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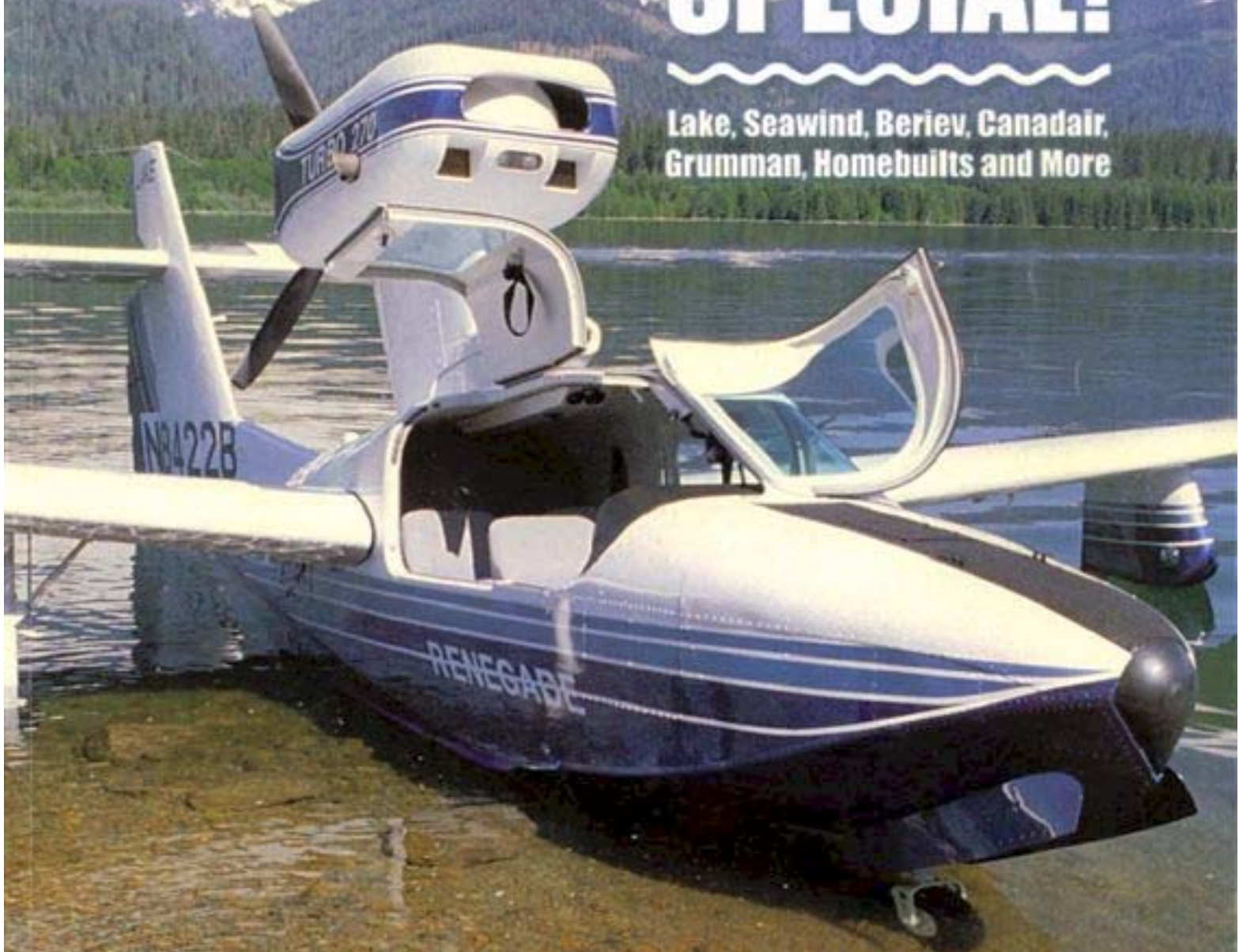
# WaterFlying

