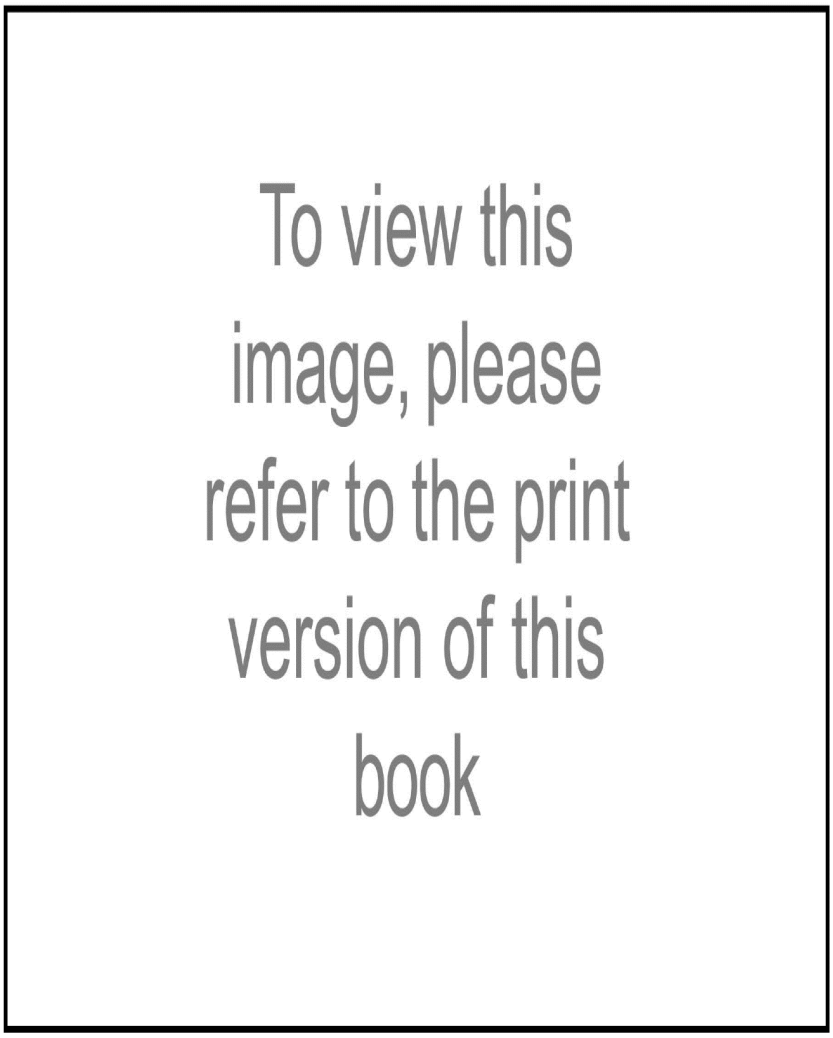

Fig. 8-3. *Analogy of a waterwheel to a lead-acid battery.*

running. The alternator, by regulation, is also sufficient to handle normal in-flight power requirements. If the alternator system fails, then we have a limited supply of energy available from the battery.

Murphy's Second Law states, "Nothing is ever as simple as it first seems," and batteries neatly fall under that law. It is a very common misconception that a battery stores electricity; it's easiest to think of it in that manner. But a battery actually converts electricity into chemical energy, stores the chemistry, and reconverts it when the battery is connected to some demand such as a hungry starter. Understanding the basic chemical process gives a clue to potential problems. The four primary chemicals involved are lead