OPINION

Band-Aid solutions

Before doing something expensive or invasive, slow down

BY MIKE BUSCH

"MY CIRRUS SR22'S oil pressure has been slowly decreasing," reported Oliver, one of my company's managed maintenance clients. "At full power the pressure used to be 41-43 PSI, but over the past three months it has dropped to 36-39, and half the time I get a low oil pressure warning at idle. Should I get this checked now, or wait until the annual?"

Oliver's account manager, Eric—an experienced A&P with inspection authorization and one of the savviest engine guys in our company—advised that this should be checked sooner rather than later. "Oil pressure in the 30s is too low," Eric told Oliver. "I would actually prefer to see it around 50 PSI. It's easy to adjust oil pressure. Let's have that done no later than the next oil change."

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Oliver normally has his airplane maintained at the small shop on his home field, but the shop was booked and told Oliver they couldn't put his airplane on the schedule for at least three or four weeks. Several other small shops told Oliver the same story.

Now quite concerned, Oliver wasn't willing to wait. He decided to fly his airplane to a big, well-known shop that was the Cirrus Authorized Service Center for the region.

After Oliver described his decreasing oil pressure to one of the A&P mechanics at the service center—I'll call him Mack—and asked him to adjust the oil pressure up to 50 PSI, Mack became suspicious that what Oliver was seeing might just be an indication problem. The Cirrus SR22 is an all-electric airplane and uses an oil pressure transducer that has a history of failing.

Mack decided to plumb a calibrated oil pressure gauge into the airplane's oil system, and then run up the engine to see how closely the cockpit oil pressure indication agreed with the reading on the calibrated gauge. The cockpit indication was very close to the calibrated gauge reading, causing Mack to conclude that the decreasing oil pressure was a real problem, not an indication problem.

The next morning, the service center's director of maintenance—I'll call him Dominick—phoned Oliver to report what he'd found, and to tell Oliver that the SR22's Continental IO-550 engine needed to be overhauled or replaced. Oliver didn't see this coming, and he was understandably shocked by what would wind up being an unplanned $50,000 expense. When Oliver asked Dominick why the shop couldn't just adjust the oil pressure up to 50 PSI as Oliver had requested, Dominick replied, "That would be like putting a Band-Aid on a bullet wound."

Oliver asked Eric at my company for help. Given that Oliver's airplane had a mid-time engine—about 1,100 hours versus a time between overhaul of 2,000 hours—Eric questioned Dominick's verdict.

Eric phoned Dominick, who put Eric on speakerphone with the mechanic and the shop's chief inspector, and asked them to bring him up to date on what they'd done so far. They explained that they first checked the dipstick to make sure there was plenty of oil in the engine (there was). Next, they hooked up a calibrated test gauge to verify that the oil pressure indication in the cockpit was accurate (it was). Then they removed and inspected the pressure relief valve (it looked good). At that point, they recommended to Oliver that the engine be replaced or overhauled. Eric asked whether they'd even tried adjusting the oil pressure to see what happened. "That would be like putting a Band-Aid over a bullet wound," the chief inspector added.

Eric asked the service center to remove and cut open the engine's oil filter to determine whether any significant amount of metal was in the filter media. They agreed to do that and report back.

Eric cautioned Oliver to be careful with this shop. "As a mechanic, I would never consider asking an owner to spend $50,000 based on a guess like this, but I can tell that this shop is very reluctant to do anything less than a major overhaul," he said.

Dominick called Eric to report on the oil filter inspection. Initially Dominick

described it as inconclusive, but when pressed for details indicated that they'd run a magnet over every pleat of the filter media and picked up only "a little fuzz." There was clearly no appreciable metal in the filter, and no evidence that anything was coming apart internally in the engine. This amplified Eric's skepticism about the need to overhaul the engine.

Eric asked Dominic to adjust the oil pressure relief valve adjustment screw by two full turns and then run up the engine and report back on where the oil pressure was. After another "Band-Aid on a bullet wound" lecture, Dominick reluctantly agreed to make the adjustment and report back.

A few hours later, Dominick called Eric again to say that, "surprisingly," the

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oil pressure was now too high and had to be adjusted back down. Dominick theorized and Eric agreed that there had been some contamination under the pressure relief valve that was holding it off its seat. Making the two-turn adjustment apparently dislodged the contamination and resolved the oil pressure problem. "We will get the aircraft buttoned up for the customer to pick up at 2 p.m. today," Dominick said.

Oliver was ecstatic with this outcome, of course. Eric, too, was happy. It would have been a travesty to tear down a perfectly healthy engine just because a little piece of carbon was lodged in the oil pressure relief valve. "One can only hope a shop learns something from an experience like this," he added, with a trace of disbelief. Sometimes a Band-Aid is all it takes. **AOPA**

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