

Airworthiness:

How do you know if you have it?

by J.C. Boylls, MCFI

Pssst. Hey, Chief (and you CFI's)! Ya wanna know how to drive pilot examiners and FAA inspectors insane, ruin your school's reputation, and, if you're at a Part 141 school, lose its FAA approval at the same time? Here's the secret: when you send applicants to take their practical tests, pay no attention to anything, except the skills needed to "fly the airplane" and their related knowledge areas.

In the past couple of weeks I've given around 10 practical tests, and three of them ended as failures during the preflight (or, more to the point, the Preflight Actions area of operation in the Practical Test Standards)! Why did these applicants fail? They didn't know what paperwork an aircraft needs to be worthy. They didn't know what paperwork a pilot must carry to fly legally. And they missed many of the required items in the Preflight Actions area of operation. A 33 percent failure rate is an amazing (if not dismaying) statistic, so let's look at this just a bit. The following may be a bit bureaucratic, but that's part of the world we fly in, and if we want to fly--we must deal with it.

Airplane Airworthiness

My "boss" at the San Diego FSDO indicates that I have to see at least six items in the airplane maintenance records before I can go fly on a practical test. Each one relates to a different regulation and goes a long way toward determining whether an airplane is legally airworthy. Guess who's responsible for the aircraft's airworthiness? Here's a hint--it's not the examiner or the FAA inspector!

FAR § 91.403(a) says, "The owner [the person named on the aircraft's registration document] or operator of an aircraft is primarily responsible for maintaining that aircraft in an airworthy condition..." FAR § 91.405(a) requires

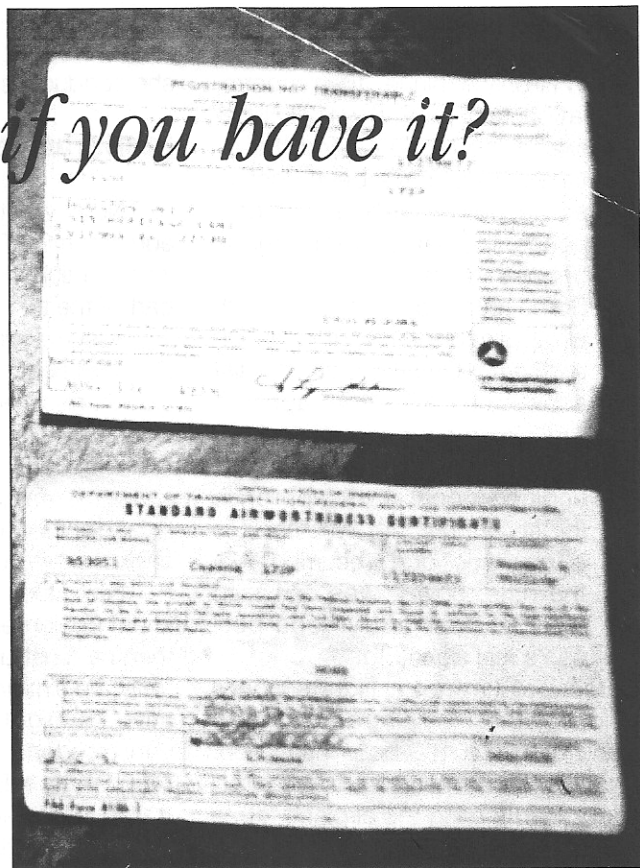
the aircraft's owner or operator to "have that aircraft inspected...and between required inspections,... have discrepancies repaired...; [and] (b) Shall ensure that maintenance personnel make appropriate entries in the aircraft maintenance records indicating [the work done and that] the aircraft has been approved for return to service...."

Some might argue that the regulations say that the person or business that owns the aircraft is responsible for ensuring its airworthiness. This is not the case. An owner or operator is responsible for maintaining an aircraft in an airworthy condition, and making sure the maintenance records are correct. But, ultimately, the pilot in command is responsible for ensuring that the aircraft is in an airworthy condition.

If you doubt this, read FAR § 91.7, "Civil Aircraft Airworthiness." It says, "(a) No person may operate a civil aircraft unless it is in an airworthy condition." In other words, before a person can fly an aircraft, he or she must ensure that it's airworthy. Who's that person? FAR § 91.3 says it is the pilot in command, because that person is "directly responsible for ... the operation of that aircraft."

During a practical test, FAR § 61.47(b) says the applicant is the pilot in command.

Finally, an item applicants must address during a practical test for most certificates and ratings is PTS "Area of Operation I — Task A, Certificates and Documents." During the applicant's demonstration of the knowledge this task requires, he or she must show me



two things: first, an understanding of what makes an airplane airworthy and, second, that we actually have an airworthy airplane to fly. Applicants must show me an airworthy airplane or we don't get very far in the oral portion of the test. What a concept!

What makes an airplane airworthy? This is a big question for everyone, be they renters, owners, partners in ownership, flight school owners, flying club members, practical test applicants--you name it.

