Sport Pilot Implementation Challenges

In May 2002 UltraFlight Magazine published my response to the FAA's Sport Pilot NPRM.

In my response I predicted various problems that might be encountered when the Sport Pilot initiative is promulgated by the FAA. These problems include such issues as finding a DAR (airplane examiner) who is willing to participate in the "Light Sport Aircraft" (LSA) experimental process, and DPEs (pilot examiners) who are willing to examine Sport Pilot applicants.

The FAA is to be credited for considering innovative solutions to these obstacles. For example, it is anticipated that many EAA Technical Counselors will be designated as "Sport DARs." These Sport DARs will be more familiar with ultralight-type aircraft than general aviation DARs. The FAA is also planning to transition many present ultralight pilot examiners into Sport Pilot examiners after they attend an indoctrination course in Oklahoma City.

However, there are other issues which will be more difficult to resolve that may impede the successful implementation of Sport Pilot. During the April 2003 Sun 'n Fun airshow in Lakeland, Florida, I discussed these issues with FAA Aviation Safety Inspectors Dan Billman and Tim Eldridge. They were very receptive to the questions raised and the possible solutions. It was a pleasure to see that the FAA was willing to address these challenges, which include:

1. Access to hangars in urban airports

2. Hostile airport administrators

3. Operations in congested airspace

4. Aircraft insurance

Before discussing the four items above, it's necessary to briefly summarize the Sport Pilot initiative, which is projected to become effective in the first months of 2004.

After a specified transition period, it will no longer be legal to fly two-seat ultralight trainers. All ultralight trainers, as well as overweight single-seat ultralights, will have to be inspected by a DAR and placed into a new experimental category called "Experimental-Light Sport Aircraft." Aircraft manufacturers will be able to sell fully built, ready-to-fly "Special Light Sport Aircraft." For the purpose of this article, I shall refer to Experimental-Light Sport Aircraft and Special Light Sport Aircraft as simply "sport aircraft," or "LSA."

Sport planes will meet quality control specifications according to an "industry consensus standard." In addition to quality control standards, the aircraft will have to meet certain weight and speed restrictions imposed by the FAA. The end result is that a sport plane will essentially be an FAA-certified ultralight, much as "microlights" are certified in England, France, South Africa and other countries.

Pilots who fly sport aircraft will have to take an FAA oral and written exam, as well as a flight test. They will be issued an FAA Sport Pilot certificate, and will no longer be considered "ultralight pilots."

The process of becoming a Sport pilot will undoubtedly be more difficult than the present method of becoming an ultralight pilot, or even an ultralight instructor. It is inevitable that some ultralight pilots will give up flying, rather than go through the process of obtaining a Sport Pilot certificate.

However, for those ultralight pilots who do choose to make the transition to Sport pilot, they will enjoy privileges not presently available to ultralight flyers. One new privilege will be the opportunity to fly over "congested" or urban areas, which ultralight pilots are precluded from doing today. Industry observers are hopeful that sport planes flying over cities will attract enough new pilots to make up for those ultralight pilots who drop out of flying.

Unfortunately, it may turn out that few sport planes will be based at city airports, for a reason that is not immediately apparent— ultraviolet rays.

The great advantage of ultralights over general aviation airplanes is that they're fun to fly, and equally important, they're affordable. The reason they're affordable is because they are manufactured out of relatively inexpensive material and can be constructed quickly.

Instead of spending hours shaping and riveting sheets of aluminum to wing ribs, it's possible to pull Dacron fabric over an ultralight wing structure much like one pulls a sock over a foot. This so-called "tube and fabric" construction is one of the quintessential characteristics of ultralights.

The Dacron fabric which covers an ultralight wing, and often the fuselage as well, is referred to as a "sail," since the material is the same as used in the sailboat industry. Although rugged and difficult to tear, there is one big drawback to Dacron sails, as every sailor knows. Ultraviolet rays will weaken the fabric, if a sail is exposed to the sun for an extended period of time.

Ultralight manufacturer Quicksilver recommends that ultralights not be exposed to direct sunlight for more than a thousand hours. This adds up to about eights months of sitting in the sun. Treatments such as PPG will protect the sails from ultraviolet damage, but it will only extend the useful life for another thousand hours.

It is vitally important that ultralight sails be covered with another fabric, such as Sunbrella, when tied down outdoors. It's even better to house the airplane in a hangar.

Ultralight pilots who fly on occasional weekends are willing to spend the time and effort it takes to put on and remove the airplane covers, which can take as long as an hour. However, it would be impractical and time-consuming to daily cover and uncover a fleet of ultralights at a city-based flight school. In addition, the covers cost as much as a thousand dollars, and they, too, gradually deteriorate in sunlight.

