

hand, it is much less severe than if it flows from one hand through your heart and lungs to the other hand. For this reason, technicians working on hot circuits are always cautioned to put one hand behind the back or in the pocket.

RECOGNIZING SHOCK HAZARDS

Electrically unsafe equipment may continue to operate effectively without giving any warning to the user. However, in many situations electric shock hazards are quite obvious to the average technician or engineer. You don't have to be an expert to know that any kind of electrical equipment near swimming pools, marinas, bathrooms, basements, damp floors, or outdoors can be dangerous. It should be apparent too that any antenna you erect may fall, either during erection or later during use; if a power line is in the path of the fall, current may flow down the mast or guy wires to anyone unlucky enough to be holding on to either. It is likely that some of the victims of antenna shocks in recent years were aware of the potential danger. Possibly they misjudged the distance from the antenna to the power line, or, having recognized all the dangers they erected the antenna from the safe side of the line, only to have it fall in "the wrong direction," hitting the power line. Another situation may be seen in Figure 2-4.

Murphy's law—"if something *can* go wrong, it *will* go wrong"—should be kept in mind in any electrical or electronic installation, operation, test, or maintenance procedure. It is equally important never to assume anything about any electric circuit except perhaps that it can kill you if you don't take the proper precautions.

A few of the more obvious shock hazards are listed in Table 2-3. Table 2-4 lists some shock hazards that are not so obvious—in fact they may be

TABLE 2-3 *Obvious electric shock hazards*

Testing a circuit with a wet finger to see if it's "live"
Working on circuits assumed to be "dead" before checking that they <i>are</i> dead, and failing to prevent such circuits from being energized by others
Any electrical device that gives you a "tingle" when you touch it
Electrical equipment that does not have the Underwriters Laboratories (UL) label on both the cord and the equipment
Spliced, broken, frayed, and cracked cords and plugs
Ungrounded tools (drills, etc.), unless they are protected by double insulation
Transformer-less sets that may have hot chassis
Electric cords in floors where they may be worn or broken by people walking over them
Overloaded receptacles and circuits
Using metal ladders where they may brush or fall against power lines
Drilling into wall or floor without knowing what's on other side—it could be a hot electrical circuit
