

SAVVY MAINTENANCE / OPINION

A matter of trust

How far does your IA have to go to verify that your aircraft is airworthy?

BY MIKE BUSCH



THE SUBJECT LINE of the email got my attention: “Annual gone wrong...please help!” Morrie identified himself as a first-time airplane owner.

“I have my Citabria in for annual now,” Morrie said, “and I feel like one of your ‘Savvy Maintenance’ columns is unfolding in front of me and my wallet. I had no issues with my first annual inspection last year, but I took it to a different IA this year and things seem to be unravelling.”

Morrie explained that the original 115-horsepower Lycoming O-235 engine on his 1975 Citabria 7ECA had been replaced in 1996 with a 150-horsepower Lycoming O-320. That engine was overhauled in 1999, and the logbook entry made by the A&P who overhauled it stated, “all ADs were complied with.”

“My current IA is saying that is not good enough, and that he cannot verify the part number and serial number of the camshaft that was installed and therefore says he needs to tear down my engine!”

The AD that had Morrie’s IA so concerned was a very old one—AD 63-23-02 published in 1963—that affected Lycoming O-320s with 7/16-inch exhaust valves installed with a camshaft having part number 68769. The 1999 logbook entry by the A&P who overhauled the engine didn’t state what the camshaft part number was, nor what type of exhaust valves were installed at overhaul, nor did it state specifically that AD 63.23-02 had been complied with.

All this took place 20 years before Morrie purchased the Citabria. It didn’t come up as an issue during the prebuy, nor at the prior annual inspection that was the first on Morrie’s watch. But now the IA was telling Morrie that this was a showstopper standing in the way of an airworthy signoff. No wonder Morrie was feeling blindsided, and a bit freaked out.

Morrie told his IA that he wanted to consult with me on this issue. The IA seemed agreeable and sounded interested

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in hearing what I'd have to say. My sense was that the IA wasn't at all anxious to see Morrie's engine torn down, but was genuinely concerned about his potential liability if it wasn't.

Teardown needed? Really?

While I understood the IA's concern, it seemed to me that his proposed remedy—an engine teardown—was way over the top. I told Morrie that if he indeed had a 1999 logbook entry signed by the A&P who overhauled his engine, and if that logbook entry indeed contained the word “overhauled,” then that's all his current IA should need to be comfortable that AD 63-23-02 and all other applicable ADs had been complied with. I explained my thinking about this in terms I hoped Morrie's IA would find persuasive.

FAR 43.2 (“Records of overhaul and rebuilding”) states the following:

(a) No person may describe in any required maintenance entry or form an aircraft, airframe, aircraft engine, propeller, appliance, or component part as being overhauled unless -

(1) Using methods, techniques, and practices acceptable to the Administrator, it has been disassembled, cleaned, inspected, repaired as necessary, and reassembled;

This regulation states that the magic word “overhauled” cannot be used in a logbook entry unless the overhaul was done “using methods, techniques, and practices acceptable to the Administrator.” Clearly, overhauling an engine would not have been “acceptable to the Administrator” unless the person signing the logbook entry ensured that all ADs that were applicable at the time were checked for compliance and complied with if necessary. Thus, I argued, the mechanic's signature in a logbook entry containing the word “overhauled” means that the mechanic did ensure that all applicable ADs were complied with at the time he signed the entry. Since AD 63-23-02 was obviously applicable in 1999, Morrie's IA should feel comfortable that it was complied with.

An IA performing an annual inspection is required to determine that the aircraft “meets all applicable airworthiness

requirements,” including compliance with all applicable ADs. (FAR 43.15 says so.) However, the IA is permitted to rely on maintenance record entries made and signed by other mechanics, and does not have to personally verify compliance with each applicable AD by direct observation or other physical means. If there is a maintenance record entry indicating that an AD was complied with, that's good enough.

Just imagine the consequences if this weren't true. If an IA could disbelieve maintenance record entries made by others and insist on verifying everything from scratch, no aircraft or engine would ever survive an annual inspection.

The IA's rebuttal

Morrie shared my email with his IA and reported that “after some soul searching” the IA had taken my point about FAR 43.2 and had reversed his position that an engine teardown was necessary. Morrie was clearly relieved to hear this.