A Seaplane Pilots Association Publication

Vol. 22

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By Paul Seehafer

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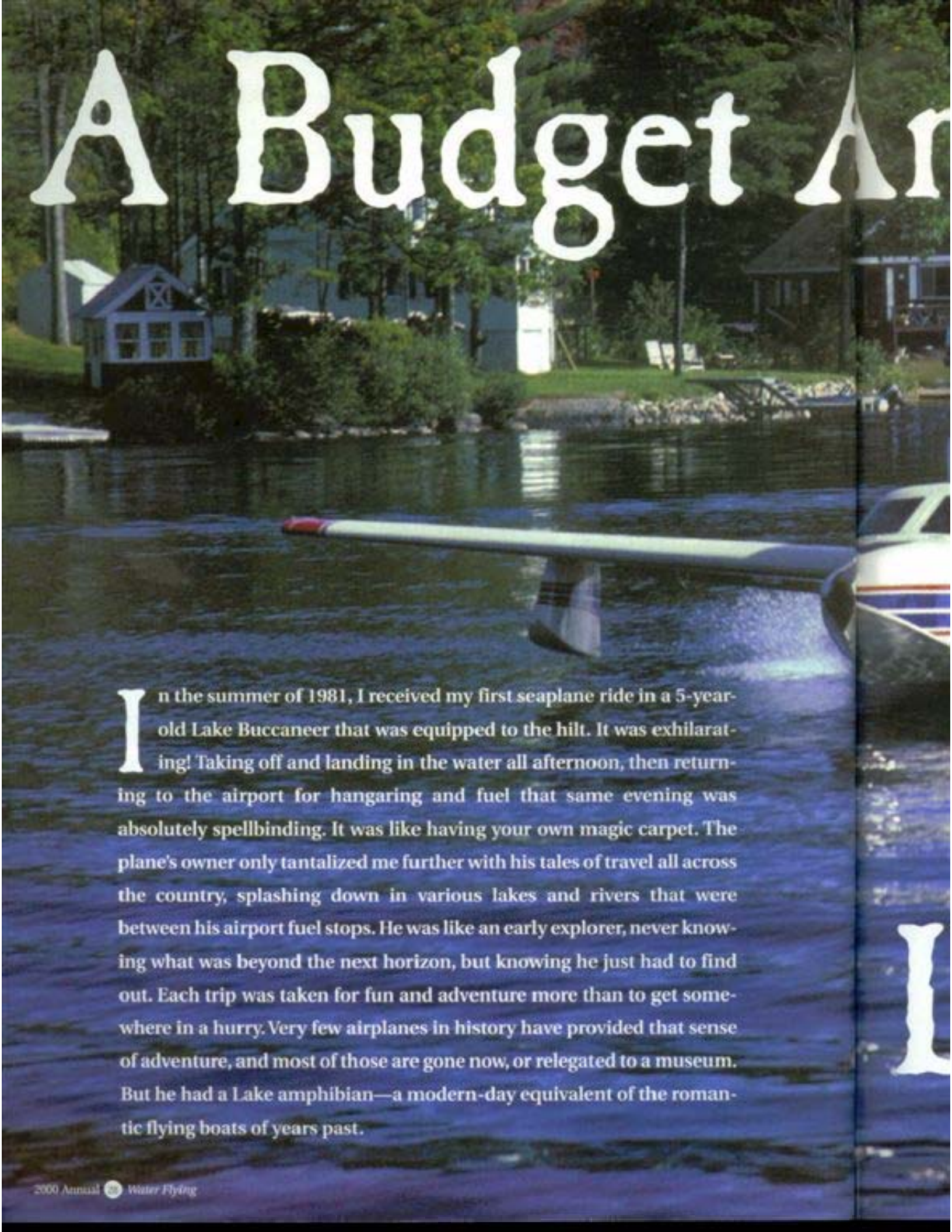
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# A Budget An

A photograph of a seaplane on a lake. The seaplane is white with a red tip on the nose and is moving across the water, creating a wake. In the background, there are several houses with gabled roofs and lush green trees. The water is dark blue and reflects the surrounding environment.

