

Read an Engine Monitor

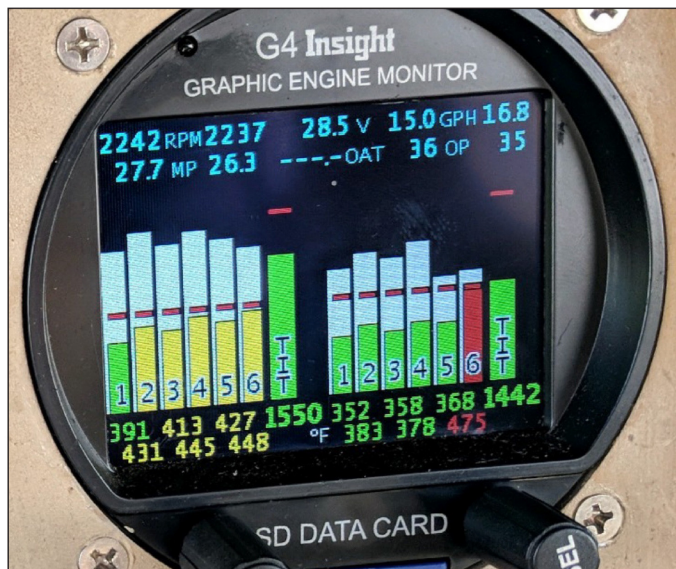
Unless you fly a restored classic on CAVU days and rarely stray far from home, you probably have two of the three technological foundations of modern aviation: GPS and datalink weather.

The third leg of the aviation technology stool is a graphic engine monitor. Sure, you can fly without one, just like you can fly without GPS or weather, but why would you?

There is the cost. As of this writing, you can get a portable ADS-B receiver and a tablet with a GPS for under \$1500 combined. Installing an engine monitor into a light single as of this writing could run \$4000-\$5000 including all the labor. Would this investment ever pay for itself?

If you could save a gallon per hour in fuel burn, it would take upward of 1000 hours. That's not compelling. If better operation meant the engine lasted 200-300 hours longer before top or major overhaul, that would also pay for the monitor, as would avoiding just one cylinder replacement. You'd certainly pay that to prevent even a partial engine failure in flight. What about shaving hours off troubleshooting prob-

Color and relative numbers are important. This Baron had an issue with cylinder 6 on the right engine, which turned that CHT bar red. Note at a glance that the left engine CHTs are almost all in the yellow, while the rest of the right engine CHTs are much cooler. The fuel flows and manifold pressures show discrepancies as well. (This example turned out to be an indicator problem, not an engine issue.)



lems, both the hours you pay a mechanic and the hours your airplane is stuck in the shop? What about peace of mind that your engine is running exactly as it should? What's that worth?

This manual doesn't assume you have an engine monitor, but it will provide monitor-specific advice wherever it applies—and that's in a lot of places. Some of the tasks simply require an engine monitor.

Glass Panel vs. Standalone

If you have a digital engine monitor, it's either integrated into a glass panel or a standalone unit probably installed as an aftermarket add-on. The biggest difference isn't what these two systems will show, as much as where they show it. For example, caution and warning alarms with an integrated system often appear on the PFD (commonly in the lower right) and sound a chime in the audio system. Alarms on standalone systems might have a remote light, but often just show on the display—which might be on the far right side of the panel. Many standalones have an option for connecting to the audio system as well. Make sure yours is connected if that option exists.

Most systems show both a visual gauge, such as bar height or a “digital needle,” as well as absolute numbers. This is a big help because the height of bars can hint at a problem without reading an actual number. However, integrated systems often require pushing a softkey, or turning a knob, to see details on the MFD. Know how to see those for your system and make a habit of doing that periodically even if everything is working normally.

There are often ways to get more information if you know the buttonology, especially on standalone systems. For example, using a lean assist function sometimes increases the sensitivity of the EGT scale. Even if you're not leaning for cruise, the greater detail can help you investigate an issue.

TIP

Keep a log for several flights of typical engine monitor values for your airplane in climb, cruise, and descent. These baseline values make it easier to notice anomalies or trends in the future.