

### FUTURE AIR LINER MULTI-WINGED IS VIEW OF EXPERTS

By W. E. Berchold  
(Associated Press Aviation Editor)  
ANN ARBOR, Mich.—(AP) Students of aeronautical engineering, whose hollers in airplane design may shape the future of air transportation, now have another wind tunnel laboratory in which they may test their toy-like models without the expense and danger of building full-sized planes.

Started in 1922, the University of Michigan's wind tunnel has been developed year by year until now its builder and master, Prof. Felix V. Pawlowski, says it is ready for a heavy research program that will include studies on types of airplanes radically different from those now seen in the air.

The controversy over the relative efficiency of monoplanes and multiplanes is far from ended, according to Professor Pawlowski, who believes that the monoplane's present popularity is a transitory whim of designers. He and an associate, L. V. Kerber, plan further research with multiplanes in the new Michigan wind tunnel.

"The monoplane is well adapted to the present stage of air transportation," Professor Pawlowski says, "but when airplane designers are called upon in future years to construct trans-oceanic planes big enough to carry hundreds of people, the multiplane—that is, the airplane with three, four, five or more wing surfaces—appears to offer greater possibilities."

Kerber already has carried on some experiments in the Michigan wind tunnel during the last three years with a quadriplane having four wings set back in tiers above each other. The model, developed to perfect scale of a full-sized machine, proved to have high lift efficiency and other characteristics favorable to operation.

Experts in the industry recognize that the universities must be depended upon for development of future aeronautical engineers. Aerodynamics and other specialized subjects in which the aeronautical engineer must have thorough training, probably can be taught with greatest ease and efficiency through competent university instruction.

Wind tunnels, which are the laboratories for research in aerodynamics—a highly technical field embracing the study of airplanes' flight properties—have a romantic appeal to the popular imagination. They make it possible to study exactly how an airplane will act in winds of velocities up to several hundred miles an hour, without ever building the full-sized airplane.

Toy-like models, built with great accuracy and precision, are used. Delicate wires suspend the models in the tunnel air stream, and sensitive instruments record the forces acting upon the model as if it were in flight.

The University of Michigan wind tunnel, designed by Professor Pawlowski, differs from most others at university, military and commercial, aeronautical laboratories.

It has a dual return for the air blown through the main throat of the tunnel, so that the air circulates constantly instead of being blown out one end. It also has a unique arrangement which makes possible an adjustment of the tunnel's throat to diameters of five, six, seven or eight feet. This makes possible flexibility in its use for research problems involving airstreams of various velocities up to 250 miles an hour.

### MILLION MORE CARS IN 1928 THAN 1927

WASHINGTON—(AP) Almost 1,000,000 more automobiles were produced in the United States in 1928 than in 1927.

This startling increase in production is based on the reports for the first 11 months of the year and an estimate for December, exact figures for which are not yet available.

Manufacturers forecast an even larger increase in 1929 because of added road mileage contemplated and the increasing demand for automobiles abroad.

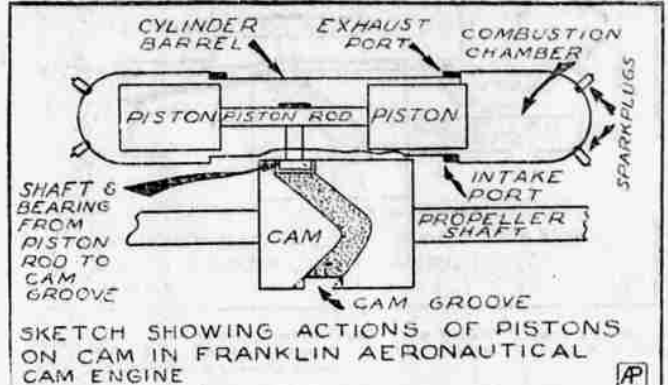
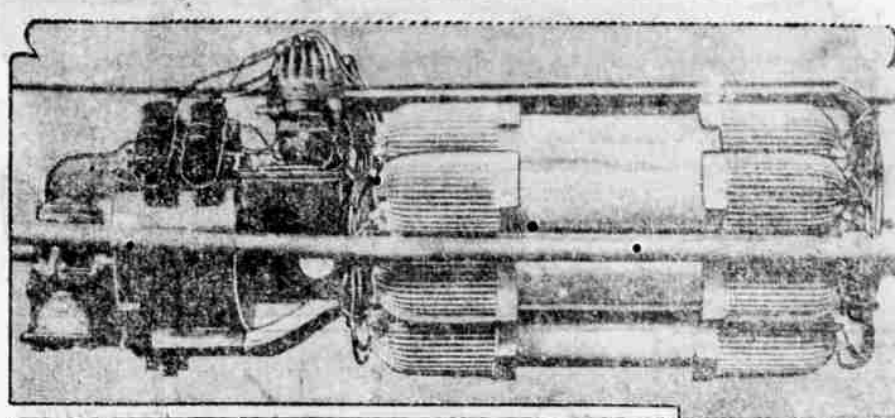
The production figures for each month in 1928 follow: January, 231,728; February, 329,796; March, 413,796; April, 410,104; May, 425,782; June, 396,796; July, 392,676; August, 461,298; September, 415,282; October, 397,096; and November, 256,936. The figures for December, still unavailable, are almost certain to exceed the 1927 mark for the twelfth month of 133,521 automobiles, experts say.

