



Is That Part Okay To Install?

By Mike Busch

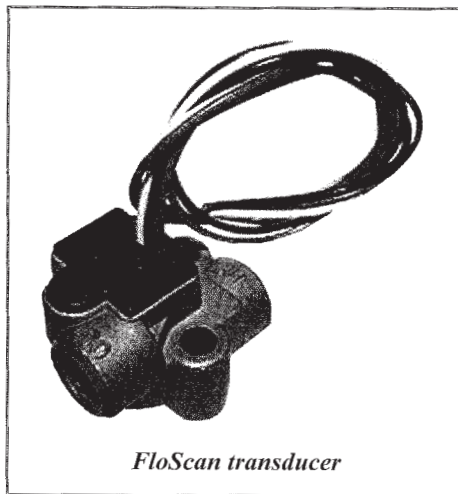
You'd think it would be a simple matter to determine whether or not a part is okay to install on your aircraft. In fact, it's anything but simple.

CPA member Frank Van Haste is my kind of aircraft owner. He owns a 1977 Cessna 182Q, and is extremely maintenance-involved as owners go. When Frank attended my seminar in Boston last Fall, it was immediately apparent to me that we were kindred souls. Frank is obviously dedicated to keeping his aircraft in tip-top condition and squawk-free. But like me, he just hates to waste money on maintenance. And he understands the value of doing homework before making costly maintenance decisions.

In that spirit, Frank recently sent me this email:

"I have a Shadin Miniflo-L fuel totalizer that I like a lot! Lately, however, it has been getting squirrely. I discussed the symptoms with the tech rep at Shadin. 'Yep,' sez she, 'your transducer is going south and they are not repairable. You need to order a new one, our p/n 680503, from EDMO, our distributor. It lists for \$650.'

"Now, that strikes me as a lot of money, so I Google around a bit and I learn (from a JPI TSO install manual) that Shadin p/n 680503 is in actuality a FloScan 231 fuel flow sensor that is available from many internet sources, mostly for boating



FloScan transducer

applications, for anywhere from \$120 to \$180. Which is more like it.

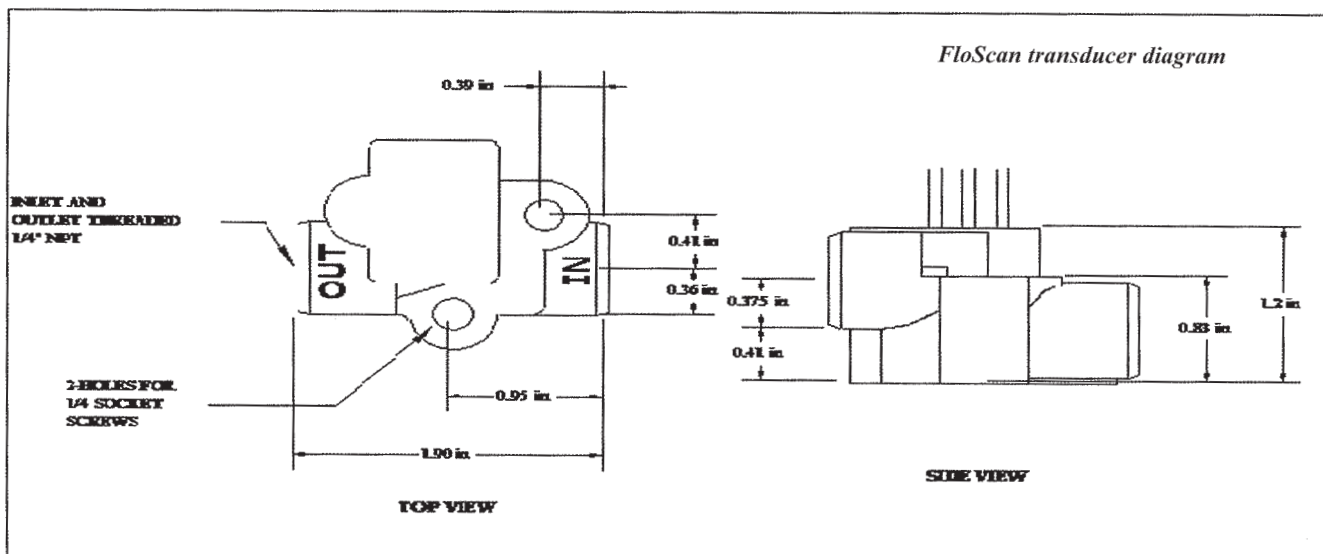
"So my question is: Can I buy a FloScan 231 sensor from the boat people, and—assuming all of the markings match and the K-factor matches—have my A&P mechanic install it in my STC'd Shadin Miniflo-L fuel measurement system? Am I likely to get static from said A&P about this? If so, what can I say to him?"