**I**n the summer of 1981, I received my first seaplane ride in a 5-year-old Lake Buccaneer that was equipped to the hilt. It was exhilarating! Taking off and landing in the water all afternoon, then returning to the airport for hangaring and fuel that same evening was absolutely spellbinding. It was like having your own magic carpet. The plane's owner only tantalized me further with his tales of travel all across the country, splashing down in various lakes and rivers that were between his airport fuel stops. He was like an early explorer, never knowing what was beyond the next horizon, but knowing he just had to find out. Each trip was taken for fun and adventure more than to get somewhere in a hurry. Very few airplanes in history have provided that sense of adventure, and most of those are gone now, or relegated to a museum. But he had a Lake amphibian—a modern-day equivalent of the romantic flying boats of years past.

# Amphibian

A white and blue Lake LA-4 amphibious aircraft is shown on a lake. The aircraft has a large outboard motor on the front and a smaller one on the rear. The background features a house with a balcony and trees.

*By Paul Seehafer, SPA #018784*

## The 180-hp Lake LA-4

Needless to say, I was bitten by the seaplane bug. I had to have one of these! So, as tactfully as I could, I asked the owner how much money I would need to get one just like his? He made a few comments under his breath about all of the equipment he had, and then showed me a brochure he still had from the original purchase. I'm lucky I didn't drown after falling off of his dock! Obviously, magic carpets didn't come cheap. It was a marvelous, magical airplane. But definitely out of my financial league.

Over the decade that followed, I played around with a lot of airplanes, including a homebuilt Osprey II amphibian and an Avid Flyer on floats. I really believed the Osprey would be the inexpensive alternative to the Lake amphibian I was looking for, but it wasn't even close. Flying the Avid was the most fun I'd had in an airplane, but the Avid was just too slow to be a good cross-country machine. The dream of a capable cross-country amphibian like that Buccaneer was permanently stuck in my mind, and so I continued my

search for an inexpensive alternative to a Lake. After investigating countless manufacturer's claims, I found that they all fell short. Real short. As much as I didn't want to, I ultimately gave up on the idea that an inexpensive alternative existed.

### Finding My Lake

It was in 1993 that I started to research the Lake market as a potential buyer. I was getting discouraged again at the high prices when I stumbled onto an older 180-horsepower LA-4 in dire need of restoration. It was far from pretty, but in the \$35,000 price range it was affordable.

Having been told not to buy a 180-hp Lake because they were underpowered, I hesitated on the purchase, explaining to the owner why I changed my mind. He insisted on demonstrating his airplane in the water for me so he could disprove the rumors. Out of curiosity more than anything else, I agreed to the demonstration.

