop concentrations, are also proving useful in two separate roles, the air marshal continued, although he did not specify just what these uses were. Curtiss fighters, the famous P-40's, are likewise being used in home defense work, he added.

U. S. LISTS BOOKLETS

Booklets on Federally aided aviation courses, aeronautical courses in colleges and universities and the duties of airline hostesses have been prepared by the U. S. Office of Education.

Populations Gain in Aircraft Cities

Increases up to 100 Pct. Are Reported in 1940 Census Figures

WASHINGTON, Feb. 00.—(ANF)—Growth of the American aircraft industry during the last decade and particularly the tremendous expansion of the past 18 months, has had a marked effect upon the population figures of many an American community, the Aviation News Committee of the Aeronautical Chamber of Commerce reported today.

Final official figures of the Federal census show, according to the committee, that virtually every city in which airplane or aircraft engine manufacturing is a key industry registered increases in population.

ECONOMIC BENEFITS

With the population increases came corresponding economic benefits, in the form of higher payrolls and increased buying power.

An example of population growth in aircraft centers was found by the committee in Los Angeles county, where the number of residents rose from 2,208,492 in 1930 to 2,785,643 in 1940, an increase of 26.1 per cent. In Los Angeles county are located the Douglas, Lockheed, North American, Northrop, and Vultee aircraft factories, as well as a number of engine and accessory firms.

GROWTH IN EAST

Nassau county, New York, had a 1940 population of 406,748 as against 303,053 in 1930, an increase of 34.2 per cent, while Suffolk county, New York, rose from 116,055 in 1930 to 197,355 in 1940, an increase of 22.5 per cent. These two counties contain such aircraft leaders as Republic Aviation Corp., Grumman Aircraft Corp. and Ranger Engine Division of Fairchild Engine and Airplane Corp.

One of the outstanding population increases was registered at Burbank, Calif., home of Lockheed Aircraft Corp. and its subsidiary, Vega Airplane Co. Here the figures rose from 16,662 in 1930 to 34,337 in 1940, an increase of 106.1 per cent!

COAST TO COAST

Other increases reported by the Aviation News Committee:

San Diego, Calif. (Consolidated Aircraft Corp., Ryan Aeronautical Co., Solar Aircraft Corp.): 1930, 147,995; 1940, 202,341—up 37.4 per cent.

Santa Monica, Calif. (Douglas Aircraft Co.): 1930, 37,146; 1940, 53,500—up 44 per cent.

Inglewood, Calif. (North American Aviation): 1930, 19,480; 1940, 30,114—up 54.6 per cent.

Lock Haven, Pa. (Piper Aircraft Corp.): 1930, 9,668; 1940, 10,810—up 11.8 per cent.

Seattle, Wash. (Boeing Aircraft Co.): 1930, 365,583; 1940, 368,302—up 0.7 per cent.

Wichita, Kans. (Beech Aircraft Corp., Cessna Aircraft Co. and Stearman Division of Boeing): 1930, 111,110; 1940, 114,966—up 3.5 per cent.

Hagerstown, Md. (Fairchild Aircraft Division): 1930, 30,861; 1940, 32,491—up 5.3 per cent.

East Hartford, Conn. (United Aircraft Corp.): 1930, 17,125; 1940, 18,615—up 8.7 per cent.

Baltimore, Md. (Glenn L. Martin Co.): 1930, 804,874; 1940, 859,999—up 6.7 per cent.

