up to the recommended manifold pressure with the prop control in its full forward position. Then quickly pull the prop lever all the way back to the feather detent, get about a 500-RPM drop, and then push it forward again. The entire action should be fairly smooth: pull, drop, push. If the oil is cold, you may not get an RPM drop immediately, so push the prop lever back and forth fairly rapidly to get warmer engine oil moving through the lines. Once you begin to see a response in RPM, continue with the normal prop featherchecк. Most manufacturers recommend that you periodically do a complete feather procedure just to make sure everything will work should you need it; consult your POH.

Propeller Control

Fixed-pitch props are directly controlled with the throttle; the reference instrument is the tachometer, which indicates engine revolutions per minute. A constant-speed propeller actually is controlled by a propeller lever in conjunction with the tachometer. The throttle controls engine manifold pressure and is referenced by the manifold pressure (m.p.) gauge, which indicates inches of mercury. With the constant-speed system, setting power correctly is essential to efficient operation and even engine life. A pilot always should consult the POH for specific combinations of RPM and m.p. for various climb and cruise configurations. Excessive m.p. for a given RPM could cause engine damage. For instance, an m.p. too high for the RPM will cause abnormal cylinder pressure, leading to high cylinder-head temperatures, detonation, and excessive stress on engine parts. A good rule of thumb is when increasing power, increase RPM first, then m.p.; to decrease power, pull the throttle back to approximately 1 inch below the desired m.p., then pull back the prop lever to the new RPM setting. The reason for the 1-inch difference is because reducing RPM will cause the m.p. to rise slightly.

TROUBLESHOOTING

There are significant differences between constant-speed propeller systems; always consult your POH for proper troubleshooting procedures. In general, all nonfeathering propellers will go to high RPM if there is a loss of oil pressure; the feathering types will go to feather in the same situation. If there is damage to the prop-lever linkage, the governor is spring-loaded to high RPM. The reasoning is, if you don't have feather, then the propeller should go into the condition most conducive for a go-around—low blade angle (high RPM). Failure to unfeather in flight when you don't have accumulators probably means there is insufficient starter power to turn the engine enough to build up oil pressure in the governor. This is not an uncommon problem, particularly in older aircraft.

Before attempting a single-engine landing, you might want to try placing the aircraft in a shallow dive and momentarily activating the starter, a procedure called "bumping." The increased airspeed combined with the engine rotation from the starter might turn the propeller enough to get the oil moving and start the unfeathering process. If you have an accumulator and the prop fails to unfeather, it probably is the result of insufficient or no air charge, an oil leak in the accumulator or hoses, or a ruptured diaphragm, permitting