However, the IA was still troubled by the lack of specificity about AD compliance in the 1999 logbook entry, and he cited another regulation—FAR 91.417(a)(2)(v)—as “a potential counter to 43.2” and was looking for my opinion.

Now, FAR 91.417 is titled “Maintenance records” and defines what maintenance records an aircraft owner must keep and how long the owner must keep them. The specific subparagraph of this regulation cited by Morrie's IA states that an owner must keep maintenance records of:

(v) The current status of applicable airworthiness directives (AD) and safety directives including, for each, the method of compliance, the AD or safety directive number and revision date. If the AD or safety directive involves recurring action, the time and date when the next action is required.

The regulation goes on to state that such records of AD compliance “shall be retained [by the owner] and transferred with the aircraft at the time the aircraft is sold.”

Morrie's IA had raised an interesting point. Clearly the 1999 logbook entry did not provide all the information about AD compliance that whoever owned the Citabria in 1999 was required to keep

under this regulation and then pass on to Morrie when he bought the airplane. That entry didn't include the AD numbers, revision dates, or methods of compliance, all information that the aircraft owner is required by regulation to keep.

Had the former aircraft owner fully understood his obligations under 91.417 and had he looked carefully at the A&P's logbook entry memorializing the engine overhaul, the owner would have realized that the A&P's logbook entry was inadequate to satisfy the owner's recordkeeping obligations, and should have sent it back to the A&P for a do-over. Obviously, that didn't happen. (It rarely does.)

However—and this is important—responsibility for complying with 91.417 lies with the aircraft owner, not with the mechanic. The owner is required to keep records of a bunch of information about AD compliance, but that doesn't mean that the mechanic who did the overhaul was required to put that information in his logbook entry, nor that Morrie's IA was required to make sure it was all there.

In making his 1999 logbook entry, the mechanic who overhauled Morrie's engine was bound by two regulations: 43.9, which defines what information the mechanic is required to put in a logbook entry, and 43.2, which defines what work is required be done in order for the logbook entry to contain the magic word “overhauled.”

FAR 43.9 simply requires the logbook entry to contain a description of the work performed, the date that the work was completed, the name of the person who did the work, and the signature, certificate number, and certificate type of the person who approved the work. That's all the logbook entry must contain. Furthermore, this regulation does not specify how detailed or cursory the “description of the work performed” may be. Arguably “overhauled the engine IAW the Lycoming O-320 Overhaul Manual” fully meets the requirements of 43.9. Neither 43.9 nor any other regulation I can find obligates a mechanic to write down the AD compliance information the owner is obligated to keep under 91.417.

I'm not sure what the FAA's rulemaking lawyers had in mind when they wrote these regulations, but apparently the owner needs to ask for the information called out

in 91.417 because, curiously, the regulations don't seem to require the mechanic to write it down. As Morrie's experience demonstrates, sometimes they don't.

Tempest in a teapot

In the meantime, I shared Morrie's correspondence with my colleague Eric Svelmoe, an A&P/IA who was a highly experienced Lycoming engine builder. Svelmoe said that while the early O-320 engines did use the 7/16-inch exhaust valves that were the subject of AD 63-23-02, Lycoming switched to more durable half-inch exhaust valves in the mid-1970s, and by the time Svelmoe began overhauling engines in 1980 all the engines he worked on had the beefier valves. Svelmoe thought it highly unlikely that an engine overhauled in 1999 would be equipped with 7/16-inch valves that Lycoming stopped using a quarter-century earlier.

Armed with this information, Morrie met with his IA and suggested that they re-measure the exhaust valve stem diameters, this time using a digital caliper instead of the "calibrated eyeball" method the IA had previously used. The IA consented, and—you guessed it—the valve stem diameters all measured a half-inch. That convinced the IA that the AD didn't apply to Morrie's engine after all, and the whole kerfuffle over it was moot.

There are several important take-aways from Morrie's ordeal. Owners need to review each logbook entry they get and ensure that it includes all the information that FAR 91.417 requires them to keep. IAs need to trust maintenance records made by other mechanics, and not feel obligated to verify everything from first principles. Finally, if any mechanic tells you that your seemingly healthy engine needs to be torn down, get a second opinion. ■

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