Although many factories were preparing for production of new models and slowed production of their 1928 designs, more motor vehicles were shipped from factories in the United States in November than in the same month in 1927.

Reports made to the department of commerce show that 256,326 motor vehicles, of which 217,256 were passenger cars and 39,680 were trucks, were produced in November. These figures compare favorably with 134,276 vehicles produced in the same month of 1927.

Approximately 4,300,000 automobiles were produced in 1928 while 3,401,326 were shipped from their factories in 1927. The 1928 production figures may pass the 4,000,000 mark when all reports have been made.

### Engine Without Crankshaft for Planes



SKETCH SHOWING ACTIONS OF PISTONS ON CAM IN FRANKLIN AERONAUTICAL CAM ENGINE.

An airplane engine (above), which has no crankshaft or valves, is the invention of George E. Franklin (right), Miles City, Mont., mechanic. It is to be manufactured in Kansas City. The diagram below explains how the engine transmits power.

KANSAS CITY—(AP) An airplane engine revolutionary in design and appearance, which has no crankshaft or valves and the pistons of which operate as shuttles to revolve a spiral cam on the propeller shaft, is under development here.

The engine, which weighs but 250 pounds complete, tests between 400 and 445 horsepower with the shaft turning 1200 revolutions a minute.

The idea of the engine grew out of trouble experienced with valve and crankshaft engines by George E. Franklin, Miles City, Mont., the inventor, while he was a final test mechanic for the government at Detroit during the war. He began working on the design in 1919, in which year he obtained his first patent.

The air-cooled cylinders, 16 of them, lie horizontally around an octagonal case, eight at each end. Two opposing cylinders are cast in a single barrel of aluminum alloy lined with steel.

On the inner side of the central section of the barrel is a slot through which a shaft and bearing deliver power from the piston rod to a spiral groove around a large cylindrical cam through which runs the propeller shaft.

The opposing pistons and rod connecting them are cast in one unit. At the center of the piston rod is attached the bearing shaft, which acts to the cam groove. As one piston fires, its opposing piston is on compression and fires immediately after the completion of the power stroke of its mate, giving a shuttle-like action.

Behind the cylinder case is the gear case, the distributors, supercharger and carburetor. The engine is 48 inches long and 16 1/2 inches in diameter.

Explaining the advantages of the engine, Franklin says the first has fewer working parts to wear out; smooth, vibrationless operation because of the cushioning of the power stroke at its end with the compression stroke of the opposing piston; less weight per horsepower; and compactness.

Every other cylinder of the engine may be removed and replaced with plates to make an eight-cylinder engine of approximately 200 horsepower.

Franklin's work is being financed principally by Miles City citizens. He is assisted by John T. Rogers, also of Miles City, young mechanical engineer.

Franklin was induced to come to Kansas City to build his engine through efforts of E. E. Porterfield, Jr., president of the American Eagle Aircraft company, who believes in its possibilities.

Franklin says the engine probably will not be placed in a plane until next spring after thorough tests.

Every other cylinder of the engine may be removed and replaced with plates to make an eight-cylinder engine of approximately 200 horsepower.

Franklin's work is being financed principally by Miles City citizens. He is assisted by John T. Rogers, also of Miles City, young mechanical engineer.

Franklin was induced to come to Kansas City to build his engine through efforts of E. E. Porterfield, Jr., president of the American Eagle Aircraft company, who believes in its possibilities.

### FRANCE GARNERS GOLDEN HARVEST FROM TRAVELERS

PARIS (AP)—A report by the commercial attaché of the British embassy calls France the greatest tourist country in the world and the real center for tourists in Europe.

He points out that the golden stream of tourist traffic brought about 2,000,000 persons to France in 1927. The report emphasizes that France took advantage of the post-war opportunity and was rewarded during 1927 by tourist expenditures, ranging from \$250,000,000 to \$500,000,000.

Hotels in France have been multiplied, enlarged and renovated in an extraordinary fashion. American and English visitors have been especially catered to. The great prosperity of the hotel business from 1919 to 1924 made it easy to find capital for investment in hotels in France.

