Getting On Board

Tips for Tapping into the Growing Light Sport Aircraft Market

STORY BY DALE SMITH

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Turn back the clock five or so years and seemingly everyone was singing the praises of the new light sport aircraft movement. The promise of being able to buy a brand new, factory-built airplane for around $100,000 had the general aviation industry dreaming of an LSA in every garage.

Well, like most things in general aviation, reality hasn't quite lived up to the hype. Not that LSAs have gone the way of the very light jet, thanks in part to a sluggish economy and other unsavory elements, but their entry into mainstream personal aviation has been slow and steady versus fast and furious.

"Here's an important fact to remember: If you go back to the approval of the very first LSA approved for sale on April 8, 2006, you have less than six years from that date to today," said Dan Johnson, chairman and president of the Light Aircraft Manufacturer's Association. "Even though we had a great splash from the aviation media for sure, these things take time to develop."

According to Edsel Ford, aviation safety inspector, airworthiness, Light Sport Aviation Branch of the FAA, "We have 'certified' some 1,900 S-LSA aircraft since their introduction. Also, about a year ago we changed the rules. Now, Part 141 flight schools can use S-LSAs as flight training aircraft. There's a pretty good size market for training aircraft today."

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What LSAs Are...

By the numbers, an LSA must have a maximum gross takeoff weight of 1,320 pounds (1,430 pounds if it's a seaplane), a maximum cruise speed of 120 knots, and carry up to two people. Obviously, they are intended for recreational and basic flight training.

There are three basic ways an aircraft can meet the LSA criteria:

Light Sport Aircraft. The first is an FAA type-certificated aircraft that meets the performance parameters, but is flown by a recreational pilot. The list is pretty short but includes some Aeroncas, Ercoupes, Luscombes, Piper Cubs, Taylorcrafts and a few others.

Special-Light Sport Aircraft. These are factory-built aircraft destined for the LSA market and represent the largest upgrade and on-going maintenance opportunities for avionics shops. They are all built under the ASTM acceptance and compliance standards, which means they can't be altered or maintained like "regular" airplanes.

Experimental-Light Sport Aircraft. To qualify as an E-LSA, the aircraft has to be constructed from plans or a kit as an E-LSA by an owner/builder. These aircraft can only be used for recreational flight or flight instruction by the owner/builder. Since their builders tend to do most of their own maintenance and avionics work, E-LSAs don't represent much of an ongoing opportunity.

What LSAs Are Not...

LSAs are not, except for the few original LSAs, FAA type-certificated aircraft. While that's obvious, a lot of shops don't clearly understand exactly what that means regarding what you can and cannot do when it comes to maintenance and avionics upgrades.

Unlike the TCd airplanes we're all used to, guidance and approval for inspections, maintenance and upgrades to S-LSAs doesn't come from the Federal Aviation Regulations. It all comes directly from the aircraft's manufacturer.

"There are no one-time field approvals or STCs," Ford said. "Everything has to be approved by the manufacturer of the aircraft. Special light sport aircraft are mandated to have a minimum useful load throughout their life. If the useful load goes below the minimum, then it's no longer considered an LSA.

"To maintain this compliance, the manufacturer has the final say about what equipment can be installed on the aircraft. They can approve or deny the installation of any type of instruments or avionics for any reason they want."

Modifications or alterations aren't the only things LSA manufacturers have jurisdiction over. Shops are not permitted to perform any type of troubleshooting or maintenance on the equipment installed on the aircraft without prior approval.

"Any shop that is interested in this market needs to get ready right now," said Bob Jacobson, owner of Custom Avionics. "If you come in my shop with an experimental or certified production airplane and say you have a transponder problem, we can jump right in and work on it.

"If it's an LSA, now we have to stop and contact the manufacturer to get an approval letter saying it's okay for us to work on the transponder in that airplane. It's not an easy thing to do sometimes. The manufacturers aren't waiting by the phone to send you an approval."

The Letter of the Law...

Depending on what you want to do, you may need two approval letters from an LSA manufacturer: one permitting the general overall inspection and maintenance of the factory

installed avionics and a second letter of approval to do any one-time modifications or upgrades.

It's important to understand that having the LOA for maintenance does not mean you do not also need the LOA for an upgrade or alteration. The two LOAs are totally independent of each other.

"A qualified avionics shop that wants to do any troubleshooting or maintenance on a Remos aircraft needs to contact me, and I'll send them a letter of approval for that type of work," said Cris Ferguson, service director/director of maintenance for Remos Aircraft. "There's no charge for the letter. We're here to help the avionics shops as much as we can, and I'm happy to do it."

Of course, getting an LOA for an avionics or instrument addition or upgrade is much more complex and a time consuming process.

