

A HULL OF A DIFFERENCE

BY STEVE REEP

A pilot in the market for an amphibian may wonder about the difference of the airplanes that are available. There is the float camp and there are the hull aficionados. Bear in mind that all float planes were designed to be land planes and floats were a later adaptation. Only the Beaver did it the other way around. It was designed to be a float plane and some were converted to wheels later.

On the float planes, the next step was to add wheels back to the floats to convert the airplane into an amphibian.

The other choice was to build a flying boat with the land landing gear already a part of the package. This became an airplane with a hull for support on the water but with sponsons (floats), added out on the wings, or sticking out from the fuselage for lateral stability.

If the prospective buyer is impressed with the probably greater carrying capacity of a hull airplane of equal horsepower, he may wonder about the various pluses and minuses of what's available out there in hull airplanes. One of the most determining factors will be price. There is nothing cheap about anything to do with water. It doesn't matter whether it's a sea shore cottage, a boat or an amphibian. If it has to do with water it will cost a little more to go first class. Don't be scared off. Remember life is too short to drink cheap wine.

A special breed of pilot does water flying. That doesn't mean they have to live without the convenience and ability to service their airplane on land and park it out of the weather.

The next step is to decide which hull airplane the buyer should look at. At the low end of "new", price wise, would be a home built or a Sea Ray and like types. Second hand homebuilts would be the most reasonable. There is always that nagging thought in the new owners mind, that he didn't see the pieces as they were glued or welded together.

The next step up, price wise, would probably be a Sea Bee. This is a tough old bird. It is a boat that also flies. If the prospective buyer is not in a hurry and likes elbow room, the Sea Bee might appeal to him or her. However, it is a 50 year old airplane. In that time, it could have had a few drinks from salt water. It is a big job to keep an airplane corrosion free. Salt can sit and feed under rivet heads and between skin laps, or skin and structural members. So look closely into appearance and maintenance.

The older Lakes (Skimmers) could have the same problem, although in later years there was alodining and more care in protecting the aluminum during construction. In fact, the Seafury, built by Lake, is designed to be a salt-water airplane. This comes either as a

LA250 or LA270-T (turbocharged) airplane. Steel parts and working parts (landing gear, etc.), which can be submerged in salt water, are protected with cermetel (ceramic coated), nearly eliminating the effects of electrolysis corrosion.

When you see an amphibian out on a sand beach, on wheels, it is a hull airplane with big feet. Float amphibians generally are restricted to ramps; Lake training requires wheels down sand beaching.

The Lake is the only FAA certified new hull, single engine amphibian being built. They are built to order and take about four to six months from laying the keel to leaving the paint and radio shop. The airplane can vary in price from \$500,000 to \$1.3 million for the Seawolf, complete with hard points for underwing stores, long range fuel tanks, SAR pods, maritime surveillance equipment, etc.

In that buying a new Lake could diminish the inheritance that a pilot leaves, let us look at a Lake that has been “broken in” by a previous owner. The factory sales office in Gilford, New Hampshire has a used aircraft division.

The airplane is sought after as shown by the prices as they steadily rise. Let me give an example: I bought a 1980 Lake Buccaneer in 1985. It was \$80,000 new. I paid \$57,000 as a 5 year old airplane. Six years later, I sold it for \$67,000. That owner sold it two years later for \$79,000. It is now 19 years later and it is worth \$85,000.

There is nothing wrong with owning an airplane that has been well-maintained and flown 70 to 100 hours a year. The engine stays rust free internally and the airplane is not likely to let a pilot down. It is not always a plus to have an older airplane that does not have much time on it. A parked airplane for any length of time should have a pre-buy inspection that includes checking the cam lobes for corrosion or excessive wear. Worn cam lobes will cost you power and some lakeshore trees are tall. Call Lake Aircraft for a list of service centers. Lake does have Factory Direct Customer Service and Product Support. This has its advantages, AOG in a remote lake or in the Bahamas, “CALL THE RIVARDS”. How many aircraft company owners make themselves available. Try going to the top at Raytheon or General Dynamics! Armand Rivard in Kissimmee, Florida handles international and government sales; and, Bruce Rivard in Gilford, New Hampshire is in charge of North America, new and refurbished used Lake Division (TEAM LAKE). The best place to buy a pre-owned Lake is from the folks that built it.

Many airplanes are bad mouthed. The Lake is no exception. However, it is not owner pilots that do the maligning. It is generally the expert who has never flown the bird.

Let's look at some of the complaints. One is that it's too slow. If you want only speed, buy a P51. The LA270-T at 20,000 feet is 155 kts (180 mph). The LA4-200 is 120 mph from water altitude to 6000 feet. (It has been as high as 14,000 feet.)

The LA4-200 will normally beat a Mooney or Bonanza, airport to lake cottage door. With the Lake, there is no need of landing at an airport and renting a car to finish the journey to the cottage on the lake. Elapsed time favors parking on the beach.

Another complaint is that they porpoise. All seaplanes will porpoise if not handled properly. It does take longer to train in a Lake than a land airplane. It should. Adding water changes the recipe. It's another medium to be mastered. But with proper training porpoising is no big deal. This includes the porpoise (raising and lowering the nose rapidly on the water) from unusual wave action. This could come from a boat wake or a rouge wave higher than the other waves.

Correct action will stop the porpoise in the shorter airplane (LA4-200 and EP). However, with the Renegade (LA250 and LA270-T) during Lake's demo rides a porpoise is induced. Then leaving the controls free the airplane will correct it's own porpoise, this is due to a deeper V hull and to the stability of the Renegade being 3 feet 9 inches longer than the Buccaneer.

