

a note to Editors...

SUBCONTRACTING—Your readers will be interested in the extensive use of subcontracting to speed production of America's warplanes. See chart and stories in Cols. 5 to 8.

MANPOWER—The aircraft industry utilizes every available source of labor to reach production limits. How this is done is told in Cols. 3 & 4.

GLIDERS—Military developments in the use of gliders are told by an Army expert in the story in Col. 3.

EDITORS:

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NEW YORK: 30 Rockefeller Plaza, Circle 7-2140
WASHINGTON: Shoreham Bldg., National 8438
LOS ANGELES: 7046 Hollywood Blvd., Hillside 7211

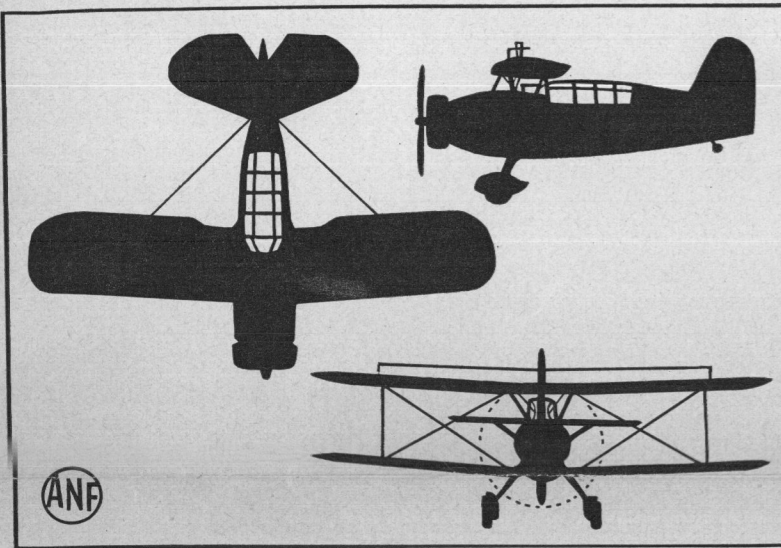
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RELEASE MARCH 2

Know America's Planes

CURTISS SOC



This Curtiss Scout Observation (SOC) of the U. S. Army is easily recognized as one of the few remaining bi-plane types still in service. Its counterpart, known sometimes as SON, is used by the Navy for scout-observation assignments. Planes of the SOC type, of which there have been several improved models, are two-place ships, powered by Pratt & Whitney Wasp engines. They are extremely versatile craft, easily convertible from land to sea planes and may be based aboard battleships, cruisers and aircraft carriers as well as at land airports.

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50 ITEMS OF RUBBER IN PLANES

LOS ANGELES, Mar. 00.—(ANF)—Every American who conserves rubber is helping the American aircraft manufacturing industry to build the 185,000 airplanes called for during 1942 and 1943 by President Roosevelt.

More than 50 different articles made from rubber, or rubber synthetics, are used in the production of aircraft, according to the Aviation News Committee.

Most important are tires and tubes, which range from five-inch tall wheel tires to huge casings weighing several hundred pounds for multi-engine bombers. Although airplane tires travel relatively short distances, they bear tremendous weights and are subject to great stress due to high speeds during take-offs and landings.

Second most notable use for rubber in airplane construction is the de-icer "boot" on the leading edges of wings, empennage and propeller blades. As more and more military aircraft are being equipped with superchargers for stratosphere flying, the need for rubber de-icing equipment is steadily increasing.

Other rubber accessories, essential to all-out construction of the greatest number of the world's best airplanes, include: bullet-proof gas tanks and hydraulic hoses for brakes; molded parts such as engine shock mounts and bumpers; flotation bags to keep planes afloat in case of forced landings on water; tubing for fuel, oil, water and air lines, etc.

Because rubber has become as strategic a necessity as aluminum, the rubber and aircraft industries are now reaping benefits from the years of research they have devoted to the development of synthetic rubbers and their suitability for aircraft use. Synthetic rubber is already being used for engine shock absorbers, fuel and oil hose and lining of hydraulic brakes.

Research chemists and engineers are working around the clock to speed up the production of synthetic, that goes into an American plane, to meet the most rigid demands of aerial warfare.

PLANE FACTS: Small Magnets Reduce Delays

Small powerful magnets are used by workers at Republic Aviation Corp. to locate small tools, steel screws, scrap metal or other materials accidentally dropped or misplaced in an airplane under construction. A small wrench dropped into a supercharger duct could cause a delay of 16 hours while the tool is being removed. The magnet, tied to a string, brings it out in less than five minutes.

