

## Chapter Nine

blade erosion. Second, the power of the propwash will pick up loose debris and throw it back onto whatever is behind you. It is prudent to avoid any operations on gravel runways, but if you have no choice, use the following takeoff procedure, provided runway length permits: let the aircraft begin rolling while at low throttle, then gradually increase to takeoff power. This procedure will reduce the possibility of the prop picking up a stone and nicking the blades.

In general, it is a good idea to taxi slowly and cautiously to minimize hazards such as foreign objects on runways, snowdrifts, taxiway and runway lights, and tiedown chains. Always avoid pulling or pushing the aircraft by its propeller, which for some inexplicable reason seems to be a passion of flight instructors. Pulling an airplane by the prop tip, which is admittedly uncommon, creates a high probability of bending the blade. Pull an airplane around by the prop down near its hub, the mistake of choice, and you can stress the crankshaft.

If it is absolutely necessary to move an airplane by the prop, grab the propeller shank as close to the hub as possible and slowly increase pressure until the airplane begins to move. But remember that one damaged propeller will cost many times the price of a towbar. Also, be very careful to avoid putting a rotational force on the prop, as there is the ever-present threat of a hot mag starting the engine. Always assume the airplane has an ungrounded magneto, and any rotation to the propeller will cause the engine to start. I have personally been on two accident investigations, one regarding a lost limb and the other a lost life, due to props that roared to life unexpectedly in exactly that manner.

The dangers associated with a static aircraft and a turning propeller cannot be overemphasized. At the very best a turning propeller is a life-threatening environment. Take great pains to avoid loading and unloading passengers with a turning prop. If you're dropping off or picking up passengers in a twin-engine aircraft and for some reason you can't completely shut down, you want to position the aircraft so the door faces the ramp gate. Then shut down the engine on the side of the door. As a rule, never start an engine when there are people in the vicinity of the airplane, and be especially wary of children, animals, and machinery.

### PROPELLER MAINTENANCE

The prop, considered a separate component of the airplane, typically has a manufacturer recommended time between overhaul (TBO) different than the engine. Know its TBO and follow the manufacturer's recommendations. During each preflight, the pilot should check for wear, nicks, dents, and other damage. If a problem occurs, it either should be dressed by an A&P or referred to a propeller shop if the damage is too great. Every 100-hour or annual inspection, whichever comes first, the prop should be carefully inspected by an A&P who also will remove the spinner, check the hub parts for wear and damage, check the air charge, and lubricate it as required. It also is a good idea to have the tachometer checked for accuracy periodically. If your tachometer has an RPM red arc, you should have your tach checked every 100 hours for accuracy to make sure you're not inadvertently operating in the red arc area!