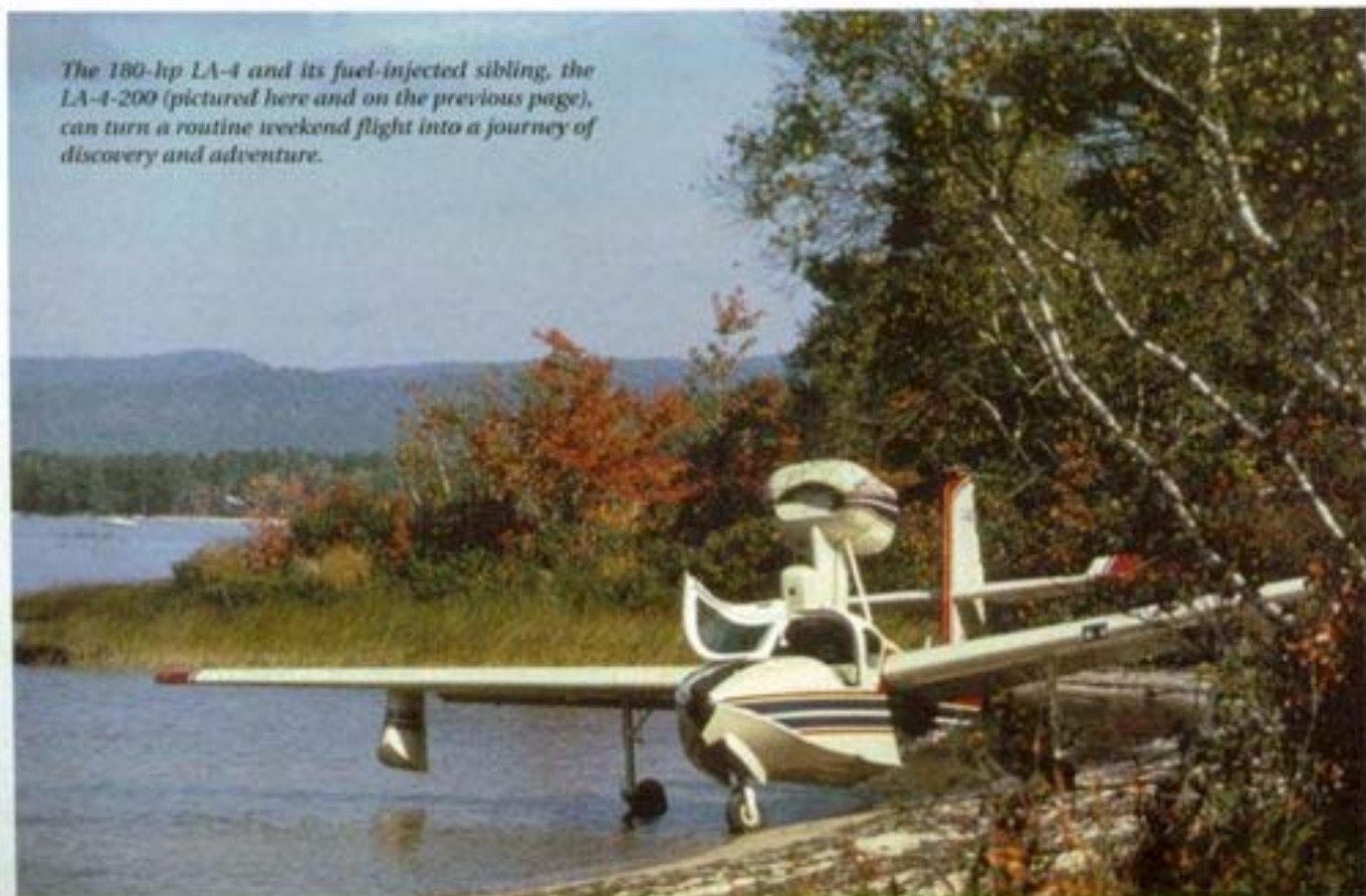
The seller and his friend brought it to the lake I live on and took me for a ride. It was a beautiful Wisconsin

summer day, with a calm wind and temperatures in the mid-80's. Water conditions, however, were less than ideal with widespread glassy water. Much to my surprise, the old LA-4 had no trouble lifting three full-grown men with a mostly full tank of fuel off the water! After an hour-long ride, I was convinced the 180-hp Lake could do anything I needed, so I bought it.

### Restoration

The next five years of ownership involved an extensive restoration. Even though this airplane was over thirty years old and had accumulated over 1700 hours of flight time, most of the mechanical systems were in excellent working condition. But what I saved on mechanical work I ultimately spent on cosmetics. By the time I was done I had invested approximately \$20,000 dollars in the restoration, plus a lot of my own time. But the end results were good—I now own a Lake amphibian that is finished to my liking; I know what is underneath all that new paint and interior; and I learned a lot about the airplane in the process.

*The 180-hp LA-4 and its fuel-injected sibling, the LA-4-200 (pictured here and on the previous page), can turn a routine weekend flight into a journey of discovery and adventure.*



Courtesy of Thom Lake

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The design is reminiscent of those grand Grumman flying boats—only smaller.

