

Emergency power supply for Stratomaster instruments

This approach uses a 9V transistor radio battery as emergency supply should your aircraft lose its electrical power.

Parts required are very cheap and can be obtained from your local electronics hobby shop or they can be salvaged from old electronic equipment. This circuit uses two 1N4007 silicon diodes, but just about any kind of silicon diode that can pass a few hundred mA of current will do.

Parts list:

- 1) Battery clip for 9V battery (consider a panel mount battery tray or similar).
- 2) Panel mount switch
- 3) Two silicon diodes (minimum 500 mA rating). Recommended types: 1N4001 to 1N4007, 1N5401 etc.
- 4) Insulated wire as required

Suggested operation:

Before flight ops, switch emergency supply to "on". Instrument should start up. Use battery voltage indicator on instrument to verify that emergency supply battery is in good condition. Note: Instrument voltage will read 0.7V low due to voltage drop on diode. If your reading is below 8V, replace battery. Recommended type: Alkaline, long life.

Switch on main power (master switch) and switch emergency power "off". Instrument should remain running. Verify voltage of your main aircraft supply. This will also read 0.7V lower than actual voltage due to voltage drop on diode.

During flight, leave both master and emergency power "on". As your aircraft power supply has a higher voltage, no current will drain from the emergency supply battery.

After flight operations, first switch emergency supply "off" then master switch "off".

Should you be in a situation where you need to operate on emergency power for a long time (>1 hour), we recommend that you switch the backlight on the instrument "off" to conserve power. Switching the backlight off increases the battery life by approximately four times. Without backlight, an Alkaline battery of good quality will supply your instrument for 5 to 15 hours depending on kind of instrument and options fitted (engine probes and senders etc).

Suggested wiring sketch on following page.

Note on silicon diodes: These are polarized devices and they must be fitted in the correct direction. They have a band marking the "Cathode" of the diode. The band must face towards the +12V terminal on the instrument as shown below.