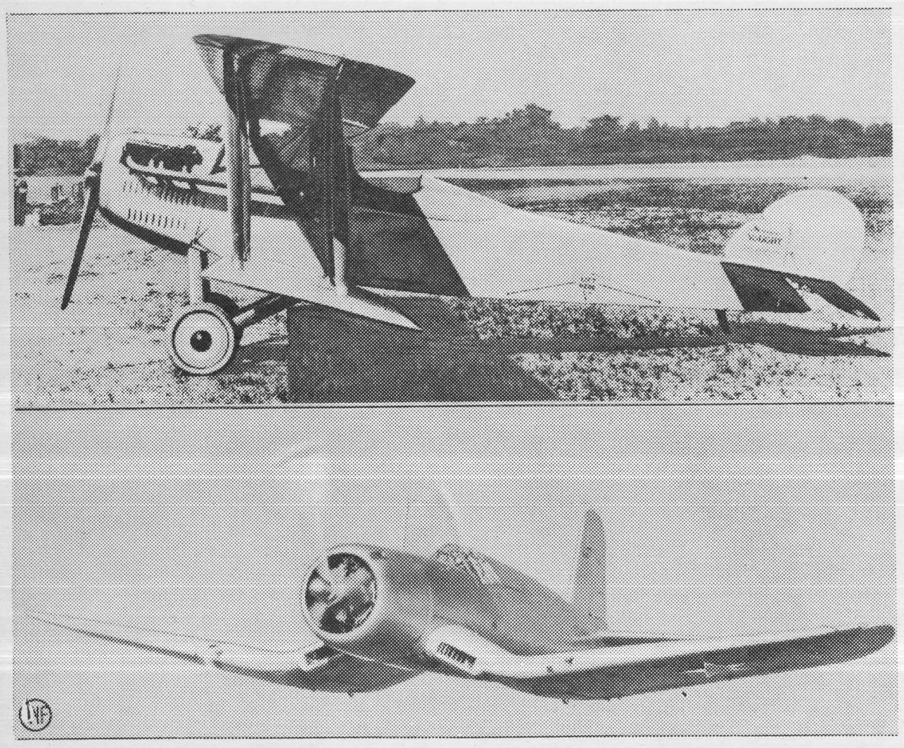
Buffalo, N. Y. (Curtiss Aeroplane Division of Curtiss-Wright Corp.): 1930, 573,076; 1940, 575,901—up 0.5 per cent.

MORE AIR TRAVEL

Transport planes are faster, bigger and more efficient today—and more Americans are traveling by air than ever before. American aircraft manufacturers, regarding civil aviation as the nation's second bulwark of defense, have furthered reciprocal development of commercial and fighting planes.

AIRCRAFT - AUTO POOL TO SPEED OUTPUT

1918 — THEN AND NOW — 1941



Twenty-three years of aeronautical development is pictured here. In the upper picture you see an airplane of 1918—the original Vought VE-7 advanced trainer. In the lower picture is the Vought XF4U-1, heralded as one of the fastest airplanes in the United States today. In 1913, when the Army ordered 1600 of the VE-7s (only to cancel the order with the signing of the Armistice), the 1850 horsepower Pratt & Whitney engine, which drives the XF4U-1 through the air at a maximum speed of more than 400 miles per hour, would have been considered incredible.

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Long-Range Plan Bolsters 'All Out' Defense Program

Plane Makers Moved to Use Idle Facilities Months Ago

Release February 1

LOS ANGELES, Feb. 1.—(ANF)—America's job today of arming in the air will be greatly accelerated by last summer's move by airplane manufacturers to use idle facilities of automobile plants for construction of parts and subassemblies for fighting craft.

This voluntary, long-range planning within the aircraft industry now makes possible prompt and complete cooperation with the recent call of William S. Knudsen, director general of the office of production management, for "all out" military production, the Aviation News Committee of the Aeronautical Chamber of Commerce said today.

LAUNCHED LAST YEAR

In the foreground is the plan which Mr. Knudsen launched late last year to have any available facilities of the automobile industry used for sub-contract work with the aircraft manufacturers. Automobile companies have been surveying their facilities for nearly three months. Some of them have reported that they will be able to cooperate. This probably will lead to further sub-contracting.

The Knudsen plan contemplates broadening the scope of the subcontracting system by erecting assembly plants in the Middle West and having certain companies in the aircraft industry operate them.

The motor car industry will supply all possible sub-assemblies for the planes to be assembled in those new plants. The planes will be two-engined and four-engined bombers, according to present plans. The plane manufacturers will instruct supervisory personnel and key workmen in the admittedly different art of aircraft construction.

TOOK THE LEAD

Last summer the aircraft industry took the lead in sub-contracting. Aircraft manufacturers were placing large orders with motor car plants at the time defense officials launched their program for utilizing automobile facilities to the utmost.

An example of this planning and its results is found at the Douglas Aircraft Co. Negotiations begun months ago resulted in signing of contracts with Detroit area automobile plants for sub-assembly production. Largest of these contracts totaled $30,000,000, and the total, at Douglas alone, is expected to pass the $100,000,000 mark.

PLANE FACTS:

New Bomber Has 4-Bladed Prop

The B-26, new medium bomber built by the Glenn L. Martin Co. and heralded as the "flying torpedo," is equipped with four-blade propellers instead of the conventional three-blade props. Heavily armed, the ship reportedly is faster than many of the single-seater pursuit ships now in action in Europe.