Let's Go U.S.A.—Keep 'em Flying!

Workers in Lockheed and Consolidated Aircraft Corp. plants are kept abreast of changes in the war situation, helping them realize the importance of their work, by daily plant-wide news broadcasts during lunch hours. These broadcasts also help prevent spreading of wild rumors which might slow down the pace of production.

Let's Go U.S.A.—Keep 'em Flying!

Cooperating with the Civil Aeronautics Administration, the Army Field Artillery is training pilot-mechanics for light planes which could operate with the artillery in almost any kind of terrain, requiring only small areas to take-off and land.

Let's Go U.S.A.—Keep 'em Flying!

DE-ICING SIGNAL

An electric signal hook-up which warns the pilot when an airplane is flying through an atmosphere where ice may form on the wings has recently been perfected by a Missouri engineer. The device has a small lamp mounted on the plane's instrument panel which intermittently flashes when an ice-forming area is reached. Thus warned, the pilot can start the de-icers on the plane before any substantial amount of ice has formed on the wings.

Let's Go U.S.A.—Keep 'em Flying!

AIRPLANE TORPEDOES

Airplanes release torpedoes at a level flight at very low altitudes. A torpedo cannot be launched in a dive as it will in that case go to the bottom. It must hit the water in as near a level position as possible.

AIRCRAFT PRODUCTION SPEEDED BY SUBCONTRACTING WORK

Aircraft Industry Launches Program to Obtain Workers

Sources of Labor for Vast Plane Program Include Displaced Workers from Other Industries

By Aviation News Features

Moving swiftly toward fulfillment of the vast airplane quota set for America's war effort in 1942 and 1943, the aircraft industry has launched a widespread program to take advantage of every available source of labor which may be converted to aircraft production.

Expert Tells Of Tests for Army Gliders

By LEVIN B. BARRINGER

(A glider specialist in charge of the U. S. Army Glider Program, he set a world soaring record in 1940 by reaching 14,690 feet in a two-seater glider and achieved the American distance record of 212 miles for a glider in 1939.)

Recent reports of German military gliders point to a new use of these large towed aircraft. Their value for surprise attack was amply demonstrated in Belgium and Crete. Now they are being used to transport materiel as well as personnel into Libya and the Crimea.

Definite figures are not yet available, but rumor has it that some of these gliders are of huge size with wing span of 130 feet or more. They are towed behind tri-motored transport planes or bombers.

The glider development of the Army Air Forces is making steady progress. The first of our experimental troop gliders has been successfully test flown at Wright Field.

Several different designs of these big gliders will be put through static and flight tests before the present experimental program is complete. When it is, we will know from comparative evaluation which designs of these motorless craft will be used for production to supply transportation for our airborne troops.

Two-seater training gliders have also been under development and the first of these are piling up hours in the flight training of Air Corps Pilots at the Air Corp's first gliding school, being operated by the Twenty-Nine Palms Air Academy at Twenty-Nine Palms, in the California desert.

Principal airport of this school is Condor Field, formerly known as Mesquite Dry Lake, a natural landing field more than two miles long and nearly a mile wide.

Training during the four weeks course includes auto, auto-pulley, winch and airplane towing. Among the techniques of glider flying our pilots are learning is the ability to spot land these ships and bring them to a very short and abrupt stop.

The design features which make it possible to do this with the small two-seaters will be retained in the large multi-seaters. This feature of the gliders, plus their ability to glide far and silently after release, is what makes them practical vehicles for placing shock troops with weapons ready to use where and when they are most needed.

Waterfall Helps Build Airplanes

FARMINGDALE, N. Y., March 00.—(ANF)—A waterfall helps paint pursuit planes for the Army!

As one of the innovations developed by the aircraft industry to protect the health of its employees, this waterfall has been installed to clean air in factory paint shops, the Aviation News Committee reports.

Using a flow of 4000 gallons a minute, the man-made fall is operating at Republic Aviation Corp. at Farmingdale, N. Y. Within a year, the waterfall passes over 2-100,000 gallons—enough for the City of New York, its industries and 7,000,000 residents, for two full days.

One single pursuit ship requires almost 1,000,000 gallons of water during the painting process.