Fifteen new modern hotels have been opened in Paris since 1925 alone. A dozen of them provide bath rooms with every room. Few and obscure are the hotels in Paris today which have not running water and central heating in every room. Throughout the provinces hotels which were primitive five years ago have been improved in the same manner.

Railroad companies have helped the tourist trade by creating new service of fast, luxurious express trains. These trains run in all directions over France. Anywhere the tourist wishes to go from Paris he may find a fast train.

"Pullman" and saloon cars have been multiplied. There are a dozen on the Paris European express, which rival fine trains in any country in the world and which make it pleasant to travel across Europe by way of France than by any other country.

Seek Roseburg Escape  
PORTLAND, Ore., Jan. 5.—(AP) Portland police were requested to be on the look-out Saturday for

Richard Avery, 36, who escaped last night from the temporary county jail at Roseburg, Ore. Avery was being held in the jail on a charge of burglary.

He made his escape by tearing up several floor boards.

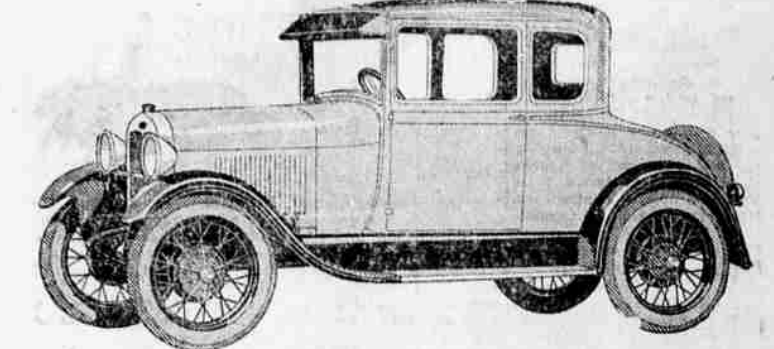
Classified advertising gets results. Reply for ordinary wear and tear.

# 35 New Fords

## Will Arrive Here This Month—You Can Now Get Prompt Delivery



### Place Your Order Now

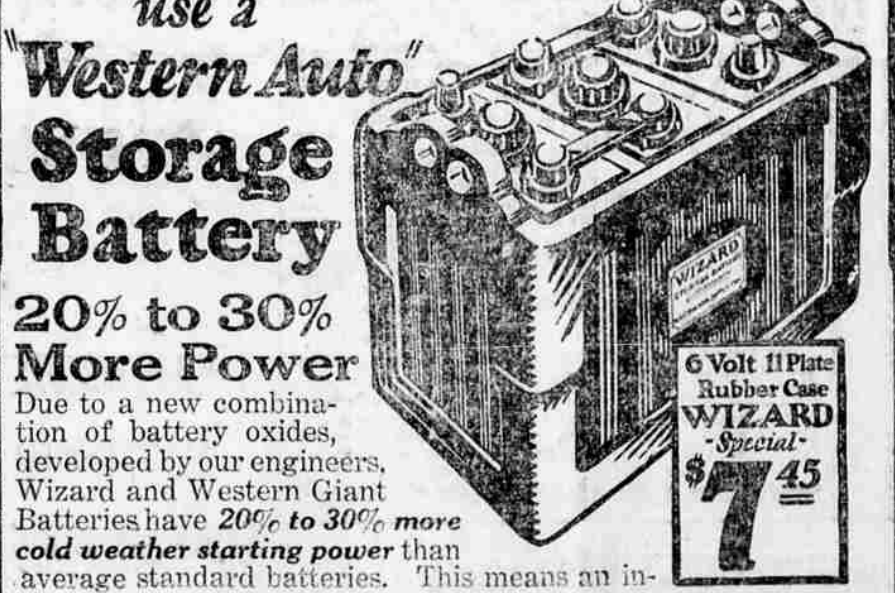


### Get a Full Year of Driving Pleasure on Your 1929 License

# C. E. Gates Auto Co.

Pacific Highway at Sixth Phone 141

## For a Quick Start — these Cold, Winter Mornings— use a "Western Auto" Storage Battery



### 20% to 30% More Power

Due to a new combination of battery oxides, developed by our engineers, Wizard and Western Giant Batteries have 20% to 30% more cold weather starting power than average standard batteries. This means an instant response of hot surging power at the touch of the starter button. It means faster spinning of your starter, and those extra turns that will start the coldest motor... and hotter, fatter sparks that fire every cylinder instantly and surely.

### Longer Life and Easier Charging, Too!

This new oxide combination, and "Golden Rule" construction throughout also give this additional winter efficiency... "Western Auto" Batteries have longer life and are more quickly and easily recharged by your generator. This is essential in winter, because you use your lights more.

### Lowest Prices in History!

These long-lived batteries—made exclusively for us by one of the world's oldest, largest and most reputable manufacturers of storage batteries—are now offered at the lowest prices in all our history.

