

MARVELOUS WORK DONE IN AIRCRAFT PRODUCTION IN U.S.

From Practically Nothing Last Year, Immense Industry Has Been Built Up Over Here.

AUTO FACTORIES BIG HELP

Difficulty Overcome and Substitutes Provided; Liberty Motor Is a Success.

At the meeting of the Society of Automotive Engineers recently at Dayton, Ohio, some light was thrown on what the motor plants were doing for the government in the way of airplane work. Howard Coffin told some interesting facts. He showed first that an order for motors for the French government was a year behind in the estimated time of delivery, although the drawings of the engineers and the sample engines were all brought to this country at the same time. When it is considered that the motor factories have absorbed the work of making motors for airplanes, and that they have continued also to turn out trucks and cars for foreign and domestic use, it shows that the industry is so big and so stabilized that it cannot be overthrown as the Tumor clubs throughout the country would have many believe.

If the motor plants could do in a year some of the remarkable things accomplished—and now told about for the first time—it is certain that they can continue to expand in aiding the government without handicapping the production of motor vehicles to any very great extent.

Some Real Facts
Among other things Mr. Coffin said: "Some 5000 or 6000 traifing machines have been built and, a couple of thousand machines perhaps in Europe. Construction for Europe has been delayed because of the unsettled conditions over there, owing to the drives in Italy, and on the west front, and to the shortage of materials."

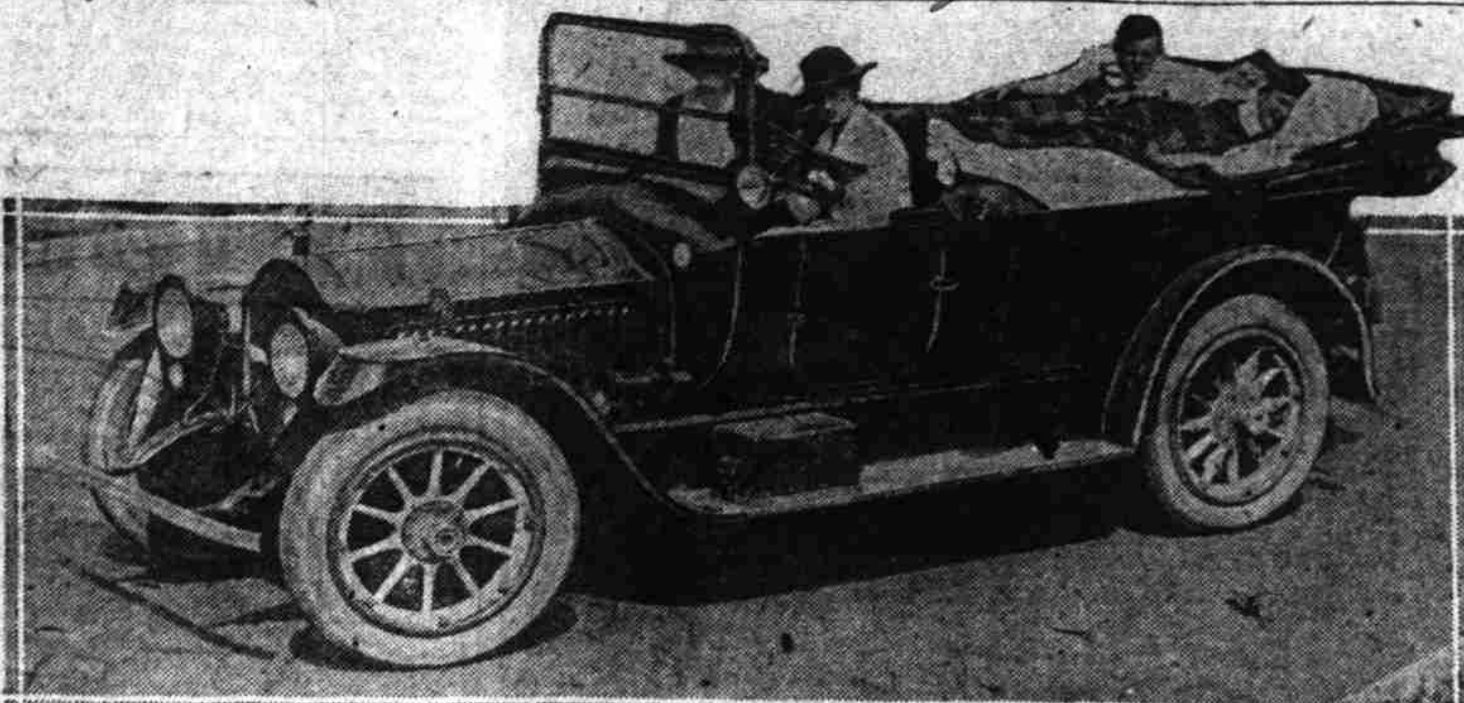
"Some 150,000 men are in training in the aviation service in this country, and there are 25 or 30 of the big training stations in operation. A laboratory in operation here in Dayton is one of the most remarkable developments of the whole air service, and perhaps most important of all, the mystery of aircraft production has been thoroughly exploded."

