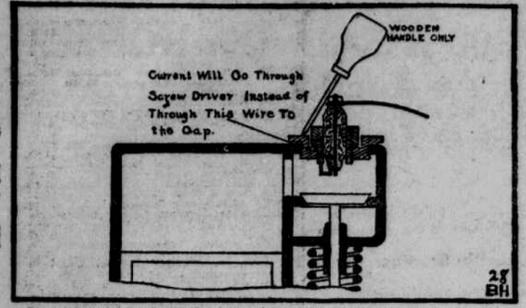


The Automobile Speaks

It tells you what it is, what it requires and it asks to be treated fairly.

By Frederick C. Guerrlich

Number 28. TROUBLE LOCATING. Engine Misses.



If your engine misses, find out why and correct the fault immediately. Running a car with a missing engine means a very severe strain on all the parts of it.

When the engine misses the first thing to do is to find out which cylinder is missing. This can best be done by making the cylinders miss one after the other, by short circuiting the spark plugs. Thus, if you were to short circuit the spark plug of cylinder No. 1, you would prevent the spark, and if the cylinder was not missing before it will now miss, and the missing of the engine will be doubled. On the other hand, if No. 1 cylinder was missing, you could not make it miss, and there will be no change in the running of the engine. So if you short circuit the plugs one after the other you will finally come to one which, when short circuited, will not cause the engine to run differently than before. This is the missing cylinder.

The illustration shows how to short circuit the plugs. By touching a screwdriver to the plug and the "ground," as shown, the current will go through the screwdriver and not through the plug, and so there will not be a spark.

Of the three essentials, ignition or compression is generally the cause of missing.

I told you that a fault in the primary circuit is liable to be the cause of an engine suddenly stopping, and that the secondary circuit was unlikely to be at fault. With a miss, the reverse is true, as if the primary circuit fails it will cause a failure of the spark in all the cylinders and not in one only.

What are the units in the secondary circuit? The coil, distributor and spark plugs. More than 50 per cent. of the time a miss is due to a defective spark plug.

The way to proceed, then, when your engine misses is to locate the cylinder which is missing, and then take the lead (wire) off the plug and hold it a short distance from the metal of the engine. If you get a spark, take out the plug and either replace or thoroughly clean it and reset the points and see if the miss disappears. If the miss does not disappear, then you must expect that loss of compression is the cause.

If you do not get a spark when you test the lead, the trouble is probably due to the lead being short circuited. In your case, these leads, for neatness sake, are carried in a shield or casing, and due to the vibration of the car, the insulation often is worn off where the lead enters or leaves this casing. An examination will show this, and a temporary repair can be made by wrapping the wire with insulating tape.

A loose primary wire, pitted or improperly set interrupter points will often cause a miss, but the miss will generally be irregular; that is, first in one cylinder and then in another, or perhaps every four or five revolutions.

Ignition being O. K. we must expect loss of compression to be the trouble. To see if you have loss of compression to any extent in the missing cylinder, open all of the compression cocks, and then close one on one of the hitting cylinders. If you will then slowly crank the engine you will be able to feel the compression in this "good" cylinder. Now, if you open this compression cock and close that on the missing cylinder, you will be able to compare the compression in it to that of the former cylinder.

Having determined that compression is at fault, first test the valve caps and spark plugs by pouring oil about them and watch for the bubbling, as explained before. Next see if the valve adjusting nut is not up too tight, as it may have worked up. Next see that the valve is not sticking and that the valve spring is not broken.

This failing to show a fault, the valves need grinding, or the piston rings are leaking. As a rule, you will know whether or not the valves need to be ground, as this must be done in the neighborhood of every 1,000 miles of running. When the piston rings of one cylinder leak, you will hear a sort of muffled hissing sound when climbing a hill.

A bad mixture will cause a miss, but the miss is generally an irregular one. The adjustment of the carburetor is liable to be the cause, but if your adjustments were right yesterday, they will be right to-day, unless they have been tampered with. Unless you feel sure that the adjustments are wrong do not touch them. The adjustment will have to be a little different in the winter than in the summer and on a mountain than in a valley.