Fumes of the paint shop are drawn by blowers so they pass through the vertical-drop waterfall, located to the rear of paint shop equipment used in spraying plane parts and assemblies.

The paint mist loses all its paint pigments in passing through the water, and air in the painting rooms is kept so clear that no masks or other awkward safety devices are needed by the men.

Water used in the artificial cataract is allowed to stand in a reservoir. The paint pigments are skimmed from the surface and the water is used again and again to remove paint particles from the air.

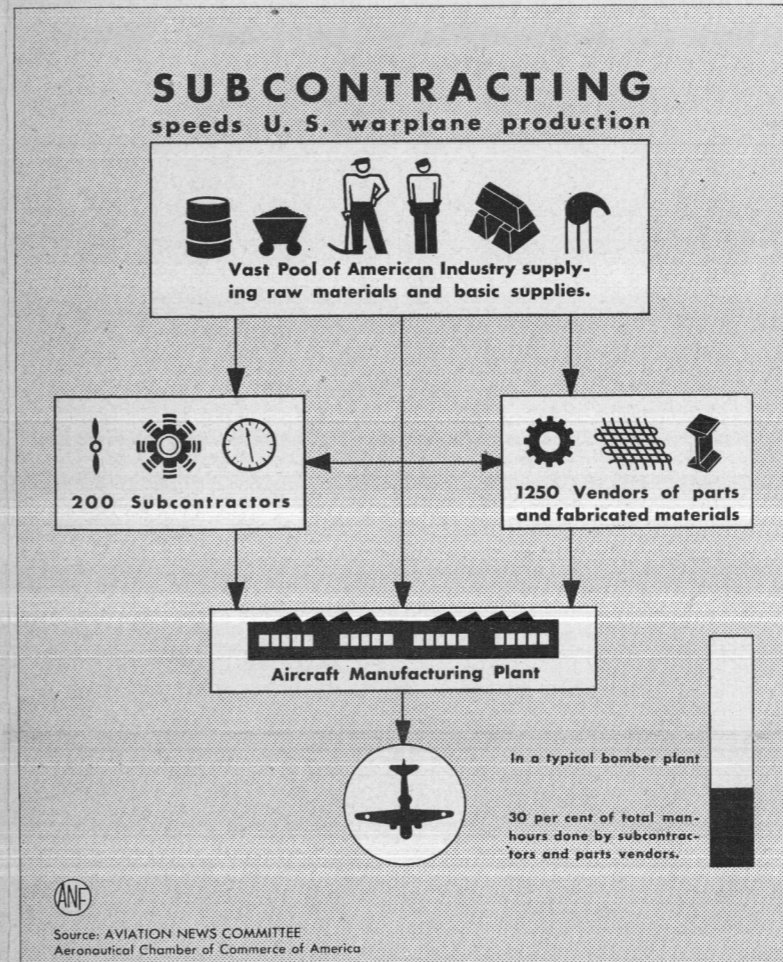
Let's Go U.S.A.—Keep 'em Flying!

NAVY TRANSPORTS

The U. S. Navy is building up a transport service to provide rapid means of transportation for Navy personnel and cargo in connection with Naval operations. First units of the service are to be located at Norfolk, Va., Kansas City, Mo., and Alameda, Calif.

Released by the Aviation News Committee, Aeronautical Chamber of Commerce of America

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Aircraft Workers Donate Funds to Relief Agencies

America's aircraftsmen feel a sincere obligation to war and community charities for the work they are doing to help win the all-out war against aggressor nations.

The Aviation News Committee of the Aeronautical Chamber of Commerce of America announces that nearly every aircraft plant in the country has established one or more specific plans to coordinate donations by aircraft workers toward the charity funds.

Typical of this spirit was the result of Red Cross drives in many plants, which netted up to \$20,000 donated by employees at one concern. In addition to donations by employees, the aircraft companies as industrial units have contributed large lump sums to the Red Cross.

Community Chest drives at some aircraft factories established funds of several thousand dollars donated by employees. Other funds to which aircraftsmen have donated liberally in employe campaigns include those for the United Service Organizations and the March of Dimes.