"Plants in this country are producing, and others will produce aircraft of standardized interchangeable designs, nearly as freely and easily as American plants have ever built automobiles. Those who visit the Dayton-Wright plant will see a fine example of this work of interchangeability of parts."

"Airplanes are being shipped from this country in a disassembled form without markings. The crates, when received on the other side, can be opened and the parts assembled without any regard to the building operation on this side, and as a result, a cable received only a few days ago stated that within a few hours of the receipt of a certain shipment upon the other side, planes were assembled and the engines running."

Getting Quick Results
"That is the way in which America will build airplanes. It has taken time to build the tools and the fixtures that have made it possible to manufacture in-

MOTOR CAR EQUIPPED WITH AUTO BED



The Fischer Auto Bed, a folding convertible carriage which occupies a minimum space of 30 by 6 by 8 inches and which is represented in Portland by Miss Emily Hyde and her sister, Mrs. C. Hyde, recently arrived from Fairbanks, Alaska, with headquarters at 86 Sixth street. The bed is especially designed for the tourists' convenience.

terchangeable parts. S. A. E. members with their knowledge of manufacturing and repair problems will realize what engine construction and airplane construction mean when it comes to keeping these machines in operation at the front, because no matter how many airplanes we ship to Europe, if the interchangeable repair parts are not there, and if the men skilled in maintenance are not on hand, the machines will do us little good.

After analyzing the situation and past experience from start to finish, it was decided that American engineers working in the American way and with American machine tool designers working with these engineers, results could be gotten months earlier than if foreign engines were put into production in this country. I think it is a fact that can be borne out by any representative of the British service that after three years of war, with some 10,000 in the main works, the leading British company is producing 50 engines per week; each develops 50 horsepower less and weighs 100 pounds more than the Liberty.

Output Increased
"Now that gives a little insight into some of the arguments leading to the design and putting into production of the Liberty engine. It is America's purpose to build engines not only for our own navy, our own army, but for foreign countries as well. There is a great difference between 50 engines a week and 50 to 100 engines a day, an output of one of a half dozen of the plants of this country plan to be producing inside of the next 90 to 120 days."

"Leaving aside all such accomplishments as increasing the spruce and fir production to some 15,000,000 feet a month, the construction of the flying fields, the building up of personnel, and remember this entire proposition started from minus zero last July. Leaving aside all of the accomplishments in the building of plants for the production of accessories—those who have seen the planes on exhibition and who will see them at the Dayton-Wright plant will learn that the engine and the airplane are perhaps the simplest parts of the job."

Three Major Things
"The wireless, wireless telephone, bomb-dropping apparatus, oxygen tanks for breathing, at high altitudes, electrically heated clothing, generators, flares for landing at night, scientific instru-

ments for recording speed, altitude, inclination, and a half dozen other things—synchronized machine guns—practically none of these were produced in this country a year ago. An industry has had to be created in almost every instance. "Just leave aside all these matters and perhaps three major things have been done. One of them is the development of the Liberty engine. When I say development of the Liberty engine, I mean, as Major Vincent told us in January, the production of a Liberty cylinder, which would be so perfect that it might go through the war without change, and which could be used in any number of combination of cylinders, on such engines as it might be decided to build. Let us call the Liberty engine one accomplishment."

Lines Substitute Best
"We have heard a good deal lately about the Irish situation in England and that the linen situation was tied up with it. The English aircraft production was dependent upon this supply. The development in this country of a substitute for linen made of Sea Island long staple cotton, which has in actual test been proved the superior of linen, is another of the great influences in the development of aircraft and the participation of aircraft in the war."

