

## Environmental Systems

If the heater fails to light, the first consideration is procedure; double-check the POH to make sure you are using the correct one. Beyond that, insufficient electrical power, such as a dead battery or insufficient fuel, should be suspected. Some mechanical problems are beyond the control of the pilot, such as restricted fuel nozzle or inoperative fuel pump.

Failure of the ventilating blower to run probably will mean you forgot to turn the heater master switch on. Otherwise, it's a mechanic's job, as is failure of the fully automatic combustion air blower.

When the heater fires up but doesn't burn steadily, the culprit probably is fuel related—an insufficient amount or contamination by ice or water. Other mechanical problems, such as a fouled spark plug, can produce the same results.

If you suddenly realize that you can see your breath and you haven't had garlic for lunch, the heater has probably gone out. While mechanical problems could be the cause, more likely the problem is either fuel or electrical starvation. Best bet is to check the fuel supply and master switch.

Finally, if the heater fails to shut off during shutdown, it is a mechanic's problem such as a defective heater switch or stuck fuel solenoid valve.

The crux of the matter is proper maintenance. Preflight, preventive, and periodic maintenance are the keys to efficient and safe operation. Your zero-time overhauled Janitrol heater is certified to run 500 hours (or 24 months, whichever comes first) in accordance with Janitrol AD Note #96-20-07 before a pressure decay test is required. After that, every 100 hours (or 24 months, whichever comes first) another decay test is due. To avoid having to continually comply with this airworthiness directive, you can replace the unit with a new JanAero extended-life heater assembly, which consists of a ceramic coated combustion tube. Performed by a mechanic, the preventive maintenance is a thorough inspection of the entire unit, including a pressure check of the combustion chamber.

Southwind also has a maintenance-related airworthiness directive. Southwind AD #81-09-09 requires a 250-hour inspection and, at 1000 hours time in service, it must be overhauled in accordance with the manual. Incidentally, it is important to note that the "hours" referred to are actual heater-operation hours. While some aircraft have a heater hour-meter that records operating time, many do not. Janitrol allows the operator to compute one hour of heater operating time as the equivalent of two flight hours. Southwind, on the other hand, requires straight flight hour time if you don't have an hour meter on the unit itself. In general, it is probably going to be cost-effective to have an hour meter installed on all heaters.

## AIR CONDITIONING

Growing up in the 1950s, a frequent sight was "It's Cool Inside" emblazoned across theater marquees. The lure of air-conditioning, something unheard of in homes, was enough to attract crowds on any hot summer night regardless of the picture that was showing. Air-conditioning spread to restaurants, to other public places, and finally to homes. Previously inured to heat, consumers quickly began to expect to be kept cool indoors; portable units found their way into cars and finally commercial aircraft. If asked, the average pilot would