

Engine test follow-up

Cessna T206H · Lycoming TIO-540-AJ1A · Garmin G1000 NXi

Prepared for Loren Ahrens, Ahrens Aviation

EXECUTIVE SUMMARY

Better balance; cylinder 3 remains richest.

Today's profile shows improved injector balance, sustained combustion during the lean mag check, and modest temperatures.

CURRENT SPREAD

0.60 GPH

Three matched leaning passes

SPREAD REDUCTION

~49%

July → October, same method

MAXIMUM CHT

365°F

Cylinder 3 · test flight

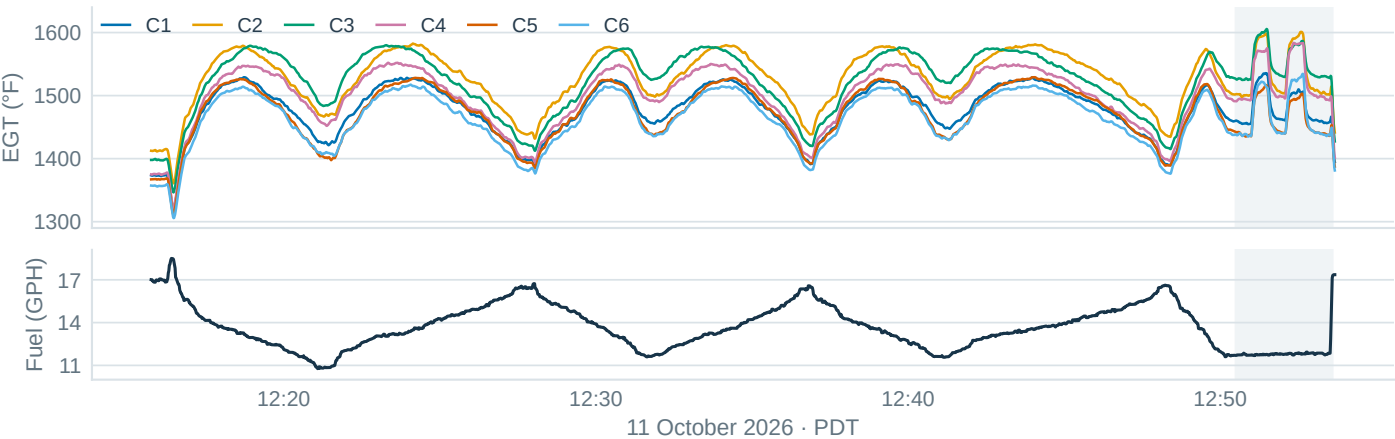
Review priorities

1 Residual injector balance

Review the replacement-nozzle record and cylinder 3 with GAMI. Its rich bias is roughly halved, but today's spread still does not consistently meet the 0.5 GPH tuning goal.

2 MAP / RPM indications

A later short flight recorded MAP above 39.2 inHg for 34 seconds (peak 39.45) and one 2,563-RPM sample. Check indications against the aircraft limits and controller / governor settings.



Today's profile: three complete rich–lean–rich cycles, then a fourth lean sweep and the mag check (shaded). All graph times are PDT.

