WORRIED ABOUT ALTERNATOR FAILURE? GET A STANDBY

If it seems like going all-electric puts all your gyro eggs in one basket, that's because it does. What happens when the single alternator fails and you're left hand-flying the backup attitude gyro ticking away on a backup battery? It's called partial-panel flying at its worst, and this is where installing a standby alternator comes in.

B&C Specialty offers a 20-amp standby alternator that bolts onto to the engine accessory pad where your old vacuum pump labored. The B&C product—and others from different vendors—will automatically feed the electrical bus if the voltage drops below a set threshold. If the primary alternator has completely failed and the draw on the secondary exceeds 20 amps, the annunciator will flash warning that you have five minutes to shed the extra load. There are various STCs for a wide variety of airframes and there are applications for both 14 and 28-volt electrical systems. A backup alternator could flirt with $6000 after installation.

Load-shedding is key because a panel that's packed with power-hungry displays puts serious load on a charging system. Worse, 14-volt electrical systems are already at a disadvantage. It's interesting to compute an electrical load analysis for a panel full of new avionics gear where you'll discover just how taxed many electrical systems are. For instance, Aspen's EFD1000 PFD paired with a 1000MFD screen will draw 10 amps in a 14-volt system. Garmin's GTX330 transponder draws an additional three amps. Don't expect a 20-amp backup alternator to efficiently power your entire panel and support other loads like landing gear motors, exterior lighting and the demands placed on the system while keying transmitters and operating the autopilot.

Another option yet is to consider upgrading the size of the primary alternator. I used to fly a retractable single-engine Cessna with a panel packed to the gills with power-hungry avionics. Its stock 60-amp alternator and 14-volt electrical system wasn't up to the task. Every time I would pull the power back and lower the gear for landing, various avionics would flash off because the system just couldn't handle the load. One owner with a Cessna 210 got so tired of replacing alternators every couple of years he finally bit the bullet and installed a 100-amp unit. Depending on your aircraft, these are available as PMA-approved and original equipment replacements offering outstanding reliability, but at a huge premium. Plan on dropping upwards of three AMUs for one of these babies. Still, it could be the last alternator you ever have to buy.