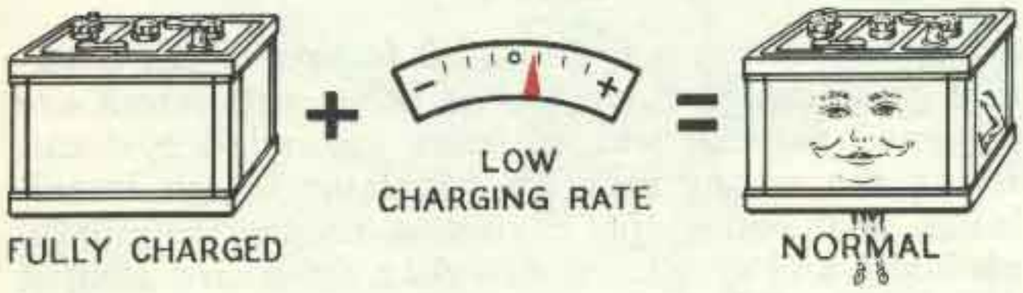
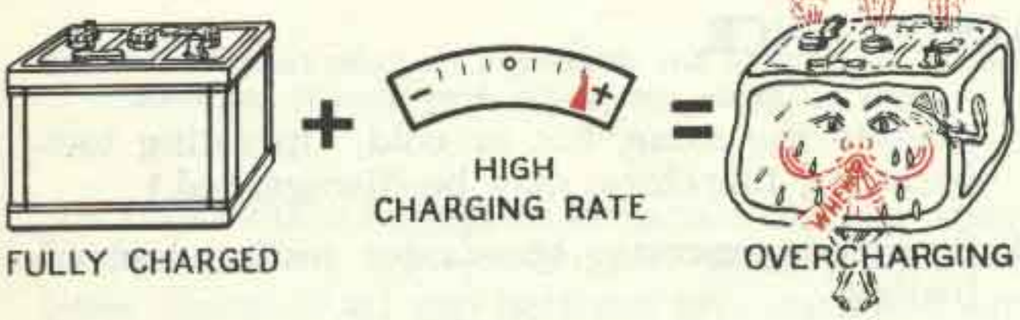
QUICK CHECKS OF GENERATOR AND REGULATOR

In analyzing complaints of generator-regulator operation, any of several basic conditions may be found.



(1) Fully Charged Battery and Low Charging Rate—This indicates normal generator-regulator operation.



(2) Fully Charged Battery and a High Charging Rate—This usually indicates that the voltage regulator unit either is not limiting the generator voltage as it should or is set too high. A high charging rate to a fully charged battery will damage the battery and the accompanying high voltage is very injurious to all electrical units.

This operating condition may result from:

(a) Improper voltage regulator setting.

(b) Defective voltage regulator unit.

(c) Grounded generator field circuit (in either generator, regulator, or wiring).

(d) High temperature which reduces the resistance of the battery to charge so that it will accept a high charging rate even though the voltage regulator setting is normal.

If the trouble is not due to high temperature, determine the cause of trouble by disconnecting the lead from the regulator "F" terminal with the generator operating at medium speed.

If the output remains high, the generator field is grounded either in the generator (see Service Bulletin 1G-150) or in the wiring harness.

If the output drops off, the regulator is a fault, and it should be checked for a high voltage setting or grounds.

(3) Low Battery and High Charging Rate—This is normal generator-regulator action. Regulator setting may be checked as outlined in the following section.

(4) Low Battery and Low or No Charging Rate—

This condition could be due to:

(a) Loose connections, frayed or damaged external wiring.

(b) Defective battery.

(c) High circuit resistance.

(d) Low regulator setting.

(e) Oxidized regulator contact points.

(f) Defects within the generator.

(g) Cutout relay not closing.

(h) Open series circuit within regulator.

(i) Generator not properly polarized.

If the condition is not caused by loose connections, frayed or damaged wires, proceed as follows to locate cause of trouble.

To determine whether the generator or regulator is at fault, momentarily ground the "F" terminal of the regulator and increase generator speed. If output does not increase, the generator is probably at fault and it should be checked as outlined in Bulletin 1G-150. Other causes for the output not increasing may be the relay not closing or an open series winding in the regulator. If the generator output increases, the trouble is due to:

(a) A low voltage (or current) regulator setting.

(b) Oxidized regulator contact points which insert excessive resistance into the generator field circuit so that output remains low.

(c) Generator field circuit open within the regulator at the connections.

(5) Burned Resistances, Windings, or Contacts—These result from open circuit operation, open resistance units, or loose or intermittent connections in the charging circuit. Where burned