

To Kill A Battery!

by Tom Endy

Model A Ford battery:

The battery in a Model A Ford tends to not last as long as one in a modern car. The reason is the inactivity. Cars that are driven daily usually keep the battery fully charged. Batteries that sit around less than fully charged tend to fail sooner.

A sneaky leaking diode:

One of the things that will drag a battery down is a leaking diode. Model A Fords did not have diodes back in Henry's day. Today many owners have installed a diode in the generator cut-out, or replaced the generator with an alternator. An alternator has six diodes in it. If you drive the car daily you might not even be aware you have a leaky diode. However, if you let the car sit for a long period of time it will pull the battery down.

The diode:

A diode is a device that when installed in an electrical circuit will allow current to pass in one direction but not the other. Another way of stating it is that it has a low resistance in one direction and a high resistance in the other direction. The high resistance direction, however, is not absolute, and a very minute amount of current is able to pass in that direction. The amount is so small as to be almost undetectable, and to a car driven daily it is of no consequence.

The cut-out:

The purpose of the cut-out on a Model A Ford is to disconnect the battery from the generator when it is not rotating. A non-rotating generator would be a dead short on the battery and would discharge it very quickly. There is a single set of contacts inside the cut-out. When the engine is running and the generator is rotating the contacts close automatically so that the generator will charge the battery. When the engine stops the contacts open automatically. After many years of service the cut-out contacts can become stuck together, this is especially true with the poor quality reproduction cut-outs being offered on the market today. Thus became the reason for the cut-out diode modification. The diode does not have contacts, but it can still fail. Many times the failure is subtle and is manifested in a leak instead of a dead short.

The alternator:

An alternator is a device that produces AC power. In order to convert it to DC power for use in a car six diodes are installed as a rectifier circuit. When the alternator is not rotating the diodes prevent the battery from discharging through the alternator exactly the same as does a diode in the generator cut-out. If any one of the six diodes develops a leak it will pull the battery down.

The ammeter:

The ammeter on the dash will indicate if there is a severely leaking diode. When you shut the engine off the ammeter should be zeroed out. If it is deflected slightly negative, something is drawing current. However, a leaking diode may not be leaking enough to register on the ammeter.

An easy check:

Most inexpensive volt-ohm meters (\$10. or less) have a milliamp scale. The one I have has a 250-milliamp scale. This equals one quarter of an amp. One quarter of an amp will not register on the dash ammeter, but it is enough to kill your battery. Pull the fuse out of the holder on top of the starter (it is prudent to have one installed) and place the meter probes across the fuse holder with the meter set to the milliamp scale. The meter will measure the current drain. The six-volt positive ground alternator on my Model A has one or more diodes leaking 200 milliamps and it did kill a battery.

Pull the fuse:

Anytime you park your car for an extended period of time, or even overnight, it is a good idea to pull the fuse and stand it on it's head at one end of the holder. If you do have a leaking diode somewhere the absence of the fuse will prevent it from draining your battery. The six-volt positive ground alternator on my Model A still has a leaking diode, even after I installed a new battery. It may have been that way for a number of years, however it puts out power just fine. One of these days I may get around to fixing the problem, but for now I just make sure I lift the fuse when I am done driving for the day. ☺