### Absolute Satisfaction Guaranteed!

With our Iron-Clad Guarantee and our CUSTOMER IS ALWAYS RIGHT Policy backing them up, you are assured complete satisfaction. Our Trade-In Allowance on your old battery offers added savings, too.

Wizard Storage Batteries	Guaranteed 2 Years	Deduct Trade-In Allowance from These Low Prices!
6-11 Standard	8.45	8.45
6-13 Special	9.95	9.95
6-15 Standard	10.95	10.95
6-15 Special	11.95	11.95
6-17 Standard	13.95	13.95
6-17 Z	15.50	15.50
12-7 Standard	11.95	11.95

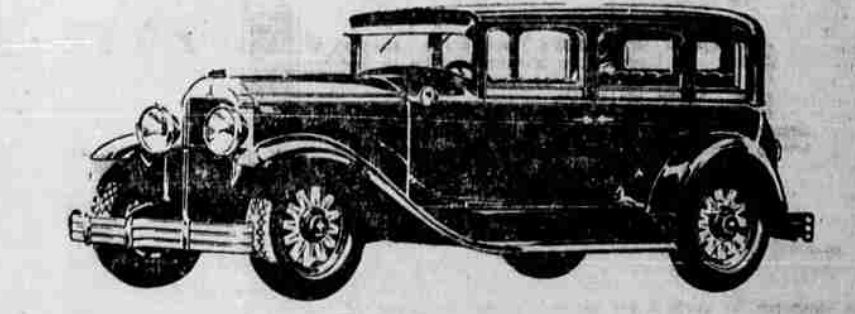
  

Western Giant Super-Strength Batteries	Guaranteed 2 1/2 Years	Deduct Trade-In Allowance from These Low Prices!
H 6-11 Western Giant	Guaranteed 2 1/2 years	\$11.95
H 6-13 Western Giant	Guaranteed 2 1/2 years	\$13.45
H 12-7 (12-volt) Western Giant	Guaranteed 2 1/2 years	\$16.95

"Western Auto" Service... More than 150 Stores in the West... **Western Auto Supply Co.** Cor. Main and Riverside

# The New BUICK

## as new and unrivaled to-day as the day it appeared



With all makes of cars on display—with the improvements for 1929 a matter of record—it must be plain to everyone that the new Buick with Masterpiece Bodies by Fisher merits final recognition as the most advanced automobile of the day!

Its arresting new body lines and contours stamp it immediately as the newest and most distinctive motor car style. Its new Valve-in-Head six-cylinder engine is not only the most powerful automobile engine of its size in the world but the leader in getaway, swiftness and stamina as well. Moreover, a host of new luxury factors makes the new Buick the most comfortable automobile to ride in and to drive.

Scores of thousands of buyers have recognized these facts and entered orders for the new Buick during the past five months. And scores of thousands of others are acclaiming Buick's advanced quality at automobile displays throughout the country.

Every comparison proves the new Buick an outstanding value—as new and unrivaled today as the day it appeared!

# BUICK

WITH MASTERPIECE BODIES BY FISHER

## SCHERER MOTOR CO.

40 North Riverside Phone 78

WHEN BETTER AUTOMOBILES ARE BUILT, BUICK WILL BUILD THEM

### NEW CHEVROLET PROVING POPULAR

The advance showing of the new 1929 six-cylinder Chevrolet cars at the Pierce-Allen Motor Co. last week was largely attended and the new cars met with universal satisfaction.

Crowds have greeted these advance showings all over the United States, and several million people viewed the new cars.

While the Chevrolet sales organization, expecting its greatest year in 1929, has been busy with the advance showings, special dealer exhibits, and car deliveries, the production forces of the company are equally busy behind the scenes.

Fifteen mammoth Chevrolet factories throughout the country are working at top speed turning out parts and assembling these parts into complete automobiles.

Everything is being pushed forward at peak capacity so that the thousands who have already placed orders will not be disappointed with deliveries. As soon as the cars come off the assembly line they are distributed to the dealer organization so that every Chevrolet dealer will have cars to meet sales.

The Pierce-Allen company have received several cars and expect two overloads more early this week.

### BYRD FLIER LANDED ONCE UPON COW

WASHINGTON—(AP) When pilots of the Byrd Antarctic expedition, now on their way to the South Pole, swap yarns on their air experiences, one former air mail pilot can tell of the time he landed his plane on a cow. Better yet he can back up his tale with the most unimpeachable record in the files of the post office department here.

Donn C. Smith, credited with having flown 465,715 miles during his seven years of government air mail service, had but a single accident.

"Dead stick—flying low—only place available—an cow—killed cow—wrecked plane—started over!" That is his brief but descriptive report of the incident as recorded in the government files.

Smith entered the air mail service May 21, 1920.