"They (aircraft manufacturers) will have to issue a letter of authorization stating who can install it, how they can install it, what they have to do to install it and so forth," Ford said. "The approval comes from the manufacturer and then goes in the aircraft as a logbook entry. There isn't a 337 form for an LSA.

"Depending on how the manufacturer issues their approval, it could be aircraft serial number specific. It's kind of on the basis of a field approval. It's not guaranteed every time you do it. Again, it's up to the manufacturer."

The Approval Or Not Process

"Say a customer wants you to take out a 7-inch Dynon display and put in a 10-inch Dynon," Johnson said. "It's relatively simple, but the shop can't do anything until the aircraft's manufactur-

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er has given their approval. Chances are the factory has already done that, and the approval may be pretty quick.

"You might get into drawings and other paperwork. But, with the larger manufacturers, that probably won't be much of an issue assuming they are OK with the equipment going in. Some of the smaller manufacturers may not want anything to do with the process and just say you can't do it. The manufacturer is king in this particular situation."

Let's assume we want to do a major radio upgrade in a Remos GX. How would we begin?

"A shop would first need to send me a proposal letter stating what they want to do," Ferguson said. "We take that information and do the engineering required for a review process to determine what impact that unit will have on the operation of the aircraft. We use that analysis to confirm or deny the project. If we have to deny it, we let them know why right away.

"If we confirm it, then the process is like getting an STC in the certified world, but the approval is only for that make, model and serial number. It can't be transferred. The approval includes all the engineering and complete instructions on how to do the installation of the component. It's a very time-consuming effort for our company."

As you might expect, it does come at a cost, and you need to keep that in mind when putting together a rough estimate for a customer.

"Issuing the paperwork for a simple modification is like changing an air temperature gauge that costs $150," Ferguson said. "Because of the hours we have to put into the package, something more complex like engineering documentation and instructions to install a Garmin unit will cost a couple thousand dollars."

Ferguson also explained that while Remos tries very hard to comply with every request for an upgrade or alteration, as great as the upgrade may seem, sometimes the engineering just will not allow it.

"We see a lot of requests to install the Garmin 430, but the airplane just doesn't have the available electrical current to power the 430's screen," Ferguson said. "Most LSA manufacturers have limitations with power. LSAs just weren't intended to have this type of equipment in them."

Ford cautioned that avionics and maintenance shops need to follow every instruction on an LOA to the letter.

"The letter of authorization needs to be very specific, and the shop needs to follow it exactly," Ford said. "Any deviation or misunderstanding can mean major problems."

Is It All Worth The Effort?

By now, the question you're probably asking is, "Will there ever be enough LSA aircraft out there to make a difference to my business?" Darn good question. Unfortunately, there's no solid answer. But, there is some genuine optimism.

"Well, I hope it's going to be very big," Jacobson said. "I see more and more of our older pilots looking to switch to an LSA so they can keep flying. There's the medical avoidance issue, which is sometimes big. Many of these folks are used to flying with sophisticated equipment, and I think they'll want to see the same capabilities in their LSAs."

One of the big draws to LSAs, besides the price, is you only need a recreational pilot's certificate, which require no FAA medical, just your driver's license.

As far as LSAs being a boost to your business, while it's true that the opportunity for avionics upgrades and alterations may be a while in coming, their growing numbers and use as primary flight trainers will mean they'll at least need regular maintenance and inspections. But, you have to take steps now to be ready when the first S-LSA drops in.

"What you have to remember is these folks (LSA manufacturers), in large part, have not dealt with our work-a-day world of Part 145 repair stations and maintenance – many of them have built their business outside of them," Ford said. "These were often ultra light trainers or in Europe as very light aircraft. When the manufacturers come into our system, they are not necessarily up to speed on what a certified repair station really is or does.

"It's unfamiliarity of the rules and equipment on both sides of the house. That's why it's the best business practice, no matter which segment of aviation you are in, to absolutely have an open line of communication from the beginning.

"Take nothing for granted. Don't assume anything. If you don't ask, they won't know to tell you. Clarification of the rules is the key. A great place for any shop to start is by familiarizing themselves with FAR Part 91.327. That's the mother-load of all the maintenance and operational rules for special light sport aircraft."

Once you are ready to take on LSA work, a great next step is to get your company listed on the FIRM list on the Light Aircraft Manufacturer's Association's website.

"That's the Flight Instruction, Rental and Maintenance listing we have," Johnson said. "It's categorized by aircraft manufacturer and engine type and lists locations around the country that offer these services. It's a free listing, and when avionics shops gain proper approvals, we will put them on the list. Our goal is to provide good information to LSA owner/operators around the country.

"This is absolutely a growth business. Is there a need to rush into it? No. But, the more astute business people in the avionics repair area will certainly want to start making the rounds now." ❑