General aviation pilots always enjoy visiting flight schools, and seeing a dozen or so airplanes tied down on the flight line. It's easy to observe that aluminum airplanes, such as Cessnas, are not greatly affected by ultraviolet rays. These airplanes are seldom covered up, except for the windows.

It's even more rare to see a fleet of general aviation trainers housed in a hangar. Why? It's just too expensive to house a fleet of airplanes in a single large hangar, or even in multiple small hangars.

Because ultralights are based in rural areas, it's feasible to keep an ultralight in a hangar. Hangars in rural areas can be rented for as little as $50 per month. High rent at a rural airport seldom exceeds $300 per month.

Hangars at city airports are very expensive, often costing more than $1,000 per month. In addition, it usually takes several years on a waiting list to obtain a hangar in the city.

The lack of hangars to protect the sails from ultraviolet deterioration is a significant obstacle to basing a sport plane at a city airport. The alternative—covering and uncovering the airplane—takes too long for a flight school to do every time a student wants to fly. On the other hand, one dare not leave Dacron-covered sport planes in the sun for an appreciable length of time.

Not all ultralights have sails. Some have aluminum wings, some are composite, and some have Citabria-style cloth covering treated with Stits or Poly-Fiber. But these ultralights are much more expensive than the traditional $20,000 tube-and-fabric ultralights, such as Quicksilvers, Golden Circle T-Birds, Challengers and many others.

Unless someone can devise a paint for Dacron sails that is far more effective against ultraviolet rays than PPG, it's unlikely that traditional Dacron-covered ultralights will become city-based sport planes.

One affordable solution to protecting ultralight sails is to house the airplane in a shade hangar. A "shade hangar" is one with a fabric (or metal) top that is open on the sides. A shade hangar can be thought of as an airplane "umbrella." Because there are no sides or expensive doors, shade hangars are quite affordable, usually costing no more than $3,000 to $4,000. Examples are the shade hangars manufactured by Cover-It or Poly-Steel.

Many ultralight pilots own an acre or two of land from which they fly their airplanes in rural areas. They can readily erect a shade hangar on their own property—such hangars usually don't even need a building permit.

But shade hangars are definitely not welcome at city airports. For perceived liability or aesthetic reasons, it's almost impossible to get permission from airport managers to erect a shade hangar. Even Plane Pocket has had marginal success in getting its innovative "Pocket" shade hangar into city airports.

It's not only shade hangars that airport managers disdain. Throughout the nation, many airport administrators look unfavorably upon ultralights and experimental or ultralight-type aircraft. The annals of ultralighting are filled with articles about ultralight pilots who have been banned from airports—even *rural* airports. There is even a manual about how to gain access to a hostile airport. (See *Ultralight Vehicles: Access and the General Aviation Airport Environment* by Bob Moorman, available from the EAA.)

In some cases, with the help of Bob Moorman's book, ultralight pilots have successfully sued airport administrators to gain access to an airport. However, this is often a Pyrrhic victory. Even though it may be determined by a court that an ultralight has a legal right to use a particular airport (usually because it received Federal funds), an airport administrator who is determined to keep ultralights away can do such things as demand excessive insurance or refuse to sell fuel (most ultralights use automobile fuel).

If that doesn't work, the administrator will complain to the FAA that an ultralight pilot is operating in a manner hazardous to general aviation aircraft.

Imagine how a hostile administrator is going to react when he sees dozens of newly-certified sport planes using his airport, especially a slow-moving, strange-looking *powered parachute*!

Under the Sport Pilot initiative, powered parachutes are eligible to become Light Sport Aircraft. As an LSA, a powered parachute is not only eligible to fly into a rural airport, but also a city airport. I can hardly wait to see a powered parachute fly downwind at 28 mph at Hawthorne Airport, California, three miles from LAX.

Obviously, a whole new set of operating rules needs to be created to accommodate the type of flying done by unique and slow-moving powered parachutes and trikes (powered hang gliders.) This is one of the main subjects I discussed with FAA representatives Dan Billman and Tim Eldridge at Sun 'n Fun.

In order for Sport Pilot to be a success, especially at city airports, the FAA needs to embark on a concerted effort to educate airport administrators about the capabilities and limitations of sport planes, and to persuade airport personnel to set aside any hostile attitudes against tube-and-

fabric aircraft. Better yet, the FAA should counsel and educate administrators to instill a thoroughly positive attitude toward sport planes.

Administrators should be made aware that Sport pilots and their aircraft are FAA tested and certified. Sport planes have the potential to rejuvenate general aviation. Many Sport pilots will gravitate from LSA to general aviation aircraft and upgrade their certificates to Recreational or Private pilot. Sport manufacturers will create jobs, and create a demand for aircraft accessories, such as radios and GPS equipment. Even airport restaurants can expect new customers.

