READING THE AMMETER SCALE

1. No movement of the pointer with the ignition key turned "on" and the engine is being started or a steady "Discharge" reading. Engine fails to start.
With ignition current flowing through the ammeter, the pointer should fluctuate as the engine is being turned over, indicating the ignition breaker points are interrupting the flow of current in the primary ignition circuit. See that the key is turned "on". Check the ignition breaker points to see that they open and close as the engine is cranked. Check for loose connections at the ignition coil terminals, junction box terminals and the ignition switch. If a normal "Discharge" reading is indicated when the lights are turned "on" and the starter motor operates normally, the possibility of loose battery or starter switch terminals is not too likely. A small steady "Discharge" reading might indicate ignition breaker points that fail to open, a completely "shorted" ignition condenser or a "short" at the flexible wire between the plates inside the distributor body.

2. No "Charge" reading while the engine is running or idling rapidly to normally allow the generator to produce charging current for the battery.
An open generator circuit, possibly a broken wire in the generator, brushes failing to seat on the commutator bars, open generator windings or a loose output terminal. Failure of the cut-out contacts to close. The latter may be checked with a "jumper wire", connected to each cut-out terminal. If the ammeter indicates "Charge" at a fast engine idle, cut-out failure is indicated. In an emergency, the "jumper wire" may be left in place across the cut-out terminals. The "jumper wire" must be removed when the engine is stopped to prevent generator failure. If no reading is seen, replace the generator.

3. The pointer indicates full "Discharge" when an electrical circuit is turned "on".
The ammeter indicates full "Discharge". Cut-out contacts fail to open, disconnect either terminal on the cut-out as the battery will discharge through the generator burning it out. A possible "short" in the instrument panel, main wiring harness or lamp housings. Turn all switches "off". If the "short" is still present as indicated by the ammeter or smoke from wiring, disconnect the battery cable at the grounded end. In case of a real emergency, disconnect the battery cable at the starter switch terminal or cut the wire running from the starter terminal to the junction box. To locate the "short", disconnect suspected electrical circuits, unplug headlights one at a time, tail lamp plugs, horn wires, instrument panel wires, etc. As each circuit is disconnected, touch the battery cable to the battery post, if a spark is seen, the short is still present. All switches must be "off". Make a visual check for burnt wiring also.

4. The pointer indicates an abnormal "Discharge" with the engine idling or stopped.
Check the generator cut-out contacts for failure to open.

5. A small "Discharge" reading is indicated with the engine running rapidly, increasing with the use of lights or horn.
The generator is not connected to the battery circuit due to loose connections or cut-out failure. Possible generator failure or a broken fan belt. If the fan belt breaks, engine temperature will rise. These two indications will say "Broken Fan Belt" without raising the hood!

6. No "Charge" reading with the engine running rapidly, followed by intermittent "Charge" readings on the ammeter scale Cut-out contact may be too great, resulting in the opening and closing of the cut-out contacts as the generator output varies with engine speed.

7. The engine cuts out intermittently or stops after running a short time with fluctuations of the pointer on the ammeter scale.
Loose terminals at the ammeter or inside the junction box. Tighten the ammeter stud nuts after the wires are removed. Then tighten the nuts for the terminals of the wires firmly. Lock washers will help keep connections tight. Feel the instrument panel around the ammeter, loose connections create heat, indicating trouble at the ammeter. This is a common source of trouble that is easily overlooked.

Conclusion

Learn to read the ammeter scale when everything is normal. This will be very helpful in reading the ammeter scale when things are abnormal.