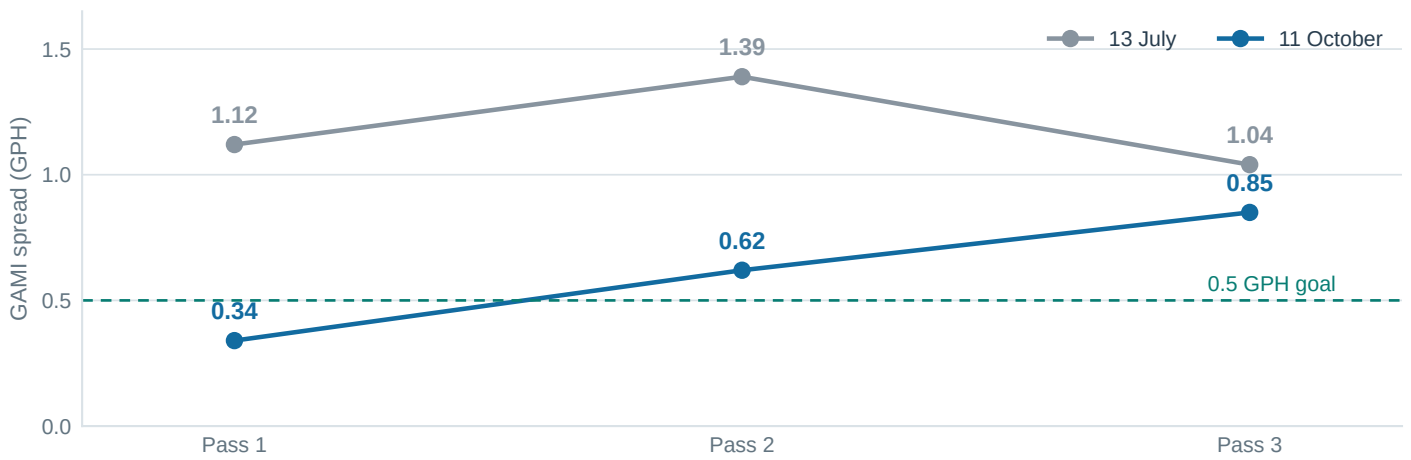
Authored by Mark Maunder and Codex using GPT 6.1 Sol on xhigh.

Flight data: 11 October 2026. Comparison baseline: 13 July 2026.

Injector balance: July vs. October

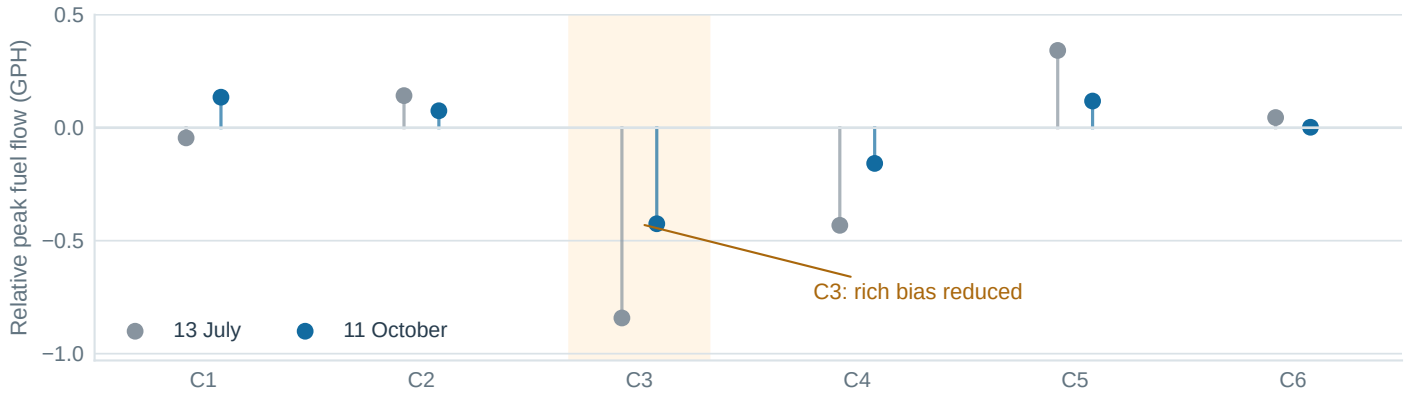
Three rich-to-lean passes compared on each flight

July's test was already after the initial GAMI installation. Savvy rated mixture distribution poor and recommended nozzle adjustments. Today's comparison assesses the subsequent changes.



Same-method mean: **1.18 → 0.60 GPH**. Every peak-selection method checked shows improvement; the exact percentage varies.

