

Electrical Systems

electrical emergency load-shedding list and the list of actual rated amperage for the same airplane in Table 8-7. It is worth noting that some older communications radios may require up to two amps to receive and six amps to transmit.

Once you have studied the system and have your electrical emergency load-shedding list, then you are prepared to make intelligent decisions should you be forced to rely only on battery power. It is easy to see, for instance, that taxi and landing lights should be avoided and the gear should not be extended until you are absolutely sure you will be landing, as the price for gear extension and then retraction is very high indeed. Take the situation where you are about to fly an instrument approach to an airport with marginal weather. If there is the likelihood of a missed approach, you might seriously consider manually extending the gear to conserve battery power for a possible trip to the alternate. In most aircraft, the gear then can be electrically retracted in the event of a missed approach.

One important lesson to be learned by all of this digging and probing is that the average battery in good condition should provide sufficient power to run necessary electrical equipment long enough to get to a suitable airport. Not only is that fact important from an operational standpoint but perhaps even more important from a psychological one.

PREVENTIVE MAINTENANCE

In addition to the few approved preventive maintenance items that pertain to the electrical system in Appendix A to Part 43—Major Alterations, Major Repairs, and Preventive Maintenance—there are other things you can do that will help prevent problems. Keep the battery clean, charged, and correctly filled. Always check ground power units for proper voltage and polarity before hooking up to the airplane. Check the security, cleanliness, and condition of wiring that can be seen during preflight. Discipline yourself to include the ammeter in your normal instrument scan, and perhaps the best advice is to generally be aware of the state of the electrical system.

Lead Acid Battery

The key to long and happy lead acid battery life is also good preventive maintenance. Following these nine principles will go a long way toward keeping your battery in top condition.

1. Keep the battery fully charged at all times.
2. Never hit battery posts with a hammer in an attempt to remove terminal connections.
3. Keep the electrolyte level up by adding water as necessary.
4. When not in use for extended periods, store the battery in a cool, dry area and recharge it at least every five weeks.
5. Check terminal connections for corrosion, which CAN be removed by gently brushing the surface with a hard bristle brush, and apply Vaseline to the studs and terminals to prevent further corrosion.
6. Never pry cable connectors with a screwdriver in an attempt to remove them.