Roadside Electrical

by Tom Endy

On just about any Model A tour a car will pull to the side of the road because the engine quit. The problem is usually electrical or lack of fuel. Ninety percent of the time it is electrical. When it is determined it is electrical there is sure to be someone in the crowd that suggests that the condenser be replaced. Over the years I have observed numerous condensers replaced, but only one that was the actual cause of a failure.

Most of the time the failure is due to the loss of battery voltage to the ignition points. This can be determined very quickly with a trouble light. Battery voltage is routed directly to the terminal box on the firewall from the battery. Battery voltage is present on both of the two fractured wing nuts because the ammeter straddles the two wing nuts.

From one of the terminal block wing nuts battery power is routed directly to one of the primary terminals of the coil. Voltage can be detected with a trouble light at both fractured wing nuts and at the black wire on the coil primary terminal. This is the first thing that should be checked.

Voltage will also be found on the other primary terminal of the coil where the red wire is attached if there is no current flowing through the coil. This terminal should also be checked with the trouble light. With the ignition switch turned off the trouble light should light indicating there is voltage present at this terminal of the coil and no current is flowing through it. If the light does not light it is an indication that there is a short to ground between the coil terminal and the ignition key switch and current is flowing through the coil due to the short.

Assuming there is no short and the trouble light lights at both coil terminals turn on the ignition. This should put battery power down to the ignition points. If the points happen to be open the trouble light will remain lit, if the points are closed the trouble light will not light. Open the points and place a piece of paper between them. With the ignition switched on put the trouble light on the arm of the points, it should light. If it does, the car should be able to start right up.

However if there was an electrical fault that caused the engine to quit it is likely that no battery voltage will be found at the arm of the points.

Between the red wire on the primary terminal of the coil and the ignition points there are a number of places where the circuit can be easily shorted out.

There is a long list.

1. There could be a short at the ignition switch.
2. There could be a short in the pop-out cable.
3. There could be a short at the lower plate in the distributor.
4. There could be a short at the wire that connects the upper and lower plates in the distributor.
5. There could be a short at the connection to the points in the distributor.
6. There could also be a shorted condenser, but highly unlikely. These are all potential electrical fault areas.

A short anywhere along the line from the coil primary terminal where the red wire attaches, to the arm of the points can be easily detected in little time with the trouble light.

However, once it has been determined that a short exists between the coil and the ignition points, what can be done about it?

This is where preparation comes into play. Every Model A person, in addition to carrying a trouble light, should also carry with them a spare distributor that has been previously timed to the car engine and road tested. A bypass cable should also be carried.

Instead of trying to find the actual failure mode, it is easier to bypass it and look for the actual fault later when the car is back home in the garage.

Once it has been determined that a short does exist, remove the existing distributor and replace it with the previously timed spare. Attach the bypass cable to the spare distributor and tie off the pop out cable. Remove the red wire from the primary coil terminal of the distributor and clip the bypass cable in its place. The car should start right up. Keep in mind you will have to unclip the bypass cable from the coil in order to shut the engine off because the entire ignition circuit has been bypassed.



A trouble light can be purchased at any auto parts store. They work on both 6-volts and 12-volts



A bypass cable can be made from a discarded pop-out cable or purchased from Bratton's. Part number 16360, $18.80



A spare distributor properly timed to a given engine will retain the timing as long as the center screw is not disturbed and can be installed back in the engine and does not require re-setting of the timing.



With a piece of paper between the ignition points, and the key turned on, the trouble light should light indicating battery voltage is reaching the points.



The by-pass cable is installed in the spare distributor and clipped to one side of the coil where the red wire was removed.



The unused pop-out cable is tied off out of the way. The clip lead will have to be removed to shut the engine off.