* * *

Thirty miles of steel girders are going into the $1,000,000 factory addition being erected by Northrop Aircraft, Inc., in California.

* * *

Export of American-made warplanes to Great Britain and Canada increased more than 600 per cent in 1940 over the previous year.

2500 lbs. of Dural Sent to Aircraft Plant by Plane

BURBANK, Calif., Feb. 00.—(ANF)—It took less than 15 hours—instead of 10 days—for a shipment of duralumin tubing, urgently needed for an experimental development, to reach Lockheed Aircraft Corp. here.

Indicative of the way in which aircraft manufacturers are speeding up national defense work, Lockheed chartered a Douglas commercial transport to pick up 2500 pounds of duralumin at the New Kensington, Pa., plant of the Aluminum Corp. of America and deliver it within 14 hours and 33 minutes to the Burbank factory. A routine freight shipment would have taken 10 days.

PRODUCTION

Construction of 33,000 new military airplanes by the summer of 1942! That's the production prediction made recently in Washington by William S. Knudsen, director general of defense production management.

Declaring that defense production is speeding up in an encouraging manner, Mr. Knudsen announced the nation's airplane output was 799 and the aircraft engine output was 2400 in December.

Streamline Production Methods Accomplished in Aircraft Plants

High Speed Assembly Lines, Farsighted Tooling Up at Douglas and Martin Factories Cited

Streamlined production methods—the aircraft industry's answer to the need for more and more airplanes for American defense and for the embattled democracies—has been or is rapidly being achieved in factories across the land. Below are two outstanding examples of speed-up accomplishments—one on the Atlantic seaboard, the other on the Pacific—worked out independently, which illustrate the industry's success in reaching a mass production basis:

SANTA MONICA, Feb. 00.—(ANF)—More airplanes will be produced in less time at decreased costs as the direct result of the high-speed assembly methods being put into effect at the Douglas Aircraft Co. here.

Object of the new streamlined assembly technique is to slash radically the elapsed time between fabrication of parts and completion of planes on a mass production scale.

Preliminary plans for speeding up shop departments and assembly lines were mapped months ago by a newly-created plant layout department. Its aim was to send parts and materials through the factory in an unbroken, continuous flow, eliminating backtracking and cross-hauling.

In formulating the new layouts, thousands of paper models are utilized, representing machines, jigs and airplane assemblies. Placed on huge charts of the plant, these models are carefully analyzed, studied, arranged and rearranged until the most progressive, straight-line technique has been worked out.

DEPARTMENTS GROUPED

Production heads have been consulted, and each department has been studied, individually and as a co-ordinated unit of the whole. Functions and equipment have been analyzed in detail.

One important step has been the grouping of several minor assembly departments into one "major department," to turn out complete major assemblies.

Parts from fabricating departments or outside production will flow into major departments and emerge as complete sections of wings and fuselages. Handling, storage requirements and elapsed time are all being minimized and responsibility is being centralized.

CONTINUOUS FLOW

Flow of materials is becoming continuous—moving from jig to jig at regular intervals. Wherever practical, the jigs themselves are being put on tracks, thereby conserving production space and speeding up operations. Handlings of numerous parts and sections have been cut nearly in half.

Plant trucking is being transformed into a railroad system, with truck-trailer trains moving on regular scheduled runs from a "union terminal" presided over by a train dispatcher.

Responsible for much of the speed-up at the Santa Monica plant is the installation during 1940 of new machinery and equipment costing nearly $1,000,000.

Automotive plants, which are to build parts and assemblies for Douglas airplanes on a subcontracting basis, have sent experts to the Santa Monica factory to study and adapt its production line layouts to their own use.

BALTIMORE, Feb. 00.—(ANF)—Early installation of mass production equipment has enabled the Glenn L. Martin Co. to produce the new B-26 medium bomber—the "flying torpedo" reported to have a speed in excess of 350 mph—well ahead of schedule.

A year ago, aware that the B-26 was likely to play an important part in national rearmament, the Martin Co. began tooling-up for large scale production, even though the only contract actually held was for $18,850,000.

When later contracts were awarded—one for $16,337,760 and another for $99,641,880—the factory was already far ahead on its production schedule.

PERMANENT MACHINERY

On two floors of the Baltimore plant are heavy steel jigs, fixtures and permanent machinery designed to speed up production on the B-26. A straight-line flow, simple but extremely effective, is in operation.