In addition to the AROW documents--Airworthiness certificate, Registration, Operating limitations (contained in an aircraft flight manual, on placards, etc.), and Weight and balance data--my FSDO guidance says the applicant must show me six things in the aircraft's maintenance records.

1. Aircraft annual inspection [FAR § 91.409(a)(1)]
2. ELT battery date [FAR § 91.207(c)]
3. ELT annual inspection [FAR § 91.207(d)]
4. Transponder test within 24 months [FAR § 91.413]
5. Altimeter/Mode C test within 24



months [FAR § 91.411] (if the airplane is flown IFR; if it's a VFR-only airplane, then a correlation test [FAR § 91.217] between the Mode C and the altimeter must have been done at some point, with no maintenance on that system done in between times)

6. Some record of compliance with all applicable Airworthiness Directives. Usually, this is a list showing all AD's that apply to the aircraft type, which AD's apply to that particular airframe, engine, propeller, or appliance (by serial number), whether it is a "one-time" or a "recurring" AD, the date, how it was complied with, and an authorized person's real signature.

Because I'm not a flight school's employee, the test aircraft probably doesn't require a 100-hour inspection. Aircraft rental by itself isn't "for hire," and applicants bring the airplane to me for the test. However, the aircraft may have a recurring AD that requires compliance every 100 hours, so although the 100-hour inspection may be unnecessary, AD compliance may be.

After reviewing the items above it's time for some questions. "Are there any open maintenance discrepancies on the aircraft?" and "Is there any inoperative equipment?"

For open (or deferred) maintenance items, the pilot in command makes the decision about whether the machine is safe to fly--in consultation with a maintenance technician, I hope. As the PIC your student makes the decision, but as the examiner, I'd better agree with it. One thing I look at on the

test (this is a test, remember?) is your student's judgement and that he or she conducts safe operations.

Inoperative Equipment

Now, what about that inoperative equipment? This'll be a subject for a whole article by itself, but since this is part of the test ...

Assume we're going for a Part 91, Day-VFR flight. During the preflight, your student discovers that the nav lights don't work. Is it OK to take off? Considering the regs, it should be no surprise that the answer is--maybe. To decide if we can legally fly this airplane, the student must answer several questions.

First, does the airplane have a Minimum Equipment List (MEL)? If it does, then he must use it; if it allows the pilot to fly the airplane Day-VFR with inoperative nav lights, that's great! But is your student authorized to use that MEL? If the MEL was issued as strictly a Part 91 operation, then there is no specific authorization required. But the student must be familiar with the MEL and know how to use it. If the MEL was issued as part of a Part 135 or 121 operation, then the student must have completed the applicable MEL training program to use it. If the student has not completed the training, then he or she cannot fly the airplane. Remember, if the student is not authorized to use the 135 or 121 MEL, then the "relief" provisions of FAR § 91.213(d) do not apply, and everything must work. (Isn't this fun?)

If the airplane doesn't have an MEL, your student must go to FAR § 91.213(d). For a Day-VFR flight, FAR § 91.205 does not require nav lights.

But, before he can legally fly the airplane, he must do one more thing. The inoperative system must be "deactivated and placarded", and an "appropriately rated" person must make a maintenance log entry. Appendix A of FAR Part 43 lists the things a pilot may do, and deactivating and placarding a system isn't one of them. This means a maintenance technician must do it, even if it's something simple like pulling a circuit breaker. Besides, it's the technician's job, after all.

Now can your student fly? Almost. If the PIC decides he can make a safe flight with the inoperative system, he can fly. But he can't fly until he's completed each of the steps just discussed.

Want another example? (I know, not really, but you're getting one anyway!) Your student arrives for a practical test, and his airplane had its ELT removed for maintenance 95 days ago. The maintenance technician made the proper log entry and put a placard on the panel. FAR § 91.207(f)(10) permits an airplane to fly for 90 days with the ELT removed, and 91.207(t)(3) allows airplanes used for training to fly within a 50 nm radius of the departure airport with no ELT at all.

So, your student is good to go, right? Not exactly. Is a practical test a training flight? Uh, nooo. It's a testing flight, not a training flight, so FAR § 91.207(f)(3) doesn't apply. The airplane is five days past FAR § 91.207(f)(10)'s 90-day limit. The airplane must have a working ELT installed.

Bottom Line

Determining aircraft airworthiness is no trivial task, but it is up to the pilot in command to assess an aircraft's airworthiness before every flight. The regs require it, but, even more important, the PIC is going to be up in the air in the machine!

This is part of the practical test, too, and I find some CFI's do a really poor job of getting this information across to their students.

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CALENDAR OF EVENTS

September 16-19 Reno Air Races will be held at Reno/Stead Airport in Reno, NV. For more information, contact Reno Air Racing Association at (775) 972-6663, FAX (775) 972-6429, or internet <<http://airrace.org>>.

October 7-10 Copperstate EAA Regional Fly-In will be held at the Williams Gateway Airport (IWA) in Mesa, AZ. For more information, contact Gary Hays (602) 561-9481 for Warbird procedures and Jiff Tougas at (520) 398-9148 for ultralight procedures.