"It ain't like the \$400 difference is going to change my lifestyle. It's just the principle of the thing."

You might think that Frank's question would have a simple, straightforward answer. But in fact, the answer is quite complicated. There are at least three aspects to consider: (1) regulations, (2) liability, and (3) risk management.

What the FARs say

As you might imagine, there are a number of Federal Aviation Regulations that address the subject of replacement parts for certificated aircraft. The most frequently cited of these is §21.303, which says (in pertinent part) the following:



§ 21.303 Replacement and modification parts.

(a) Except as provided in paragraph (b) of this section, no person may produce a modification or replacement part for sale for installation on a type certificated product unless it is produced pursuant to a Parts Manufacturer Approval issued under this subpart.

(b) This section does not apply to the following:

- (1) Parts produced under a type or production certificate.
- (2) Parts produced by an owner or operator for maintaining or altering his own product.
- (3) Parts produced under an FAA Technical Standard Order.
- (4) Standard parts (such as bolts and nuts) conforming to established industry or U.S. specifications.

This rule is frequently misinterpreted to mean that only FAA/PMA, TSO, and OEM parts are legal to install on a certificated aircraft. However, it doesn't say that.

The key phrase in §21.303 is: "...no person may PRODUCE a modification or replacement part FOR SALE for installation on a type certificated product..." [Emphasis mine.] The intent of this regulation is to constrain PRODUCERS of parts (like FloScan) from introducing unapproved aircraft parts into the commerce stream. The regulation does not constrain distributors, installers, or users of parts. Only the producer of a part may be found to be in violation of §21.303. Neither Frank nor his mechanic need worry about that regulation, because it doesn't apply to them.

Historically, the FAA did not regulate the DISTRIBUTORS of parts. However, that changed on October 17, 2005, when FAR Part 3 made its debut. Specifically, §3.5 now prohibits distributors from making intentionally false or misleading statements about the airworthiness or acceptability of the parts they sell. That regulation states (in pertinent part):

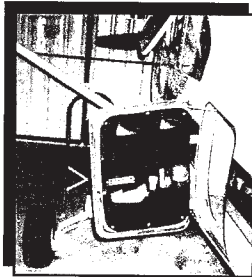
§ 3.5 Statements about products, parts, appliances and materials.

(b) Prohibition against fraudulent and intentionally false statements. When conveying information related to an advertisement or sales transaction, no person may make or cause to be made: (1) Any fraudulent or intentionally false statement in any record about the airworthiness of a type-certificated product, or the acceptability of any product, part, appliance, or material for installation on a type-certificated product. (2) Any fraudulent or intentionally false reproduction or alteration of any record about the airworthiness of any type-certificated product, or the acceptability of any product, part, appliance, or material for installation on a type-certificated product.

(c) Prohibition against intentionally misleading statements. (1) When conveying information related to an advertisement or sales transaction, no person may make, or cause to be made, a material representation that a type-certificated product is airworthy, or that a product, part, appliance, or material is acceptable for installation on a type-certificated product in any record if that representation is likely to mislead a consumer acting reasonably

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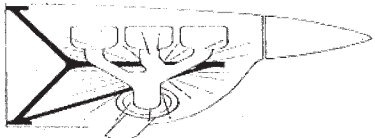
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under the circumstances. (2) When conveying information related to an advertisement or sales transaction, no person may make, or cause to be made, through the omission of material information, a representation that a type-certificated product is airworthy, or that a product, part, appliance, or material is acceptable for installation on a type-certificated product in any record if that representation is likely to mislead a consumer acting reasonably under the circumstances.

(d) The provisions of §3.5(b) and §3.5(c) shall not apply if a person can show that the product is airworthy or that the product, part, appliance or material is acceptable for installation on a type-certificated product.

So if West Marine were to fraudulently advertise that the FloScan transducers they sell are approved for aircraft use, they could conceivably be found in violation of §3.5. But once again, this is not a reg that either Frank or his A&P need to be concerned about.

The regulation that governs Frank's A&P (as INSTALLER of the part) is §43.13, which states (in pertinent part):

§ 43.13 Performance rules (general).

(b) Each person maintaining or altering, or performing preventive maintenance, shall do that work in such a manner and use materials of such a quality, that the condition of the aircraft, airframe, aircraft engine, propeller, or appliance worked on will be at least equal to its original or properly altered condition (with regard to aerodynamic function, structural strength, resistance to vibration and deterioration, and other qualities affecting airworthiness).