Parts flow into the subassembly section from the machine and sheet metal departments, as well as from subcontractors, and are fitted together in steel fixtures designed for this specific purpose.

The assembly of a leading edge of a wing has been simplified to increase speed and accuracy. Sheet metal ribs, formed on huge presses, are slipped into place on metal "tongues" which they fit exactly. The curved metal "skin," tapering toward the outer wing, is fitted over them. A harness-like form, with metal straps filled with holes, is lowered from the ceiling and an operator pushes his drill through each of the holes, boring through skin and ribs.

RIVETERS IN ACTION

Riveters then "sew" metal seams to bring the parts into one tight assembly. Wing spars are assembled on long, narrow tables, into which each part fits snugly. Traveling drill presses move on long steel tracks and slide back and forth across the spars, drilling all holes exactly.

Upstairs, on the assembly floor, the various sections—nose, center, tail and wings—fit into enormous steel fixtures and are held firmly by clamps while riveters make the assembly permanent.

In final assembly, whole sections are swung together, suspended from an overhead railroad, for final operations and the hook-up of intricate control, wiring, instrument, fuel and other systems.

The aircraft industry has previously lacked such mass production equipment, Martin officials explain, because orders have not been large enough to justify the heavy installation costs. Given quantity orders, however, such tooling actually costs less per ship than less adequate tooling for fewer planes would cost.

Auto Builders Laud Production Methods of Aircraft Makers

LOS ANGELES, Feb. 00.—(ANF)—Edsel Ford, president of the Ford Motor Co., and Charles Sorensen, production manager of the Ford River Rouge plant, came to Southern California recently to study aircraft production facilities.

Accustomed to mass production methods in the automotive industry, Mr. Ford and Mr. Sorensen expressed themselves as being greatly impressed by the efficiency and speed with which military airplanes were being turned out.

Commenting on production methods and plant layouts, Mr. Ford said:

"These plans are excellent and, in most essentials, closely parallel the best mass production practices in the automotive industry."

The visitors also inspected the world's biggest airplane—the giant B-19 bomber, now nearing completion at the Douglas factory.

"It is without doubt the most amazing structure I have ever seen and the engineers and designers who could conceive and create such an airplane deserve our highest praise," said Mr. Ford.

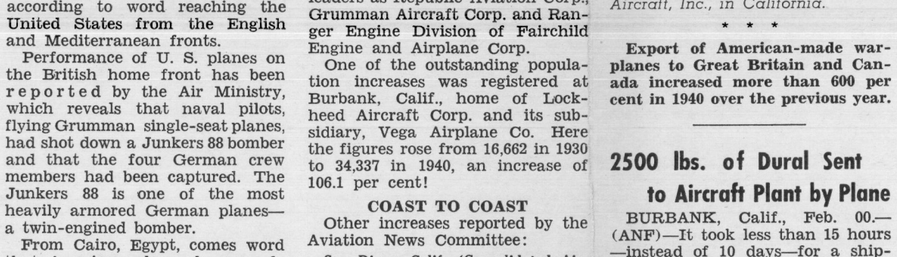
'CHUTE TESTING

A testing tower on which parachutes may be operated and closely observed under all service conditions is in operation at the Connecticut plant of the Pioneer Parachute Co. The tower whirls a dummy, to which a parachute harness and pack are attached, at speeds ranging from 70 to 300 miles per hour.

INSPECTORS

SAN DIEGO, Feb. 00.—To meet the national defense need for trained aircraft inspectors, Consolidated Aircraft Corp. turned recently to the University of California. J. H. Waterbury, company employment director, selected 23 College of Engineering students who had from two-and-a-half to three years college experience. The students will work half a day at the factory, study for half a day (being paid by Consolidated) until they have completed their training.

AIRCRAFTSMEN AROUND THE CLOCK



Thousands of men trained in dozens of crafts are employed in the production of military airplanes in American factories. A good many of these crafts have been created solely to meet the needs of modern aircraft construction.

But, in an industry where the use of steel, duralumin, and other metals predominates, the first man to pick up a tool for the production of a new type of airplane is a member of one of the oldest crafts in history—the carpenter. And in many cases the last man to touch the completed ship is again the carpenter.

These workers with wood are called in to build the "mockup"—the wooden replica which is constructed, for purposes of research, before any new airplane model goes into production.

And, in aircraft plants building planes for export, carpenters frequently are called upon to crate the finished ships, when they are to be delivered to purchaser in that form.