



Three light-sport aircraft in a hangar — Jabirus.

# PILOT TRANSITION TO LIGHT-SPORT AIRCRAFT AND ULTRALIGHTS

What? Me, worry?

BY SCOTT SEVEREN

**HAVING BEEN LUCKY ENOUGH** to work with several ultralight vehicle and light-sport aircraft manufacturers throughout my career, I've been able to provide demonstration flights and pilot transition training, and share that experience with a variety of people. This has offered a perspective of the different ways people approach flying.

It seems there are two primary types of pilots: the listeners and the doers. We all do both (thank goodness), but some lean toward one or the other tendency.

The listeners are really in tune with the airplane. They listen and engage with the airplane, depending on what it tells them. Something akin to dancing with a great partner, constantly engaging and playing off each other's moves. I haven't figured out if these people have innate pilot abilities — as if their ancestry report had birds entwined somewhere — or if they are just

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curious people who have worked hard to learn about flying. I must admit, I am in the last category.

I have two older brothers, Rand and Gary. We all worked together in the early days of ultralights at our ultralight flight park. Rand could always sense what was going on while flying and knew just what to do — one of those natural pilots. Growing up he was always watching birds. Gary and I, well, we had to study, work, and learn the mechanics of aviating. I should qualify work. If you can refer to messing with different kinds of flying things five or six days a week as work, then we worked, and hard!



Scott providing LSA transition training to Kaytiann Colca.

## ANOTHER POINT OF VIEW

BY ANDY FOSTER



To buy my Flight Design CTSW, my insurance company required I fly at least five hours while performing 10 landings with a CFI checked out in the airplane. Luckily, a guy who fit that description was based at the same California field on the western edge of the Sierras the airplane was. So, we met for several days, flying in the morning to get our work done before the heat of the August sun. The mountain winds made conditions too rough for a light-sport aircraft newbie, and the instructor spent a lot of time in the pattern yelling "Cork on the water!" when I was trying too hard to smooth things out. I still remember that to this day.

My insurance company was making me do this because it was guys like me who were (and still are) at the top of the LSA accident chain. Flying an LSA is often a mixture of reacting quickly while at the same time not overreacting by being too fast or adding in too much. Power and energy management is sometimes subtle and always essential. In my CT, five seconds of 300-plus rpm, if not quickly reduced, will propel me down the runway. An LSA's low inertia translates to fast acceleration or deceleration, climb or sink, at rates dependent on that particular airplane. I urge you to consider transition training for LSA flying as essential. LSA will prove to you that an airplane is an airplane until it's not, and finding that out in the air can be an exercise in Russian roulette. May the wind god not notice you're airborne when you try to prove me wrong.



*Andy and a previous student, Ryan Miller, during an intro flight in his Flight Design CTSW.*

I have instructional time in Flight Design CTSWs, Remos GXes and G3s, and an RV-12. Each has its own personality. The CTSW's depends on the flap setting you use. It will climb like an elevator, fly really slow, or race down the approach to keep a jet from running over it — all depending on where the flaps are set. The airplane demands you know how to use your feet; taildragger pilots will be right at home. The Remos GX reminds me of a Cessna 172 while the G3/600 acts like a C-172 and CTSW mated and had a child. The RV-12 is different from them all and reminds me of our Grumman Cheetah.

LSA flying is fun. Keep it that way by being properly trained and then fly all over the United States like we do.

**Andy Foster**, EAA 1018032, is one of two Young Eagles program co-coordinators with EAA Chapter 12 at Ellington Field. Andy has about 760 hours of LSA time out of 2,100 hours' total pilot time, about 1,100 hours in an F-14A, and holds an FAA commercial/instrument ASEL certificate. He was a part-time safety engineer with the Flight Safety Office at Johnson Space Center, and the lead engineer (contractor) for the space shuttle flight operations group. Andy has experience in 20 different general aviation aircraft and a few military aircraft, one with a big radial engine and another with twin jets.

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## EXPERIMENTER

ULTRALIGHT WORLD

Then there are the doers who focus more on the procedure than the goal. What are the numbers? At which speed will we rotate? What are pattern and approach speeds? They will mimic the aircraft flight manual (AFM) or pilot's operating handbook (POH) or follow prescribed actions regardless of what the airplane is doing. I used to (try to) fly that way, and that was some of the hardest flying in my life!