Lakes are essentially hand-built aircraft. You will find subtle differences between aircraft, even if they are within the same model year and serial number range. All of these aircraft are built strong, and it's obvious they were very skillfully designed. That shouldn't be surprising, since the Lake amphibian (originally known as the Grumman Tadpole) was really the last of the great Grumman flying boats. Through its evolution from Tadpole to Colonial Skimmer, LA-4, Buccaneer, Renegade, and now the military Seawolf version, the design is still reminiscent of those grand Grumman flying boats—only smaller.

#### Economic Utility

The LA-4's 840-pound useful load is very realistic. With my wife and I and a full tank of fuel, we have almost 300 pounds of payload left over for additional passengers or baggage. There is plenty of space in the baggage area, especially with the rear seat removed.

The 180-hp engine burns an average of eight gallons per hour, which includes a lot of fuel-guzzling water work. Because the Lake is faster than many of the floatplanes I fly with, I can throttle back to around 60 percent power for many of the trips we take. Even when I fly by myself, I typically cruise at low power settings to avoid making too much noise around the houses that surround the lakes and rivers where I operate. I'm quite content cruising at 105-110 mph for a joyride, but trimmed and loaded properly the LA-4 will do an honest 130 mph when pushed.

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Lake amphibian, courtesy of Tustin Lake

### Airport Operations

Lightly loaded, the 180-hp Lake's 650-foot takeoff and 1000-fpm climb surprises most pilots. Wide-track tricycle gear and trailing-link main gear make landings on ol' terra firma easy. The approach is best flown at 80 mph, with 70 over the fence, and 55-60 at touchdown. A little power has to be carried all the way through the approach and landing. The high thrust line gives you an "automatic" flare when power is reduced, which makes for very nice landings. The sponsons, gear wells, and engine give the airframe plenty of drag, which permits sensationally steep approaches and rapid deceleration, especially with the gear down. Brakes in the average Lake are nothing extraordinary.

### Water Handling

The Lake amphibian is very different from a floatplane on the water. Being a dyed-in-the-wool "float" guy, I didn't see the need for a significant amount of type-specific Lake training. A seaplane is a seaplane, right? Wrong. After my initial Lake checkout training wore off and I started to revert back to my old floatplane habits, things started getting hairy. After a few sinus-clearing incidents in which I more or less lost control of the aircraft during the water landing, I was feeling pretty defeated. Not to mention scared. I continued to fly the LA-4 from land, but just wasn't interested in doing water operations with

it anymore. Realizing it was kind of stupid to have a seaplane that I didn't want to put in the water, I finally found the sense to put my ego aside, and arranged for further Lake flight training. Apparently my floatplane habits were quite obvious to my instructor, so he provided me with a quick refresher course on the three basic rules for flying a Lake amphibian:

**First** - You put a Lake on the water one of only two ways. The most common method is the flat-attitude "keel" landing, and the other is a tail-first "full stall" landing. Never land a lake anywhere between a keel landing and a full stall. Anything in between will cause it to bounce.

**Second** - When in trouble (bounces and porpoising), pull the power and tail land (full stall) the airplane into the water. No throttle jockeying! If you think you can save it, apply half throttle gradually and stabilize the aircraft attitude. If that works, you can gradually apply full power and fly away. But never apply sudden full power when in a near-stall attitude close to the surface unless you want to reconfigure the shape of your airplane and get some submarine experience.

**Third** - Think about where the landing gear is and where it

should be. And do your thinking out loud at least 3 times prior to every landing. Downwind, base, and final is recommended, with one final check at 100 feet AGL (or AWL). And make sure you are verifying position visually as well, not just looking for lights. Recite the appropriate "This is a water landing and the gear is up" or "This is an airport landing and the gear is down" for every landing. A gear-up landing at an airport will only cause minimal damage to a Lake, but a gear-down landing in the water is almost certain to end in catastrophe.