As long as the airplane is on the water, porpoises can be terminated with backpressure. Even too much backpressure is not harmful. It will slow the airplane down but it will also make the porpoising cease.

The bigger complaint is "yeah, but what about the bigger porpoise? The one that gets airborne between bounces". Both the longer and shorter hull can be a victim of these bounces. The shorter hull is more susceptible to these excursions. This is true of the shorter hull Widgeon, the jeep vs. the limo crossing a plowed field or the Buccaneer.

The longer hull of the Lake LA250 or LA270-T (only an engine difference) has a built in stability that not only lessens the likelihood of starting a bounce series but also tends to dampen the tendency to continue porpoising. This is why the demo ride includes an induced porpoise with hands off the controls, recovery. While we're discussing the demo ride, let's note that due to the use of only one trim tab offset on the left side of the elevator, generally no left aileron is needed for takeoff. The 200 series airplane has two tabs (one on each side of the elevator). Torque requires full left aileron at the beginning of a water takeoff for the 200 series on water.

HANDS FREE TAKE OFF – YES! The demo of the longer hulled 250 is made with no hands on the control wheel. Full throttle is applied (only a touch of nose up trim is applied first). The airplane raises it's nose and then settles down in a planning position. When the airplane reaches flying speed, it flies. This remarkable demonstration is basically the result of the length of the hull.

Now should the porpoising tendency of the 200 series be of a major concern to a present or prospective owner? I think not. When this airplane was built it was state of the art. The only thing required is proper training. With training in bounce recoveries there is no reason to get into trouble with a LA4-200 that hits a boat wake, etc. and bounces into the air.

Improper reactions can cause a problem with any airplane, including the LA4-200 and the LA250.

Most pilots have learned to fly with an engine out in front. If power was added, the nose of the airplane goes up. This is not true of airplanes with the engines (and thrust lines) above the horizontal pivot point of the fuselage.

On a Lake, with its engine mounted well above the water line and on the top of the airplane, thrust tends to push the nose down.

If the airplane is slowed for a water landing, and a bounce occurs, full throttle will try to lower the nose. If the speed is close to, or at stall, up elevator will have little or no effect and the engine will push the nose down hard. Generally as the nose is striking the water, (no airplane lands nose first) the pilot gets excited and pulls off the power. This raises the nose and the airplane aims up on it's bounce. The pilot then realized he's going to stall nose high and puts on full power. This time the nose tucks even more. This sequence is repeated until the nose is vertical. It ends with the whole day being ruined.

Proper training can eliminate this porpoise from accelerating into a newspaper headline.

A skip or bounce (for a number of reasons) can occur with any plane or degree of competency of pilot. The difference is, how you play the hand that is dealt to you. Knowing how to win the hand depends on the training.

A bounce on either take off or landing should cause an AUTOMATIC REACTION of the pilot to go to HALF THROTTLE. This stabilizes the airplane with neither a nose up nor a nose down attitude. If there is a good elevator feel (it is still effective). Add the rest of the power for a go around, or ease off the power (to about 12 inches MAP) and complete the landing. The only control of attitude may be engine power, if flying close to stall speed.

If there is little or no response in the elevator while in the air on a bounce at half throttle, DO NOT ADD MORE POWER, or the nose will drop. Let the airplane fall (it's more like a parachute decent) with the fuselage level with the water. Just before touchdown the wheel can be pulled back. You may or may not get the tail in first to soften the splash down.

There are some more training practices that can be worked on such as, proper elevator control in boat wakes on take-off. But, the use of the half throttle shows that training will compensate for the more pronounced porpoise of the shorter airplane.

Handling each hull will take some skill. The longer hull costs more to buy, but is easier to master.

There is another model of Lake that was intermediate between the LA4-200 and the LA250. This is the EP; this airplane is basically a LA4-200. However, the EP (extra performance) has more capability than it's older brother. It was built just before the LA250 was designed. It has a balanced engine (no yellow arc area on the tach).

The distinguishing feature of the airplane is it has a spinner and they zipped up its pants. The cowling wraps around the whole rear of the engine. The LA4-200 has no cowling in the rear of the engine. It is open and flat, creating drag and guiding the airflow so the entire prop is not effective. The EP wraps the air around the cowling and the entire propeller has air to bite into. This difference means that the EP can take four people off of the land and water. The LA4-200 can get four people off of land, but only three off of the water.

This makes the EP more valuable. It has a value \$40,000 to \$45,000 higher than a LA4-200 but still lower cost than a LA250.

One other possible complaint should be addressed. That is rough water handling. For one thing, a crosswind under a wing will not belly up a Lake. The low center of gravity has its advantages over a floatplane.

Training for rough water is generally restricted to one-foot waves for the shorter airplane. Twenty-four inch waves are the training limit for the longer airplane. These are training limits. However, pilot proficiency dictates the capability of the airplane. Actually, there is video of the Seawolf in four-foot waves. Depending on the necessity, a Lake can be operated in very rough water. They also have been know to float for days in the open ocean without sinking while in sixteen foot swells.

The airplane is built like a tank. A prospective buyer might like knowing that. It gives an owner a feeling of security.

So if you decide to go with a hull, you've gone to a hull of a good choice.

ABOUT THE AUTHOR

Steve Reep earned his seaplane rating in 1947 and is the author of "GO TO HULL" a book on flying the Lake, which is inventoried by SPA.