Not to say that one should ignore the POH or the manufacturer's procedures. They are valuable resources and required reading (and understanding) for an aircraft operator. However, the POH or AFM do not respond to the aircraft in flight.

What does any of this have to do with pilots transitioning to light-sport aircraft (LSA) or ultralights (ULs)? Everything. It's all in the approach! Let's see how a GA pilot transitioning into LSA and ULs can play out.

**Fortunately, whether in an LSA or ultralight, landing is landing. You just keep the airplane flying as long as you can. Patience is a virtue.**

Listeners will notice the more rapid acceleration of the low-inertia LSA and will be intrigued at the remarkably short takeoff roll in the high-mass, lower-inertia ultralight. Doers will work to set the LSA at 80 knots for a climb-out as the airspeed indicator passes through 90.

Before reaching cruise altitude, listeners are in tune with the LSA climbing at 1,000 fpm. Or, even better, they are aware of (and enjoy) the steep climb profile and ease the throttle back, adjusting the elevator to affect a smooth entry to cruise altitude, allowing the airplane to trim up to its cruise speed.

Doers adjust the throttle a few times as the aircraft attempts to trim to its new thrust and changing elevator settings. They may not be allowing time for the four forces of flight to rebalance to each change. Of course, now they need to get back to cruise altitude.

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Scott congratulating Joel on getting checked out in a light-sport aircraft.

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Scott (right) and his brother, Gary (left), en route to EAA AirVenture Oshkosh 2018 in a Jabiru LSA.

Heading back to the airport, doers are concerned that there are faster and slower aircraft in the pattern.

Listeners recognize their inertia and know they can speed up to integrate into the pattern and easily slow back down as needed. Conversely, they can slow the LSA down significantly, because they know it will accelerate pretty quickly. What great tools these are to blend into the pattern, reducing other pilots' worries and the tower's workload.

On approach in an ultralight, doers have difficulty holding airspeed, as the very low wing loading vehicle mildly bobbles around due to some rising air currents (they didn't feel this in a Bonanza or LSA).

At the last hundred or so feet AGL, listeners know how draggy the low-mass/low-inertia ultralight is, so they are prepared to move the stick forward to keep their airspeed up, as the wind will decrease a few miles per hour as they get closer to the ground and there is not enough inertia in the ultralight to make up for the decrease in wind. Listeners are not bothered that the aircraft is on a steeper glide slope because they have good airspeed and are in full control of the aircraft.

I am reminded of a meeting in the early days of ultralighting to work on the definition of Part 103 with several people, including Lyle Byrum of Quicksilver creation (and re-creation). He stated it like this: An ultralight is like a wadded-up piece of newspaper — you throw it forward, and it goes about 2 feet before it drops!

Doers are concerned about the steeper flight profile and add throttle to compensate. They now have to adjust altitude *and* airspeed.

Fortunately, whether in an LSA or ultralight, landing is landing. You just keep the airplane flying as long as you can. Patience is a virtue.

Listeners are amazed at the short landing roll of the ultralight, and so they exit the runway at the first taxiway.

Doers recall that on approach in the LSA they were fixated on speed instead of constantly monitoring the intended landing spot and were not sure if they were coming in short or would overshoot. After landing, they were instructed to take Taxiway Zulu to parking.

These are some observations with clues to the differences GA pilots might expect when choosing to expand their flying abilities in an LSA or ultralight. See the sidebar for comments from Andy Foster, an instrument-rated commercial pilot and CFI who teaches in LSA and is flying under BasicMed. He was an astronaut and flight controller instructor with a specialty in ascent and ascent abort operations. *EAA*

**Scott Severen**, EAA 181476, began flying hang gliders in 1973 and has built and manufactured several ultralights and aircraft. He is an SEL-rated pilot with more than 2,000 recreational and advanced flight instructor hours in powered and nonpowered air vehicles. He also has more than 1,000 hours in aircraft, including time as a test pilot and flight conformance check pilot for light-sport aircraft. Scott lives with his wife near Dallas where he operates U.S. Sport Planes and is an importer for Jabiru Aircraft.

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