

LEARNING TO FLY THE ICON A5



**THE MAKER OF THE AMPHIBIOUS A5 LSA
OFFERS FUN FLIGHT TRAINING WHILE
SORTING OUT PRODUCTION ISSUES**

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fter a fitful production start for the A5 light-sport aircraft, Icon Aircraft has regrouped. The company has built a composite factory in Mexico to “improve and control the manufacturing process while simultaneously reducing cost,” says Icon’s founder and CEO, Kirk Hawkins. While the new Tijuana-based composite shop is getting up and running, Icon has opened two training facilities for its A5 amphibian — one at its headquarters in Vacaville, California, and one in downtown Tampa, Florida. A third facility is expected to open soon at an undisclosed location in Texas.

Icon has taken a lot of flack in the past 10 months for a restrictive sales contract that angered some buyers, and for reserving all of the early production airplanes for its flight-training program. But there is a solid strategy behind this apparent madness, Icon promises, and if customers can remain patient, they may end up thanking the leadership team for its decisions.

Why this new focus on training? Hawkins says that of Icon’s 1,800-plus deposit holders, about 30 to 40 percent are nonpilots. Hence there is a great need for training those buyers

before they take delivery of their airplanes. Icon had originally hoped it could train new pilots in about three weeks right before delivering their airplanes. But in developing its training curriculum, the company found this goal to be unrealistic. With the availability of A5 training platforms at various locations around the country, pilot training can be spread out over a longer period.

Icon has designed several courses in-house to satisfy pilots and student pilots with a wide variety of flight experience. With Jeremy “Hilda” Brunn, a former U.S. Navy F/A-18 pilot, as the core program developer, the curriculum is loosely based on military flight-training philosophies.

One major departure from standard civilian flight training is Icon’s focus on angle of attack as a primary instrument. And in the A5, the AOA is located top and center on the panel.

There is also a strong focus on briefing and debriefing each training flight. The preflight briefing allows the instructor to go through the details of the flight. The debrief uses what Icon’s director of flight operations and training, Greg “Groucho” Zackney, a Marine Corps-trained pilot with experience flying the AV-8B Harrier, calls the “Blue Angels method,” wherein there is a strong focus on constructive criticism without judgment.

Currently, all of the instructors Icon has hired are former military pilots; however, the flight department will hire civilian instructors who meet certain criteria, Zackney says.

I had a chance to experience the training program firsthand with Zackney as my main instructor. Icon’s program was not my first experience flying the \$250,000 amphibious LSA. Last summer, I was part of a group of journalists who were limousined around Napa Valley to and from a top-notch hotel in Calistoga. We were treated to an incredible day on Lake Berryessa with two houseboats, water skiing, Ski-Dooing and more under clear skies and calm winds.

During my more recent visit to northern California, the mood was as different as the weather. This time around, ominous clouds and gusty winds towered over the area as I arrived at the headquarters at Nut Tree Airport (KVCB) by my own transportation.

The first planned training day was dominated by winds over 20 knots, which Zackney said would be no good for training. And considering that we were set to fly a light-sport aircraft, I agreed. Instead of flying, I got a tour of the immaculate production facility and completed the ground-school portion of what Icon has named the TX-S course, the program offered to pilots who already have a seaplane rating. This course includes a home-study portion, ground instruction, and approximately four

ICON TAKES NEW STUDENTS STRAIGHT TO THE LAKE.

Icon's Flight Center. Light-sport airplanes generally rent for between \$100 and \$140 per hour. So those with a tighter pocketbook would be well advised to start their training at a local LSA flight school to save money.

However, the fun factor is pretty much guaranteed to be higher with Icon. Rather than forcing the students through maneuvers, slow flight and stalls before learning how to land the airplane, Icon takes new students straight to the lake. Icon instructs its students to fly at gradually lower altitudes over the water, starting at 500 feet, while maintaining an approximate heading. Without the narrow lateral confinement of a runway, this is by far the most fun and scenic way to learn how to control an airplane, and possibly the best method for teaching landings. Rather than flying a specific pattern at precise power settings, flap settings and speeds, the student can set up with full flaps right away and focus only on maintaining the white line on the AOA and controlling the airplane until it kisses the water.

As soon as the second lesson, the curriculum for nonpilots includes "deck-angle drills," in which the student uses power to maintain a set altitude as low as a few feet above the water — an exercise I played around with, too. If you touch the water, who cares? Fun? Heck yeah.

