

## CAUSES OF BATTERY UNDER CHARGE AND FAILURE

### Driving Habits

Excessive stop, engine shut off, and go driving with heavy electrical demands - rear window defogger, or AC on, high blower motor speed, etc. Talk to the driver!

Excessive idling with heavy electrical demands. Today's systems are engineered so cost effectively, that extended idling with certain loads on will not allow the generator / alternator to "keep up" with demand.

### Conditions That Have Changed The Battery Chemistry

Low electrolyte level in battery cells - Visually inspect each cell in an open top battery - if sealed, a load test will find this.

Battery could have been completely discharged for the third time in its life. Talk to the driver!

Worn out from "old age" - battery is sulfated. A load test will find this out, or you can find this out if while charging, the voltage across the battery reads 16v or more for an extended period of time with a good charger, provided you know the generator / alternator and all of its connections are good.

### Parasitic - Key Off - Drain

What is it? Constant drain on the battery in excess of engineered parasitic drain.

What can cause it?

Hood, trunk, or glove box light left on and you don't see it. Check these out!

Shorted QUAD DRIVERS in a computer.

A computer that cannot shut down. .

Diodes leaking in the generator.

Driver accessories hooked to "hot at all times" B+. Talk to driver! Do a visual!

Moisture across a top post battery. Do a visual, clean the top of the battery.

Interior light rheostat "clicked" all the way on - driver unaware. Check on it.

Vehicle has not been operated for a long period. A vehicle sitting for 2 months @ 32°F, most likely will "self discharge". Ask the owner.

### Vehicle Electrical Load Demands Altered By The Owner.

High amp draw components as aftermarket equipment. Electric wenchers, after market rear window defogger , etc. Check it out, ask driver.

### Under Capacity Battery Installed As After Market.

Battery is simply too small to keep up with demands. Its' capacity does not match original equipment. Check what is in the vehicle against what was originally in the vehicle.

### Generator / Alternator Is Under Capacity or, Not Working As Designed.

After market generator / alternator does not match original equipment.

Generator / alternator wiring or internal circuitry prevents it from charging.

### Shorted Cell

A shorted cell is caused by material that has flaked off the plate in the cell and fallen to the bottom of the cell. When enough material accumulates, it can touch the cell plate material and short it out. A voltmeter that reads 10.5V or less on a "fully charged" battery is an indication of a shorted cell. Batteries that are not tied down with a solid hold down strap are subject to this type of failure.

### Opened Cell Connecting Top Strap

Zero volts across the battery tells you that one of the battery straps between the plate cells has opened. This is usually caused by a defect in manufacturing, but could be brought on by stressing the case.