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Obviously the best way to monitor all cylinders is with a fulltime all-cylinder readout. Alcor, KSA, and Insight are the only companies offering all-cylinder EGTs at the moment, and Insight's GEM is the only system capable of reading out EGT and CHT (and TIT, for turbocharged planes) simultaneously. The GEM, we realize, is prohibitively expensive for most 152 owners. Still, it's the Mercedes-Benz of EGTs. If it's Mercedes quality you want, expect to pay a Mercedes price.

I am building a Lancair 235 powered by a (used) Lycoming O-235-L2C which was removed from a Cessna 152. Would you recommend installing P/N LW-18729 (2,400-hr) pistons on this engine? With 1,700 hours TT, this would mean more than doubling the time-remaining until TBO (from 300 hours up to 700) in my case. If I do the piston swap, does this mean putting the pistons in without new wrist-pins and rebushing the con rods, or is that usually included? Also, can the cylinders be re honed to break the glaze without screwing up the nitride layer? The engine presently has Slick 4281 and 4050 magnetos (the former with a 5-degree lag angle). Since I'll be using a wooden prop instead of a metal one, will the 5-deg. impulse angle cause starting problems? Any help you could give would be appreciated.—D.S., CA

Lycoming sells a kit (P/N 05K19614) containing four long-TBO pistons, new rings, cylinder seals, logbook label, and appropriate gaskets, for \$638.20 (correct as of late summer, subject to change without prior notice; contact Linda Lou Inc. at 1-800-824-9912 for possible discount pricing). The kit (which we think is a good idea, by the way) does not come with rod bushings or wrist pins. Normal practice is to drive the wrist pin out with a drift and install the new piston (rings already fitted), reusing the same wrist pins and bushings. (The bushing is a press-fit in the rod and doesn't come out.) Rehoning to break the glaze is common practice any time a cylinder is off for any reason. Get a local FBO to do the work; FAA-certified repair sta-



Will the Lancair's wooden prop mean using a different impulse coupling?

tions may not want to give your cylinders back if they find one or more to be out of specs for bore, choke, etc.

Of course, you *could* just keep your present pistons and fly to 2,400 hours anyway; but since you're dealing with a 1,700-hour engine, it's better to take the jugs off and see what you've got than to fly in total ignorance. While your jugs are off you can take a look at the camshaft and see if any lobes are soft. (As you know if you've been reading our A.D. Outlook feature, numerous instances of cam-lobe distress have been reported in the O-235-L2C recently.) The LW-18729 piston is a definite improvement over LW-13623 (which you've got now). The latter has shown a tendency to crack in service. The crack rate is not high (we wouldn't ground a plane for not having the new pistons), but it's better to have the improved part nonetheless.

You've raised a good point with your question about impulse lag angle versus propeller construction. The lighter-weight wooden prop will definitely have an effect on cranking rpm, and the O-235 has shown a definite sensitivity to cranking rpm in terms of ease of starting. (Cessna went to a different starter armature—to *slow down* the starter—in the 152 after its initial introduction in 1978.) Without knowing what kind of starter you'll be using, we can only advise you to proceed by trial-and-error. If your present mag/starter combination doesn't give reliable starting, go to an M-3100 impulse coupling, which has a 15-degree lag angle (about \$125 through any Slick dealer). First, of course, be sure your engines' ignition timing is set properly (20 degrees BTC); impulse action shifts with errors in mag timing. Also be sure you're using an ignition switch that cuts out your non-impulse mag (the 4050) while cranking. Otherwise, use two impulse-coupled mags.

Best of luck with the Lancair. Let us know how the project turns out.

I very much enjoy your publication and would appreciate your opinion on a matter concerning my aircraft. I own a 1978 Piper Lance from which the shimmy dampener has at some time been broken off without any other damage to the nose gear. My mechanic said that as the whole nose gear fork must be replaced to repair this, it wasn't worth tackling until I sell the plane, as in his opinion this aircraft does not need a damper. So far, he seems to be right, because there is no shimmy on takeoff and only a bit of mild shimmy on braking. I have not been able to compare it with other Lances and cannot remember whether this is a greater shimmy than before. In any case, how important do you regard the shimmy dampener on this aircraft, and what are the short and longterm consequences of operating without one?—R.F., Ontario

The short-term consequence (obviously) is mild shimmy; in addition, your aircraft no longer conforms to the PA-32R-300's "type design" under FAR Part 23, which means your airworthiness certificate and insurance may be null and void. The longterm consequences could be quite serious. We'd advise installing another dampener at once, but check with another AME first to get a second opinion on whether the strut can't be fixed *in situ*. Barring a field repair, check with salvage sources. A used PA-32 nose fork shouldn't be too hard to find.

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