While with most systems, a regular miss is practically never due to a fault in the primary, with the four unit system as used on the Ford cars, the fault is very liable to be in the primary, as with this system there is a coil for each cylinder and a wire for each coil. To see if the wiring is at fault, take the primary wire of the missing cylinder off the timer or commutator and touch it to the "ground" while engine is idle and while on the battery, or if you have no battery, take the secondary off the plug and make the test with engine running on magneto. If the coil vibrates everything is O. K. Should the coil fail to vibrate, change the coil around with another coil, and see if the new coil will vibrate. If it does, the former coil was at fault, probably in the adjustment of the vibrator points. If the new coil does not vibrate then the trouble is in the wire.

MEN WITH TUNED EARS TEST WILLYS-KNIGHT

"It takes tuned ears to tune a motor," said W. D. Stewart, manager of the Willys-Overland branch in New York City, in discussing modern methods of manufacture the other day.

"As the motoring public generally realizes to-day, the automobile is a 'shooter' depends upon his sense of hearing to discover quickly any motor ailment.

"These men, who make exceptionally good work because of their ability to judge a motor merely by the sound waves produced when it is running, are, of course, pointed to with pride in each factory. But the testers of Willys-Overland Company are probably the most famous of America's final testers through the fact that they must pass upon motors which are so desired and built that they are exceptionally quiet when in operation.

BACK AGAIN ON AUTO ROW.

After an absence of six months, due to illness, the many friends of Burton Brown, automobile editor of THE SUN, will be pleased to hear of his recovery and of his return once more to Automobile Row, beginning Monday, October 2.

YALE BATTERIES

\$19.60 **\$21.70** **\$26.25**

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 - LONG ISLAND: CORONA—RAY VIEW GARAGE, 90 Jackson Ave. LOGUET VALLEY—PARK HEIGHTS GARAGE. BABYLON—SOUTH SHORE GAR. BRIDGE PLAZA GARAGE. ORADELL—ORADELL GARAGE. SECAUCUS—S. F. FLECK, 1205 Paterson Plank Road. MONTVALE PARK GARAGE.

KENYON EQUIPPED CAR MAKES CALIFORNIA TRIP

An interesting account of a motor trip from New York to California has just been received by Harry H. Clark of the Kenyon Company in Brooklyn from C. Thomas, who made the trip in a Nash car equipped with cord tires.

The trip took six weeks, and is best told in the words of Mr. Thomas, as follows:

Left New York May 2 for California. Went from New York to Philadelphia, from Philadelphia to Pittsburgh. Crossing the Allegheny Mountains washouts were frequent. Starting out on the Santa Fe trail we had good weather most of the way, and went through some of the oldest cities in the United States. The road from Santa Fe to the Grand Canyon was very rough up grade all of the way. It was very evident from the great number of discarded tires found on this road, some hanging on trees (\$8 by actual count) that those ahead of us had many blowouts and discarded the old tires to decrease the weight of the car.

From Grand Canyon to Kingman, Ariz., the road is very rough and rocky, when there is a road at all. From Kingman, Ariz., to San Bernardino, Cal., it is continuous desert, where water is at a premium, selling at ten cents a gallon.

After crossing the desert in California the roads are in fine condition and driving is a pleasure. At Cheyenne we totaled 8,300 miles on the tires we left Brooklyn with.

We got four new Kenyon cords from the National Rubber Supply Company at Denver, and proceeded to Colorado Springs, Pike's Peak and Manitou. In this region is the Garden of the Gods, the Cave of the Winds and other natural wonders.

BUSINESS BUILDERS NOW HANDLE MOTOR CONCERN

As a matter of general interest, it was made known to-day that the expansion of the Daniels Motor Company is being financed and managed by the James W. Elliott's Business Builders, Inc., and that in connection with this expansion an advertising campaign is being launched which is particularly significant at a time which is called by some a period of depression that such an expansion is being undertaken.