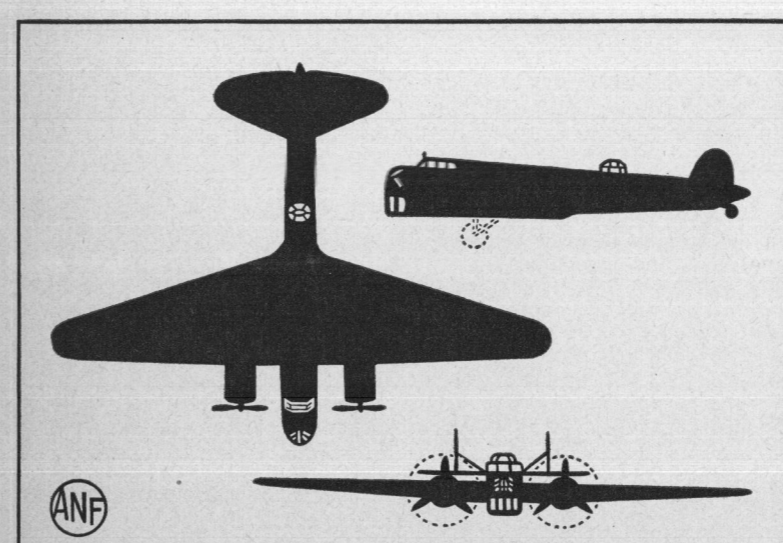
Within the past weeks several companies have taken a new approach to the charities donation problem as employees have joined "Buck-of-the-Month" clubs to establish permanent funds for charity.

At one plant the club was so organized that employees donated 25 cents a week to establish a trust fund for disbursement to worthy charities. The disbursements were in charge of an employe committee. Membership cards and buttons were being distributed to employees who joined the charity campaign.

RELEASE MARCH 2

Know the Enemy's Planes

JAPANESE "98" HEAVY BOMBER



The Japanese "98" Heavy Bomber, used by the Japanese Army, is illustrated in this fifth of a series prepared by the Aviation News Committee to aid in recognition of enemy aircraft. A low wing, cantilever, metal monoplane, this bomber has full retractable landing gear and wing flaps. Note the broad taper of the wings from rounded tip to fuselage, and twin tail assembly.

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Thousands of Firms in All States Help Build Planes

Additional Thousands Contribute to Warplane Production Through Contracts to Supply Small Parts and Materials

A.M. RELEASE MARCH 2

By Aviation News Features

(Names of specific aircraft manufacturing companies are withheld at request of the Army Air Forces.)

Already playing a major part in the aircraft industry's growing production program, the practice of subcontracting portions of the production work will tap even greater resources in every state during 1942.

A survey of the aircraft industry just completed by the Aeronautical Chamber of Commerce of America disclosed that separate subcontracts by aircraft firms are now approaching a total of 10,000.

In addition to this total, aircraft manufacturing plants have contracts with parts and materials vendors totaling nearly 20,000.

While the term "subcontracting" refers specifically to the work "farmed out" to other firms for construction of certain airplane parts, the term "vendors" applies only to the firms which supply such parts as nuts and bolts, rivets, wire, paint, etc.

MANY ITEMS INCLUDED

Items which most airplane firms have under subcontract include control surfaces, engine mounts, landing gear, fire walls, wing tips, bomb racks, mechanisms, seats, instrument panels and the like.

In many instances, of course, the totals of various aircraft companies for subcontracts and vending contracts overlap because of duplications, but the great majority of those totals represent individual concerns doing the work.

A typical example of the amount of this subcontracting work already underway is shown in the report of one aircraft company, which has 200 subcontracts for construction work and 1250 contracts with vendors supplying parts.

Parts for one particular airplane come from 254 well-known cities in 26 different states. In addition, all 48 states are represented in the list of vendors supplying parts for the same plane.

Particularly illustrative of aircraft industry subcontracting is the case of another firm, whose three divisions, building planes, engines and propellers, employ about 500 subcontractors.

IN 20 STATES

The engine division farms out approximately 60 per cent of its work to 200 plants in 20 states. While thousands of men work at this division, nearly five times as many are working on parts for the engines at other plants.

But this form of "spreading" the work is not limited to firms turning out finished airplanes. One company which manufactures intricate instruments for planes has 145 subcontractors and more than 400 vendors. More than a third of the completed work on these instruments is done by other companies. The subcontract work alone represents 240 man-years of work each month.

An itemized list of subcontractors who have abandoned civilian work for part in the vast airplane-production program would include former manufacturers of such articles as cream separators, printing presses, fishing reels, tin cans, cameras, sewing machines and cigarette vending machines.

Let's Go U.S.A.—Keep 'em Flying!