"A third one is one that we perhaps had to force upon some of our allies. Because of the spruce shortage we insisted that satisfactory aircraft could be built of Douglas fir. By force of necessity, our allies were obliged to begin using Douglas fir. The latest experiments have shown that Douglas fir is not only the equal of spruce, but is probably the superior, so that very much of the spruce difficulty will be removed."

"It has been an unfortunate handicap to the air services from the beginning that the matters of censorship have been so exercised that the truth of the difficulties and accomplishments could not be told. This very fact, I think, has been largely responsible for most of the exaggerated stories which have certainly been contributing causes to the misunderstanding of the situation now existing in many sections of the country."

Soccer Enjoyed
Among the extensive athletic activities of the employees of the Goodyear Tire & Rubber company, Akron, Ohio,

the game of soccer holds an unusually prominent position. The Goodyear team has just won the season's title in the city soccer league and a loving cup offered by one of the local newspapers. This is the third consecutive year that this team has won the championship.

Screen for Sedans
Those who complain about dust and dirt when sitting in a sedan might make use of the suggestion to install a Pullman type fine-mesh screen under the half open window.

Employs Women
The Federal Motor Truck company, Detroit, has started to employ women in its assembly department. Nearly 50 women are at work in this plant and are proving very satisfactory. The company is planning to add to the number.

BENT RIMS SOURCE OF INJURY TO TIRE

Loose Rims Will Also Throw Strain on Valve Stem and Trouble Follows.

With the extreme need of conservation of automobile tires being constantly brought to the attention of the nation's tire users, thousands of motorists who formerly little heeded repeated injunctions to consider their tires are applying the various recommended tire savers, that add so much to tire life.

It is characteristic of a great many motorists on the road, however, that they refer mainly to the tire itself, to the exclusion of other important elements that really have a vital bearing on the tire's life. And tires cannot be made to run out their allotted mileage except through the application of all tire saving principles.

"In the use of tires, the care of the rim, or its neglect, has a much greater effect than commonly supposed," is the declaration of J. Cunningham of the Portland Tire & Truck company, local distributor of Republic tires. "Bent rims cause a lot of trouble commonly attributed to other causes. I have known of tires to go out of commission before rendering 500 miles of service, due to a break in the tire just above the bead, caused by a bent rim."

"Loose demountable rims cause a lot of tire trouble. If one of the small wedges that helps to hold the rim tight to the wheel becomes loose or jiggles and the rim starts 'working' and gradually the other wedges work loose. Then the rim begins to 'creep' and the valve stem bears the entire strain. The result is the same as when a bicycle tire creeps—the valve stem pulls off and a tire change is unavoidable."

Night Driving on the Front.
In driving trucks along the roads leading to the battle front under cover of darkness headlights cannot be used; all concealment would be destroyed. To enable the drivers to keep in the road, rows of posts are set along the roadside. These are three feet high and painted white. They are visible even on the darkest night.

GEAROL

SAVES MONEY—UNCLE SAM SAYS SAVE Gearol Differential and Transmission Silencer and Gearol Spring Lubricant

are Efficiency, Economy and Satisfaction. Good lubricant is best for gears. Gearol Spring Ease increases tire mileage. Your money back if we don't prove it. If interested, send the card for more information.

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Gentlemen: Am interested in Gearol products. Please send me further information. I drive a—
Fill in plainly your address and drop in the mail.

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Maxwell Motor Trucks And The War Industry

"More Miles per Gallon"
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Maxwell Motor Trucks

Truck Chassis	\$1085
Truck Chassis with Cab and Windshield	1125
Truck with Cab, Windshield and Stake Cuts Body	1180
Truck with Cab, Windshield and Combination Box Stake Body	1175
Truck with Combination Box Body	1135
Truck with Supreme Canopy Top, and Windshield	1195

All prices F. O. B. Detroit.



55 per cent of the output of the seven big Maxwell plants is war work!

Every one of those plants is doing its patriotic duty—100 per cent.

We are frank to say we believe that is equally true of our competitors—we have yet to learn of a single shirker in this industry.

If there is anything more Uncle Sam desires done, we will tackle that too.

Meantime, and for the very reasons set forth above, we deplore the loose statements of panic-preaching publicists throughout the country.

These would close down the third largest industry in America on the grounds that it is a "non essential" industry.