While the weather during my recent trip to Vacaville was the polar opposite of what California is known for, the scuzzy conditions helped me get better insight into some of the issues that may have played a part in Icon taking a step back in the production process of the carbon-fiber LSA.

The winds died down the second day, but instead dark rain



and a half hours of flight instruction with landings.

Zackney also took the time to explain how the other courses work. The TX-L course is offered for licensed pilots who are not seaplane-rated. Its ground portion goes deeper into the concepts of water operations, with eight hours of flight time estimated for completing the course.

With so many nonpilot deposit holders, Icon also offers specific training for buyers without prior flight experience. The training material uses

new, refreshing examples to simplify concepts for trainees who have never set foot in a cockpit. There is an Initial Sport Solo program for those whose goal is to prove that they can fly the airplane alone. Icon estimates about 10 hours of flight time to complete this course (a number that appears optimistic). A sport pilot license covers an entire sport pilot course with a seaplane endorsement, estimated at 20 hours of flight time. That is the minimum amount of flight time required for the certificate, so if you have never

flown before, you can expect to fly quite a bit more.

All of Icon's courses are billed on an hourly basis at \$250 for the airplane, \$95 for the instructor, and anywhere from \$150 to \$600 for the ground-instruction portion, depending on the course. There is also a sport-flying introduction flight offered to pilots and nonpilots for a cost of \$595.

Nonpilots can certainly receive their sport-pilot training at a regular LSA flight school for less than it will take to achieve the certificate at

Airplanes in Icon's training fleet are easy to identify with their distinguishing red-and-white paint scheme and a large identifying number on the vertical stabilizer.





The cockpit layout of the Icon A5 is reminiscent of a sports car, making it more inviting to nonpilots.

1. At the center of the pilot's field of view is the AOA gauge, which makes it easier for new students to learn how to land and keep the airplane in a safe flight attitude.

2. The panel includes only basic instrumentation, as the airplane is designed for VFR flight only.

3. A Trig comm and transponder, and a Garmin portable GPS, provide small, lightweight avionics solutions.

4. A small picture on the screen, to the left of the gear lever, shows whether the airplane is configured for water or land.

5. A single power lever controls the Rotax engine.

6. An armrest adds ergonomic comfort while you control the center stick.

WHAT HAPPENED WITH ICON'S PRODUCTION?



The new Vacaville production facility provides plenty of space for hundreds of Icons to come together. Now the company must iron out the supply-chain and quality challenges that often impact new aircraft manufacturers.

Walking around Icon's factory floors in Vacaville is much like virtually walking through the renderings the company released in 2014 when it first announced the move from its initial headquarters in Tehachapi, California. The offices are modern and the production floors are squeaky clean, with parts and pieces perfectly organized at each production station. Two paint booths are erected, and there is space for a third. Behind the paint booths, carbon-fiber components are glued together into what some consider to be the ultimate flying toy.

While a look into the factory makes a visitor feel good about the structure and organization of the production, the lack of activity tells another story. CEO Kirk Hawkins says the supply chain was unable to keep up with the rate of demand. Some modifications have also been made to the initial design of the A5.

For example, to meet the strict weight limits, the initial design had thin cables for the flaps, which made the flaps stick at times. Thicker cables were installed to solve the problem in ASN2. Other weight-reducing efforts included eliminating the filler (used to smooth out the composite texture) in areas where it's not necessary. Filler is still used for areas where aerodynamic efficiency is critical, such as the leading edges. Modifications are also in the offing for the airspeed indicator and altimeter to make them easier to read.

The biggest change is that the production of the composite airframes for the A5 has moved to Mexico. By the time you

read this, production at the Tijuana-based factory should be up and running. The first airframes are expected to arrive in Vacaville for final assembly in May.

With the parts already in supply, Icon is producing a total of 21 airplanes. While some of the customers of those early airplanes will complete their purchase, all of the airplanes will be leased back to Icon. The company will maintain, insure and store the airplanes, and the owners can come fly them for the cost of fuel (once they have completed the training course appropriate to their flight experience). Once the new airplanes start delivering, these customers will get a new A5, which will incorporate all the improvements. As noted in the story with the rain leaks, there are some quality issues that Icon is ironing out.

Some customers may be dismayed by this major delivery delay, but they should in fact be overjoyed. Keeping the airplanes at the training centers will allow Icon to put them through their paces and get feedback to make the delivered airplanes relatively squawk-free.