Administrators should be encouraged to permit shade hangars to be erected at their airports. Traffic patterns to accommodate sport planes need to be established so they can avoid general aviation aircraft. When doing touch and gos, sport planes should fly a pattern that is closer to the airport and lower than traditional aircraft. Powered parachutes should be allowed to land and take off from the grass or other unused areas of an airport.

Sport pilots should be taught how to depart from an airport in a "box pattern," so that sport aircraft can gain altitude within the vicinity of the airport before departing the traffic pattern. It is much safer to fly a sport plane, powered by a two-cycle engine, at a higher altitude over congested areas than the minimum 1000 feet allowed by the Federal Air Regulations.

The shape of an ultralight wing creates a lot of aerodynamic drag. An operating engine can easily overcome this drag. But if the engine fails, the drag causes the ultralight sport plane to experience a steep and rapid descent. A sport plane needs considerable altitude over a congested area in order to have time to select a suitable emergency landing spot.

In my opinion, the safest method for a sport plane to land at a city airport is to fly high overhead and then circle down into the traffic pattern for landing, all the time staying within gliding distance of the runway. Of course, an entry of this type takes coordination with the traffic tower. Airport traffic controllers should be taught to handle sport planes in this manner, and Sport pilots should be taught to request this type of overhead approach.

Sport pilots must be taught to fly high above congested areas, and be extremely proficient at landing inside a designated area with an engine inoperative. Pilots must keep in mind that two-cycle engines are notoriously less reliable than FAA-certified four-cycle Continental and Lycoming engines.

At the present time the FAA does not investigate or even keep a record of ultralight accidents. (Several private national ultralight organizations do keep such records.) Most accidents are uneventful to people on the ground, because ultralights are flown only in rural areas. To my knowledge, there has not been a single "non-participating" person on the ground who has been injured from an ultralight accident.

However, it would certainly make the headlines if a sport plane crashed into a city building. Not only would such accidents raise public ire, it wouldn't take long for LSA insurance costs to skyrocket. Even now, it's almost impossible to get insurance for ultralight flying. Avemco and Falcon refuse to insure a student who flies an experimental airplane. Many ultralight pilots fly without insurance because they know the chance of injuring a third party is slim because of the abundance of vacant land in rural areas.

But there is not a lot of vacant land within a city. The FAA needs to foster an attitude of safety among Sport pilots so that insurance companies are not afraid to offer insurance. The national ultralight organizations may need to band together to create an "in house" insurance pool, called "captive insurance." (Captive insurance is a type of insurance in which the insured persons are also the shareholders of the insurance company. In other words, they are essentially insuring themselves.)

Most airports, especially ones located in cities, require an aircraft based at the airport to not only

have insurance, but to also include the airport as a "named insured." Traditionally, the FAA has completely ignored the subject of insurance. If Sport Pilot is to succeed the FAA must address the present insurance crisis. If necessary, the Federal government itself should offer insurance (or underwrite a policy) just as the government has guaranteed loans for the airlines and provided terrorism insurance.

Everyone agrees that the upcoming Sport Pilot initiative offers exciting opportunities to enhance both ultralight and general aviation. But the FAA needs to join Sport pilots, airport administrators, manufacturers, air traffic controllers, and insurance companies in developing creative and workable solutions to the need for hangar space, special traffic patterns, safe flying procedures over congested areas, insurance, and acceptance of sport aircraft into the aviation community.

For more information about the subjects mentioned in this article see the web sites below.

Avemco Insurance: www.avemco.com

Cessna: www.cessna.com

Challenger: www.quadcitychallenger.com

Continental Aircraft Engines: www.tcmlink.com

Cover-It: www.coveritshelters.com/commercial/aircraft.html

Dacron: www.dupont.com/fiberfill/about/dacron-story1.html

EAA: www.eaa.org

Falcon Insurance: www.falconinsurance.com

Golden Circle T-Birds: www.goldencircleair.com

Lycoming: www.lycoming.textron.com

Plane Pocket: www.planepocket.com

Poly-Steel: www.weatherblockshelters.com/airplane_hangars.html

PPG: www.ppgpaint.com

Quicksilver: www.quicksilveraircraft.com

Sailboat sails: www.supersailmakers.com/production/w-z.htm

Stits (Poly-Fiber): www.polyfiber.com/stits

Sunbrella: www.sunbrella.com

Ultraviolet Rays: www.ns.ec.gc.ca/udo/uv/uvandyou.html and http://imagers.gsfc.nasa.gov/ems/uv.html

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