No other industry is doing so much outside its regular sphere—doing it so willingly, doing it so rapidly and doing it so honestly as is this very motor car industry.

For a ship builder to make a few more ships; or for an ordnance plant to make more guns is only to develop their normal business.

But for a motor car factory to make ships entire and its part—and guns—and shells—and fuses—and caterpillar tractors—and mine anchors—and airplane motors, wings and other parts—that is doing things.

This industry is doing all that and more.

Detroit, the very center of the motor car industry—an inland city and one where, in normal times, we had no war industry—now is doing more war work than any other city in America.

And in our regular line we are also helping more than any other class of business men to solve the transportation problems at home and abroad—for we not only transport a very large percentage of our own raw material and finished product on its own wheels, but every truck—yes, and every passenger car too—helps by thousands of tons per year in carrying, formerly done by the railroads.

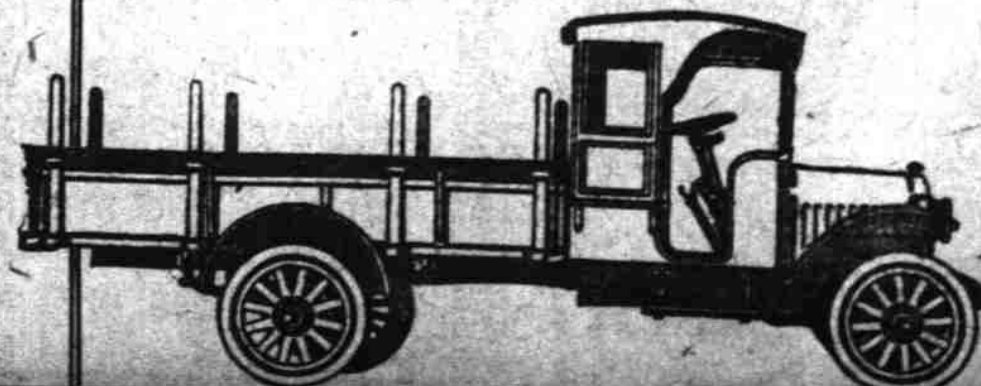
Loose talk is harmful at any time—it is particularly serious just now.

Let other industries do their part—do a tithe of what the motor car industry is doing—and they will be going some.

Meantime your own transportation problem, accentuated as it is by the war activities and the war prosperity of the country, can best be solved by an efficient, economical, reliable Maxwell Motor Truck.

C. L. Boss
Automobile
Co.

615-817
Washington St.,
Portland



CARS CHEAPER NOW THAN EVER BEFORE

Quality Improved and Cost of Production Is Cut by Able Organization.

"In view of the rapidly advancing cost of everything we buy, it is a rather startling statement that automobiles were never so cheap as they are today," says Vice President R. C.

Rosenhaw of the Mitchell Motors Company, Inc., Racine, Wis.
"When considering the cost of anything, it is dear or cheap according as the amount of money asked for it will buy a good deal or only a little of the other things we want. Thus, the amount of flour or meat or clothing or shoes one can buy today for the money represented by the price of an automobile is so much less than it was a few years ago that even in the face of the necessary price increases automobiles cost less than ever before."
"It is, of course, quite natural that this should be so, because the automobile industry is perhaps the most highly and efficiently organized in the country, outside of those industries largely controlled by a few great houses like oil or steel."



MORE CHEVROLET "490"

Automobiles Sold During June in Portland Than Any Other Car

"THERE IS A REASON"

Most for Your Money

\$814.50

PORTLAND (War Tax Included)

Electric Lights—Starter
Fine Lasting Finish
Standard Units Throughout

An economical, practical and lasting investment

REGNER & FIELDS

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IMMEDIATE DELIVERIES



HEIDER TRACTOR Burns Kerosene--Saves Gasoline

HERE'S the practical one-man tractor for Northwestern farmers. Easy to control, stop or reverse—all with one lever. So simple that a boy can do your plowing. Cheaper to operate, too. The HEIDER burns kerosene and saves gasoline for our Army.
One owner writes that he has plowed hundreds of acres with his HEIDER, using three fourteen-inch plow bottoms, and in one year has only had 40 cents' worth of repairs.
The HEIDER is unlike other tractors in construction, and, unlike them in the extra economical service it gives you. Built with special friction transmission—which means no gears to strip—fewer parts, less trouble, less chance of breakage, and lower upkeep cost. The HEIDER is the ideal tractor—suited to the soil conditions of the Northwest.