Estimated GPH	July: Savvy	July: same method	Oct: same method
Pass 1	1.0	1.12	0.34
Pass 2	1.3	1.39	0.62
Pass 3	0.9	1.04	0.85
Mean	1.07	1.18	0.60

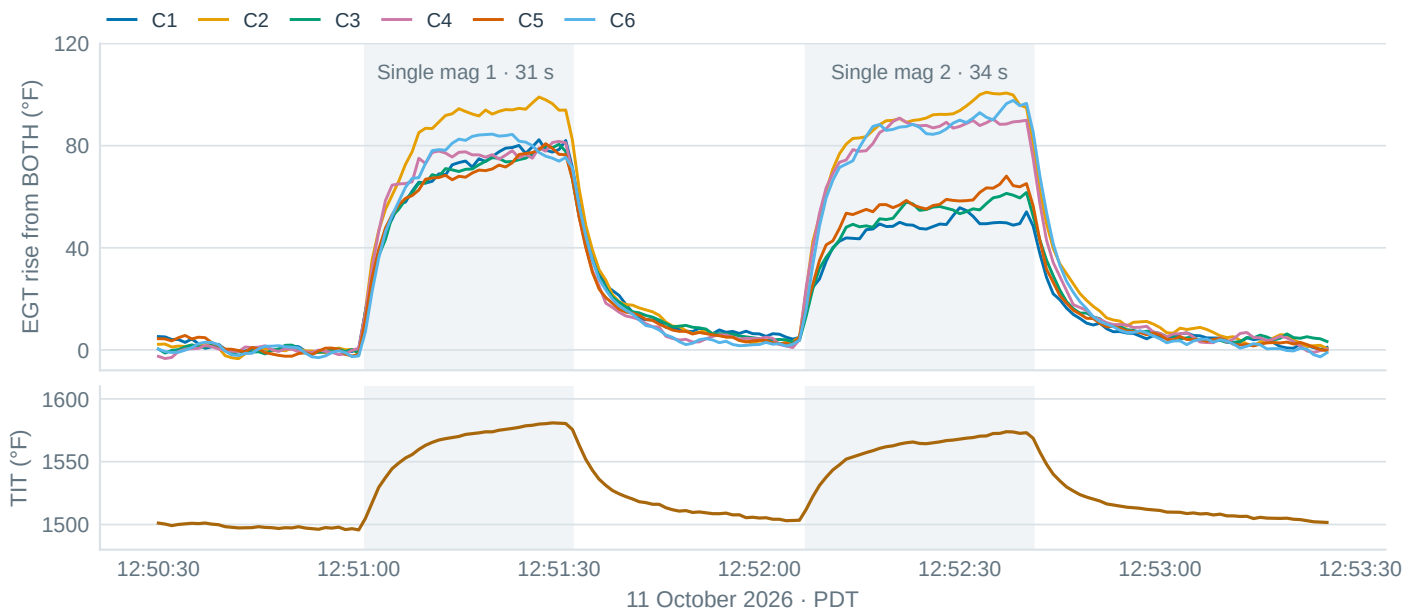


Peak-flow offset from the middle of each sweep: negative values indicate richer cylinders. **C3: -0.84 → -0.43 GPH**. C4 and the earlier lean bias of C5 also move closer to the group.

Comparison limits: July sweeps were quicker; peak estimates depend on selection method. Settings were similar, about 4,500 ft, 25.5–26.0 inHg and 2,180–2,250 RPM.

Ignition & engine temperatures

Lean mag check: satisfactory recorded response on all six cylinders



Mag positions are inferred; switch state is not logged. Fuel flow stayed near 11.8 GPH. Some roughness was reported during single-mag operation.

All six EGTs rose and remained stable on both single-mag intervals.
No obvious cylinder dropout. July's ignition check was also satisfactory.

Recorded flight temperatures

Maximum recorded	13 July	11 October
CHT	384°F	365°F
TIT	1,590°F	1,582°F
Oil temperature	206°F	198°F

Oil pressure was stable in both profiles. October was about **10°C colder** at the test altitude; the lower CHTs cannot be attributed to injector tuning alone.

LOP context for review

All six cylinders reached LOP at the tested setting. C3 was approximately 40–50°F LOP before the mag check, versus about 22°F in July. The data support LOP feasibility at this reduced-power setting; confirm power with the applicable chart and use the installed GAMI supplement with smooth operation on BOTH.

Sources: Garmin G1000 NXi logs, 13 July and 11 October 2026 (1-second data); Savvy analysis dated 17 July 2026; Savvy expanded test profile; [GAMI AFMS 01-6590001](#), Rev. IR. Original logs and full analysis retained by Mark Maunders.