WORK AT STANDSTILL ON VEHICULAR TUNNEL

Friction between the New York and New Jersey Tunnel commissions over minor details was stated to-day by Theodore D. Pratt, general manager of the Motor Truck Association of America, Inc., 319 Broadway, New York City, as the reason why the work was at a standstill on the vehicular tunnel between New York and New Jersey.

At the September meeting of the directors of the Motor Truck Association of America, Inc., 319 Broadway, New York City, the general manager was instructed by the directors to find out why no progress was being made in the digging of the vehicular tunnel between New York and New Jersey.

PASSENGERS CARRIED BY TRACKLESS TROLLEY

Through the combined efforts of the Detroit City Railway Commission, the Packard Motor Car Company and the Westinghouse Electric and Manufacturing Company, another valuable contribution has been made to the study of passenger bus operation. This new development is an improved, electrically driven, trackless trolley capable of hauling a minimum of thirty passengers and of attaining a speed of more than twenty-five miles an hour.

COLE BRAKES BETTER THAN A. A. STANDARD

The most efficient brakes ever developed for automobiles are standard equipment on all the new Cole Aero-Eight models. "The new brakes were subjected to a series of tests a few days in Indianapolis. In every instance a standard Cole \$70, fully loaded, bettered the standard of braking power fixed by the American Automobile Association.

BIDDLE-DURANT CO. OPENS N. Y. SHOWROOM

On May 31, 1921, it was announced that the total assets, including the factory and machine equipment of the former Biddle Motor Car Company, located at Fifth Avenue and 143d Street, New York City, had been taken over by a very well known group of men and that production would be started very shortly on the new models of this well known car with many decided improvements.

Since this announcement the new company has been reorganized and is now known as the Biddle-Crane Motor Car Company and a limited production has been going on, all chassis being sent to Cleveland, where they are being equipped with bodies made by the Baker-Rauch Coach Corporation.

Mr. Frederic A. Crooks, who at the time of the first announcement was general sales manager, has been made vice-president and factory general manager of the new organization, as well as in charge of sales.

As part of the progress Mr. Crooks announces that a new company has been formed for the exclusive sale of new Biddle cars in New York City, Brooklyn, Yonkers, Long Island, Staten Island and Westchester county, which will be known as the Biddle-Durant Motor Sales Company, consisting of Mr. Lawrence Durant as president, Mr. Leslie H. Bradshaw as secretary and treasurer and Mr. Duncan C. Pell, Jr., as vice-president.

NEW REO MODEL ARRIVES IN NEW YORK

George Stowe, general manager of the Reo Motor Car Company of New York is now busy exhibiting the latest Reo model at the New York City headquarters, 54th Street and Broadway, Manhattan. This is the new light seven passenger car, one of the Series B class, and in introducing the same the company has made a reduction in price of from \$1,800 to \$1,455, complete.

Distinctive features are noticed in the car at the first glance. Two extra seats fold into the back of the front seat, and between the seat compartments there is a small package compartment with a walnut finished panel. The rear cushion back is a separate assembly which can be taken out when desired and has a compartment in which are carried the top curtains.

Commenting on the new car Mr. Stowe says: "The car is ideal as a family automobile. It is light, not cumbersome or topheavy and it is economical."

THE DORT CONTEST CONTINUES ITS INTEREST

Crowds gather daily and nightly at the showrooms of the Dort Motor Car Company at Fifty-eighth Street and Broadway, where the prize coupe which the Dort Motor Car Company is going to award to the most popular woman motorist is on exhibition. Surrounding the coupe are the photographs of the beautiful contestants in the popularity contest: Hazel Dawn, Violet Heming, Marilyn Miller, Carol McComas, Neysa McMein, Eleanor Painter, Francine Larimore, Ann Pennington, June Walker, Lydia Lipkowska, Vera Michelsna, Antoinette Luescher, Helen MacKellar, Vivian Martin, Elaine Hammerstein and Hope Hampton.

