

Beyond Leaning

A quick primer on how to use your engine monitor in each phase of flight:

ENGINE RUN-UP

- Establish run-up RPM and normalize the display
- Verify uniform rise of about 50 deg. F among all EGTs in single-magneto operation.
- Look for uniform rise of EGTs when leaning with the mixture control and when applying carburetor heat
- Be alert for unusually low voltage (less than nominal battery voltage), cold oil temperature and normal pressure, abnormally high CHT and/or large drop in EGT on one cylinder in single-magneto operation, which could indicate a fouled spark plug.

FULL-THROTTLE OPERATIONS

- Set up in standard or automatic mode
- Verify EGTs/CHTs consistent with past experience
- Be alert for high EGT in one cylinder, which may indicate plugged injector or leaking manifold gasket on a carbureted engine.
- If all EGT columns go off scale to the top of the instrument, you're probably in normalize mode

IN CRUISE

- Use lean-finding capability to set mixture as desired
- Normalize and be alert for uneven EGTs (injected engines), abnormal patterns of EGTs and CHTs and/or rapid rise of CHT (runaway overtemp in cylinder).

CRUISE-POWER MAGNETO CHECK

- Normalize bars and note EGTs rise together while running on one magneto and fall again, together, on both magnetos.

IN-CRUISE INDUCTION LEAK CHECK (ABOVE 5000 MSL)

- Set high-power cruise, note EGT/CHTs
- Reduce to low power (≈ 20 in. MAP) and note EGT/CHT
- Look for CHTs/EGTs to change at the same rate. Reduced change rate indicates potential induction leak on that cylinder.

DESCENT

- Be alert for higher-than-average cooling rate. No more than 40-50 deg. F/minute is normal, depending on engine displacement.



Insight Avionics, which more or less invented the modern engine monitor, now offers its G-series instruments, top, which feature a color LCD screen and come in 2.25- and 3.125-inch sizes. Electronics International's UBG-16, bottom, is a full-featured monitor for operators on a budget.