FATIGUE TESTERS

Four machines which have been run almost continuously for the past nine months at the rate of 10,000 revolutions per minute for the purpose of testing propeller blades are one of the features of the plant of the propeller division of the Curtiss-Wright Corporation. They are known as rotating beam fatigue testing machines. At the last computation, the engineers figured that one of the devices had run up a total of 322,500,000 revolutions.

Let's Go U.S.A.—Keep 'em Flying!

AIR FORCE MOVIE

The motto of the Royal Canadian Air Force is "Per Ardua ad Astra," or "through effort to the stars."

Now, under the cooperative plan whereby three companies will manufacture the plane, parts will be coming from firms under subcontract to those companies.

PRODUCTION SPEEDED

This outside production permits the larger companies to meet demands of accelerated production schedules which otherwise would have been impossible. Plant facilities which otherwise would have been idle in all parts of the country will be drawn into the production program in ever-increasing number.

In order to aid this program, most of the large aircraft companies maintain large engineering staffs, members of which are constantly working with the subcontractors to assure the greatest possible speed and accuracy of production.

Part of the year's work will be the tremendous education program which must be carried on by the prime contracting firms—the job of teaching these former civilian producers the fine tolerances and the delicate precision of airplane construction.

Economic welfare of the entire nation will benefit from the expanded subcontracting field of the aircraft industry as airplane work is carried more extensively into the idle shops of the nation to help the aircraft industry fill its quota of 185,000 planes by the end of 1943.

Production Pledge Given by Workers

Utmost Energy Promised By Aircraftsmen

WASHINGTON, March 2—(ANF)—Those who also fight, the half-million-man "army" of warplane builders, have pledged themselves to match the bulldog tenacity of MacArthur's "Bataan Battalion" and the other stubborn defenders of the United Nations in the production drive against the Axis.

Replying to an appeal by Undersecretary of War Robert Patterson, aircraft industry workers promptly telegraphed, telephoned and wrote group and individual expressions of full-out effort to the War Department.

The Undersecretary's message read: "The Army is calling on you soldiers of production to back up our soldiers in the front lines with every ounce of energy. The Army looks to you to provide the weapons of victory. The fighting weapons we lacked yesterday at Wake and Manila we must have today. Your contribution must be production and more production. America is confident of your answer."

Some of the answers: **Employes of Consolidated Aircraft Corp.:** "To the men in the front lines from the men and women on the assembly lines let it be said that our production is rising to the tempo inspired by their valor, that the weapons of victory shall be theirs."

General Manager, Allison Division of General Motors: "I am sure our employes appreciate their responsibilities. . . . With their continued cooperation Allison's contribution may still be expected to further increase."

Dale O. Reed, President, Aeronautics of Burbank: "Representing over 50,000 employes of Lockheed and Vega, I can assure you that, as soldiers of production, we are continuing their efforts to go 'over the top' production-wise."

Boeing Aircraft Co.: "All the energy at the command of each individual of this organization is dedicated to production for the defeat of America's enemies and the protection of American soil."

Douglas Aircraft Co.: You can count on Douglas to do its best to the very limit to provide the weapons so badly needed.

Many other similarly stirring replies were received. From the employes of Vultee Aircraft, Inc., came a pledge to use all overtime pay for the purchase of Defense Bonds.

Let's Go U.S.A.—Keep 'em Flying!

Huge Camera Simplifies Details of Production

BALTIMORE, March 00.—Capable of reproducing pictures on nearly any kind of surface, a giant camera has simplified many details of the vast new aircraft manufacturing program.

The mammoth camera, first installed by Glenn L. Martin Co. and later adopted by several other aircraft firms, does nearly three-quarters of a million man-hours of work each year.

Through the use of a secret emulsion which is spread on metal or any flat surface, the camera can reproduce in four minutes drawings up to 5 feet by 10 feet.

The camera takes up two entire rooms at the Martin plant. There it reproduces drawings, exactly to scale, directly onto working material from the original drawing. This eliminates the tedious process of scaling drawings by hand to the metal, wood, cloth or other material used for production.

Thus, drawings for aluminum components of the plane can be transferred directly to the emulsion-coated side of metal and workmen can start shaping the part immediately. The camera turns out about 200 separate pieces of work each day, or the equivalent of the work of 307 men during a year.

After exposing the emulsion-coated part, the developing process is much the same as that for an ordinary photograph, except that it is carried on in giant tanks each containing 100 gallons of special liquid.