The Miller Tire Company, drawn into the spirit of the contest, has announced that it will present an extra tire to the winner. The Stanley Insulating Company is presenting a seal leather vacuum bottle. Putnam's, the publishers, will award to the most popular woman motorist its popular book of the season, "The Cruise of the Kawa."

'BATCH' WAS BURIED WITH MASONIC RITES

The late Amos G. Batchelder, former executive chairman of the American Automobile Association, who was killed in an airplane accident on May 28 last, was buried last Friday at his old home at Attica, N. Y. The body was taken from the receiving vault at Forest Lawn Cemetery, Buffalo, at 1 o'clock and carried over the new Batchelder highway to Attica.

PROGRESS BEING MADE ON CONDUIT HIGHWAY

Word has come from the State Highway Commissioner at Albany to the Automobile Club of America, that the preliminary inspection by the engineers of the department of the route of the Conduit Highway is well under way. Representatives of the department made their first trip over the line several weeks ago and their reports are about ready for submission to the Commissioner.

Herbert S. Sisson, head of the State Highway Commission, accompanied by Fred W. Sarr, First Deputy, expects to make a personal investigation of the route early in November.

This news will be most welcome in motoring circles throughout the metropolitan district. The opening of the Conduit Highway will directly connect the Highland Park district in Brooklyn with Amityville.

VELIE MOTOR COMPANY REDUCES CAR PRICES

Effective October 2, the price of the wonderful Velie model is \$150 less than the previous exceptionally low cost. At only \$1,235 motorists can now secure the same model Velie that made its famous trip recently to the bottom of the Colorado Grand Canyon and out again under its own power. The choice of several colors, black or gray leather upholstery, nickel trimming and other options more than satisfies an owner's desire for an individual car.

The Biddle-Crane Motor Car Company

142nd Street and Fifth Avenue, New York City

Announces

THAT the franchise for the exclusive sale of Biddle motor cars for New York City, Brooklyn, Yonkers, Westchester County, Long Island and Staten Island has been granted to the

Biddle-Durant Motor Sales Company

229 West 57th Street, New York City,

with Mr. Lawrence Durant, President; Mr. Duncan C. Pell, Jr., Vice-President and Mr. Leslie H. Bradshaw, Secretary and Treasurer.

On and after October fifth, a complete exhibition of the Biddle chassis, equipped with several styles of bodies by the Baker-Rauch and Lang Company, will be on display at the above address.

Important

The Biddle-Durant Motor Sales Company is the only authorized representative of the Biddle car in the above stated territory, all previous agency contracts having expired.

By
 Frederic A. Crooks,
 Vice-President and General Manager,
 Biddle-Crane Motor Car Company.

DORT

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Have You Ever Seen A Real Coupe?

Come up to our salesrooms and see a real coupe as Dort builds it.

It's the famous Dort car New York's most popular woman motorist will drive after October 10th—when the great popularity contest will be decided.

It's a roomy, comfy, sturdy, beauty-car — one of the "family" of Dorts now on exhibition — an aristocrat among popular priced cars.

Own a Dort Coupe and—
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 —turn in crowded streets as easily as pouring coffee from a percolator—and—
 —no scowl from the traffic cop!

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Here is the final answer to your question, "Which car gives me the utmost value for every dollar of its cost?"

For the 1922 Davis is a car of extraordinary ability, performance and beauty at a price that is now lower than a car of like design, of equal style and distinction and ability has ever sold!

We have been building fine automobiles for twelve years and the 1922 Davis is our greatest car, and its price is lower.

The Davis has always been "Built of the Best." We have steadfastly refused to build a car on the basis of price alone — price has always been a secondary consideration to quality. And now, in the 1922 Davis, we have produced a car of Davis quality, of Davis character, and of Davis reputation—at new low prices that set a new standard of value—the very maximum of value for the money.

See the beautiful new 1922 Davis and compare it with any car, by any standard. Judge it by its beauty, performance, style, value—and now by its price. And then decide!

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