So the question Frank's A&P needs to ask himself (from a regulatory standpoint) is this: "If I install this FloScan 231 transducer that Frank bought from West Marine, will the Shadin fuel flow system still be at least equal to its original condition when it was first installed?" Assuming that the new transducer is in-

deed identical in all physical respects to the original one that Shadin supplied, the answer to that question should be a no-brainer: "Yes!"

Mechanic's liability

But in today's litigious environment, Frank's A&P has to worry about a lot more than complying with FAA regulations. He also has to worry about civil liability. If, God forbid, Frank has a fuel-exhaustion accident in his Skylane, you can bet dollars to doughnuts that Frank's grieving widow and kids will hire the most aggressive aviation plaintiff lawyer they can find, and the attorney will sue everyone in sight—including Frank's A&P.

The plaintiff attorney will probably hire a maintenance expert to study the Skylane's logbooks looking for anything they can use to hang the mechanic. The expert will advise the plaintiff attorney that Frank's A&P replaced the fuel flow transducer in the Shadin totalizer system, but that there's no sign of an FAA Form 8130-3 Airworthiness Approval Tag in the logbooks.


In depositions, the lawyer will probably quiz Frank's A&P about the absence of the Form 8130-3, and will learn that the transducer was an owner-furnished part, and that the mechanic has no idea where Frank got it from. (Never mind that FAA regulations don't require him to know where it came from, but only to determine that it is "at least equal" to the original in terms of the factors affecting airworthiness.)

At trial, the attorney will probably put on a show for the jury—none of whom knows anything about aviation or maintenance or FAA regulations—explaining that Frank's A&P installed a "suspected unapproved part" with no traceability or approval documentation. (Never mind that FAA regulations don't require the part to have any documentation, only to be airworthy.)

All of this will be on the A&P's mind when Frank shows up with his FloScan 231 transducer and proudly brags that he bought it from West Marine for \$120, rather than paying Shadin an extortionate \$650. Frank's A&P may decide to go out on a limb and install the part, or he may decline because he's concerned about potential civil liability.

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The wise thing for Frank to do, of course, is to talk this over with his A&P before buying the part from West Marine. If the A&P says “no,” Frank should not be surprised or upset. However, he might want to talk to some other A&Ps to see if any of them are agreeable to installing the West Marine part.

Risk management

If Frank’s A&P agrees to install the \$120 transducer from West Marine—or if Frank finds another A&P who agrees to do it—there’s still one more thing Frank needs to consider: What is the risk that several years down the road, some IA will perform an annual inspection, question the airworthiness of the West Marine transducer, and insist that it be removed and replaced with a provably airworthy part?

In this particular case, Frank’s risk is pretty small. For one thing, assuming the \$120 West Marine transducer is physically identical to the one Shadin uses, there would be nothing obvious to call an inspecting IA’s attention to it. Certainly, the IA might notice that there’s a logbook entry documenting the replace-

ment of the transducer but no associated airworthiness approval or traceability documentation. But the IA knows full well that such documentation is not required, so he’s unlikely to question its absence.

Even if the IA does question it (which seems highly unlikely), the worst-case situation is that Frank decides to humor the IA, bites the bullet, buys a \$650 transducer from Shadin, and puts the \$120 West Marine transducer up for sale on eBay. That certainly seems like an acceptable risk that, in Frank’s words, wouldn’t change his lifestyle.

Summing up

The question Frank posed is one that comes up all the time. Example: You need to replace a wheel bearing. Do you order one from Cessna that has been sprinkled with Cessna holy water and comes with a Form 8130-3 Airworthiness Approval Tag from the Cessna Parts Division? Or do you run down to your local bearing store and buy a Timken bearing with the exact same part number as the one Cessna uses?

In any such case, there are always

three issues to consider: (1) Does the part meet the “at least equal to” test of FAR §43.13? (2) Is the mechanic willing to install it and thereby accept responsibility for declaring it airworthy? And (3) what’s the worst that could happen if some cranky IA takes issue with it at some future annual inspection?

For extra credit: Does anyone care to guess where I buy my wheel bearings?

Postscript: Frank approached his shop about installing the undocumented \$120 FloScan 231 in his Skylane. Their response was predictable: a very polite “hell no.”

Tech Topics is a monthly column written by Mike Busch of CPA’s technical staff. Mike is a longtime CPA Magazine columnist, co-founder of AVweb and teaches Savvy Seminars for aircraft owners and mechanics. Mike is the 2008 AMT of the year. Mike owns, flies and maintains a 1979 Cessna T310R based in Santa Maria, California.



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