Not to say these are the only things you need to know to fly a Lake, but they are probably the three most important things. It's obvious to me (now) that a Lake is too demanding and too unusual of an aircraft to ever try to learn on your own. That doesn't mean it is difficult to learn to fly a Lake. It simply means that Lake-specific training is essential.

I've been enjoying my LA-4 both on and off the water immensely ever since I pursued further training. I still have a very high respect for what a Lake can and can't do, but the more I learn about this aircraft, the more impressed I become. What would be a scary step turn in a floatplane is a non-event in a Lake. A skilled Lake pilot can take off in a 600-foot circle, or start a takeoff run downwind and then turn 180 degrees into the wind

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at the far end of the lake or river, all the while staying on the step and maintaining near-takeoff speed. If you suddenly realize you aren't going to clear the trees on shore because you are still on the water, a sharp skidding turn at the last minute will keep you clear of the oncoming shoreline. A floatplane would be prone to cartwheeling in the same maneuver.

As with most seaplanes, if you can get a Lake on the step, it will fly. My Lake has really impressed me with how quickly it gets on the step, even when near gross weight. Although the overall takeoff run is longer than your average floatplane, if you compare the length of the takeoff run to a comparably-priced 180-hp amphibian, such as an older Cessna, the Lake is very competitive. Further, that same Cessna probably has very little useful load. So often a Lake is berated for its performance off the water. But so often those who are critical don't stop to consider how much power those floatplanes, many of which aren't even amphibious, use to obtain that performance.

#### Pros and Cons

The first time you try to dock a Lake, you'll have wished you owned a floatplane instead. You can maneuver through the water to the dock with unbelievable precision compared to a floatplane, but what to do when you get there is a problem. Usually a head-on approach is the only real option, but that makes energy management critical, and the low-slung wings are always looking for things that will dent them. Beaching is the preferred moorage method, but it's not hard to put unsightly scratches in the bottom of the fuselage. Curiosity about the hull-shaped fuselage always draws onlookers' attention to the keel. I know it sounds petty, but I am continually doing touch-up painting on the keel area.

The Lake's landing gear comes in handy in the water. Making a grand entrance to a local seaplane event by driving out of the water onto the beach is really slick. Even if the beach is too narrow for that, you can still use your gear to hold your Lake in place in shallow water. You'll need to remember to grease things when you get home to



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Clambering around on a Lake during preflight will make you wish you were part monkey. Even though the upper fuselage and inboard wings are reinforced so you can walk on them, access to the rear of the engine and the propeller is still difficult. A step ladder behind the wing is useless on the LA-4 because the wing fillets (otherwise known as batwings) get in the way. Access to the rest of the aircraft is easier than a floatplane because it is often out of the water, and because it sits a lot lower both in and out of the water.

Whereas the average floatplane has to spend most of its life exposed to the elements, a Lake can be kept in a nice cozy hangar, thereby avoiding the risks that come from good ol' mother nature. That also makes things like maintenance and cleaning much easier. Something as simple as having the ability to take your seaplane to the local FBO maintenance & repair shop is a significant advantage.

The pusher prop can be a problem should a screw or rivet come loose and go through it. Heaven forbid anything larger. Even encounters with small objects can require pro-

peller blade replacements. The specially-built constant-speed propeller gets pricey. On the other hand, having the prop behind you improves efficiency, keeps cabin noise to a minimum, reduces gravel damage, and is much safer for you, your passengers, and bystanders. The adverse handling aspects of the high-thrust-line pusher prop are, for the most part, overstated. With proper training, thrust-related pitching is easily managed.

A lot of private airstrips can be hard on an aircraft undercarriage, but the Lake handles rough grass or gravel strips with ease. It has sufficient ground clearance, and the trailing-link landing gear is rugged and shock absorbing. I like to operate out of a lot of small, rough grass strips, and I just couldn't see an amphib float being able to absorb the same loads as Lake gear can.

