

## Chapter Eight

some of them will continue to operate when there are problems with the system, but their accuracy will be off. Therefore, any tendency of electrical equipment to operate substandard should be brought to the attention of the mechanic.

Other occurrences of interest to the mechanic would be unexplainable dimming of lights, smoke, pungent odors that might indicate burning wire, and equipment that operates unpredictably. In general, the circumstances surrounding any problem will be of interest, such as the ammeter reading, other equipment in use, and conditions of flight.

One icicled, Illinois day a number of years ago, I attempted to start an airplane and absolutely nothing happened. After several attempts, I gave up and “informed” the mechanic that the battery was completely dead. He wanted to try it himself, but I was so certain about the diagnosis that he pulled the battery and brought it to the shop. Unfortunately, there was nothing wrong with the battery. It turned out the mag switch had worn out, probably from the giant key ring full of swinging keys that kept tugging at it during flight. I learned three important things that cold morning: Don’t hang a bunch of keys from the mag switch. If the battery appears dead, you should check for excessive key movement in the mag switch, as it may be worn out. And perhaps the most important of all is let mechanics do their job.

### Lead Acid Battery

Specific battery-related problems, for most electrical systems, are generally not too difficult for an experienced mechanic to readily solve, provided you do your part to help. You should explain the symptoms in detail, noting such things as how long the battery sat idle, what the ambient temperatures were during those days, and the conditions at the time of the problem. Table 8-8 provides a basic but helpful troubleshooting reference. It is also helpful if you can tell the mechanic any of the following.

- What the current draw has been according to the ammeter. If you have one of those that only indicates charge/discharge, then what did it indicate?
- Has there been a frequent need to replace water?
- Does the battery never seem to get fully charged?
- If you experienced difficult starts even in warm temperatures.
- If you attempted a start in very cold temperatures without pulling the prop through, getting a preheat, or using a ground power unit.
- Failure of specific electrical equipment.
- Pungent odors that might indicate burning wires.
- Unexplainable dimming of lights.

Answers to all these questions will help the mechanic to diagnose the problem. In general, the time-tested lead acid battery is reliable and trustworthy. A bad battery is more often the result of bad preventive maintenance. One of the first things a budding mechanic learns in school is the old saw, “If you take care of your tools, your tools will take care of you!”—a saying that applies equally well to the lead acid battery.