Outside the main production building, there are smaller office buildings and two hangar structures, where the completed A5s are stored and maintained. One great benefit of being able to quickly fold the wings of the A5 is the ability to fit many airplanes in a relatively small space.

Aerospace companies have proved time and again that certification is only the first major challenge in becoming a successful manufacturer. Getting quality production up to speed is at least as difficult as obtaining that coveted FAA sign-off. Several companies in recent years went out of business after failing to get production and quality up to speed. Adam Aircraft and Eclipse are two prime examples. It would be a shame to see the same thing happen to Icon, as the company has successfully attracted a new breed of pilots — something this industry is in desperate need of.



THIS KIND OF PLAY IS WHAT THE ICON A5 IS MADE FOR.

clouds threatened the area. The ceilings were around 3,000 to 4,000 feet, so I wasn't concerned that our flight would be canceled. I reasoned that since the airplane is made for water, we would be able to continue the flight training despite the threat of precipitation.

A row of A5s designated for training — distinguished by a red-nose paint scheme and a large number on each tail, indicating the plane's designated number in the training fleet (there will be 15 in all to start) — were perfectly lined up outside the maintenance hangar. After a thorough preflight, Zackney and I strapped in, powered up the 100 hp Rotax 912 engine, and climbed north from KVCB to start the training with steep turns, slow flight and stalls over the flat farmlands in the southern part of the Sacramento Valley.

After my experience last summer, I was not surprised to find the airplane very stable and easy to fly at any speed. Once in the red area of the AOA, the A5 stalls straight; in fact, if you keep it in the stall, it barely trembles.

After completing the required maneuvers, Zackney instructed me to point the A5 toward a canyon that cuts straight toward the scenic Lake Berryessa. The clouds over the hills were darker and lower than those over the lush valley floor, but they were plenty high for water practice. As we followed California State Route 128 into the canyon, rain began to fall. But the water wasn't just falling on top of the sexy shape of the Icon. It was dripping into the cockpit.

We turned around and headed back to the airport. Rather than cut the lesson short, we stayed in the pattern and did some touch-and-goes. With only two runway landings in the A5 under my belt, I expected a challenge. But other than getting used to the slightly nose-low attitude during the last stages before the flare, I found the landings easier and much stabler than those of other airplanes of this weight class. The only thing that was a bit challenging was slow-speed taxiing.

I was fortunate to be able to extend my visit, and the third day was definitely the charm. As the sun was rising, I took a flight with Shane Sullivan, a former F/A-18 Navy pilot who was recently hired by Icon. We reached the easternmost finger of the lake, dropped down low, and I flew above the glassy water, tracking the scenic canyon to the main part of the lake. Very few flying experiences can beat the unobstructed view from the cockpit of an A5 while flying down a narrow

canyon a few feet above the water in the early-morning light.

Once at the main portion of the lake, I progressed from basic touch-and-goes in the open water to short-field water landings in a tiny cove. The approach took us over the tree-clad hills on the western side of the lake as the cove opened into the lake's wide-open core. After a couple of practice runs, I was able to get the amphibian stopped before the end of the cove, and was amazed at the minimal landing distance I achieved after just a little training.

The conditions were perfect, with light surface chop making it easy to gauge the distance from the water. We also did a bunch of water operations. Powering the Rotax up to 4,000 rpm, I plow-taxied among numerous small birds that were quick and smart enough to get out of the way. The seawings on the A5 help provide exceptional stability on the water and allow for much sharper turns than a regular seaplane. This kind of play is what the Icon A5 is made for. I could not wipe the smile off my face as we landed back at KVCB.

After the debrief with Sullivan and a quick snack, I went back out with Zackney to complete the final flight in the TX-S curriculum. One of many things that make Lake Berryessa a perfect training environment is its changing weather conditions. When we returned to the lake mid-morning, there was choppy water, with whitecaps in some areas while others were glassy. As a result, I got some real-world practice in normal, rough-sea and glassy conditions, something that is not usually accomplished in the same day. I also had a chance to try beaching, a challenging but fun exercise.

While I imagine many deposit holders are disappointed that they can't bring their A5 home yet, the training centers allow them to go have some fun with the airplane today. Qualified pilots can also rent the airplanes. I'm excited to return to Vacaville and let my friends and family experience the extreme fun of amphibious sport flying. 