I dislike the gas heater that is mounted on top of the cabin and looks like some sort of stretched-out oversized marshmallow. But heat from the engine exhaust will not convect downwards, so the heavy, expensive, maintenance-intensive gas heaters are a must. It is either very hot or very cold in the cabin, but then again, I don't like to fly when the water is hard anyway.

Visibility in the Lake is superb. Sitting in front of the wing and engine provides the best visibility one could ask for. The carbureted 180-hp Lycoming O-360 has an impressive track record for reliability and longevity, and is easy to start. The LA-4 does not share the LA-4-200's 2000-2350 RPM limitation, which gives the LA-4 a wider range of economy power settings.

### The Rest of the Breed

Comparing an LA-4/180 to a 200-hp Buccaneer is easy. The LA-4 is essentially the same airplane, but with a two-inch shorter prop, no fuel injection, and 20 fewer horsepower. The 180-hp Lake will do pretty much everything the Buccaneer will, with the exception of carrying as much weight. The LA-4/180 has a gross weight limit of 2400 pounds, compared to the Buccaneer's 2600-pound limit. But the average Buccaneer weighs at least 100 pounds more than the 180, so the effective increase in useful load is somewhere around 100 pounds, provided the Buccaneer isn't loaded up with a lot of extra equipment.

Considering both aircraft have the same wings, the 180 should be able to lift the same weight, but power makes the difference. Many 180 owners have discovered that if they install the longer Buccaneer prop on their 180, it will haul just as much. Some have even gone so far as to convert their 180's to the 200-hp engine and prop, which yields a light, high-performance Lake. Taking that to an extreme, some have updated their 180's to the last of the 200-hp breed, the EP (Extended Performance). That version moved the prop back 5 inches and closed in the rear of the engine cowling, providing the prop with less turbulent air and thereby improving performance. Many consider the EP to be the best all-around Lake amphibian.

The newest civilian Lake is the Renegade. It is so different from the LA-4 that it is hard to even compare the two. The most obvious difference is the 270-hp engine, three-blade prop, turbocharger, longer cabin and

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fuselage, reshaped engine cowl and vertical fin, and a deeper V-shaped hull for rough water operations. Perhaps the biggest difference between the two is the extra \$200,000 for a good used one. LA-4 pilots only dream about such things, so I'll save my evaluation of the Renegade for after I win the lottery.

### Would I do it again?

In a heartbeat! My only regret is not doing it sooner. A while back I gave myself the ultimate test: I scoured the ads in Trade-A-Plane thinking about what kind of airplane I'd rather have for the same money. End result was nothing else in the price range even interested me. When I see Cessna 172's selling for \$45,000, amphibious floats easily exceeding \$30,000, float-equipped Supercubs for \$85,000, and 185 amphibians for \$200,000 plus, the Lake looks pretty appealing. Dollar for dollar, I find the 180-hp Lake hard, if not impossible, to beat. □

### Additional Information:

- **Lake Amphibian Flyers Club**  
(863/635-3381, lakeflyer@jthink.net) – Outstanding newsletters. Take advantage of the option to purchase back issues.
- **Go to Hull by Steve Reep**  
(Available through SPA, 301/695-2083) – An excellent book designed to help entry level and experts alike in the care and operation of the Lake.
- **Aerofab, Inc.**  
(207/324-3916) – Aerofab is the Lake factory, providing parts and great customer service.
- **Team Lake**  
(603/524-5868) – Factory-direct new and refurbished pre-owned Lake amphibians.
- **Professional Shops**  
Amphibians Plus, Harry Shannon, Bartow, FL, 863/534-8025. Aircraft Innovation & Repair, Paul Furnee, Winter Haven, FL, 863/299-4655. Lake Central, Elton Townsend, Gravenhurst, Ontario, 705/687-4343.  
Each of these independent Lake specialty shops are true experts on modification and repair of Lake amphibians, and also offer the Lake flight training program.
- **Web Sites**  
Northern Aircraft (www.n-air.com),  
Lake Central (www.lakecentral.com),  
Lake (www.amphib.com),  
Team Lake (www.teamlake.com).

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