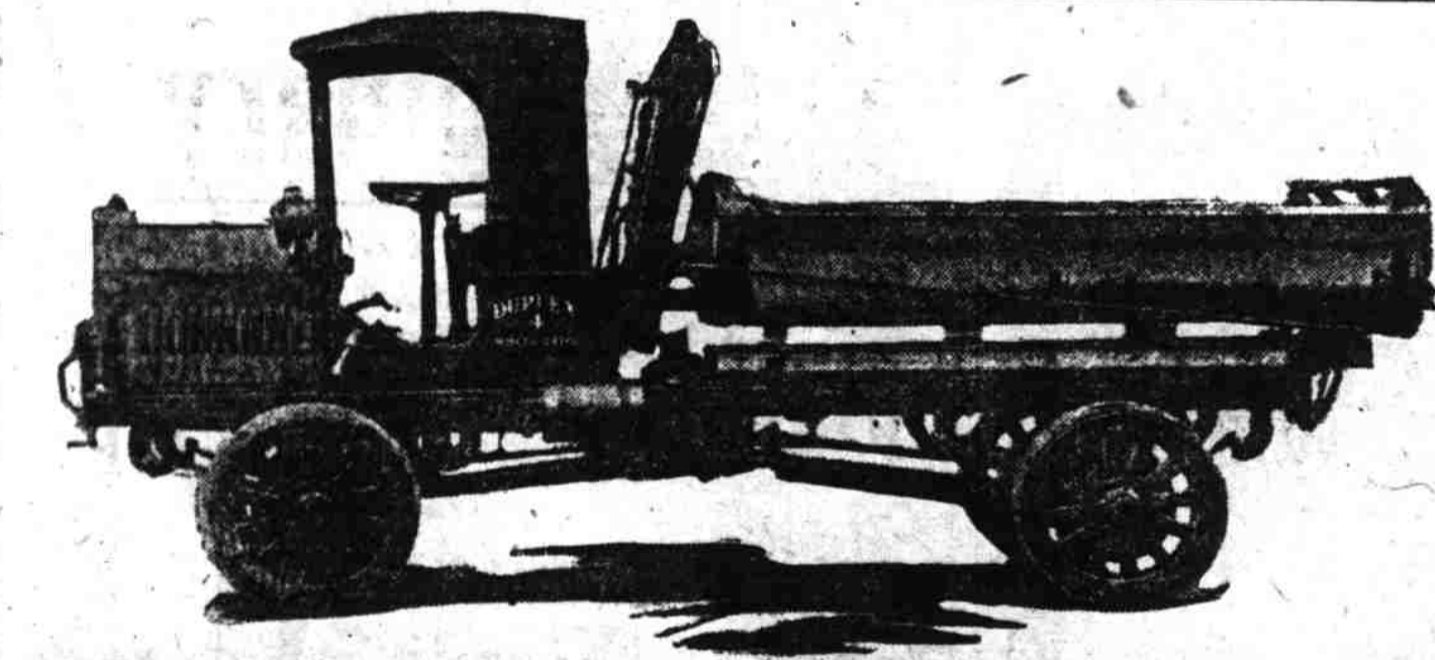
Write TODAY for our New Book entitled, "Owners Say So"—Know the economy of owning a HEIDER—the tractor that gives you all your ideals in one outfit—DO IT NOW!

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Boy Scouts Plowing With a Heider Tractor, East Moreland Addition, Portland, Ore.



DUPLEX THE ORIGINAL 4-WHEEL DRIVE TRUCK

The 4-wheel drive principle was originated by the Duplex ten years ago.

The practicability of the principle was demonstrated by the first model.

The Duplex shattered all existing records for hauling, hill climbing, and exacting road-ability under the severest conditions.

Today, the Duplex is a product of experience.

It is reducing haulage costs to the absolute minimum for contractors, lumber operators, fuel dealers, manufacturers, oil operators, mining companies, ice dealers, road builders, wholesale grocers, and pit and quarry owners.

And it is performing this heavy haulage work more economically than any other truck built.

A demonstration will convince you of the thorough practicability of the Duplex 4-Wheel Drive Truck for heavy haulage work.

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