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Air Progress

JULY 1989 VOLUME 51, NUMBER 7

AIR PROGRESS

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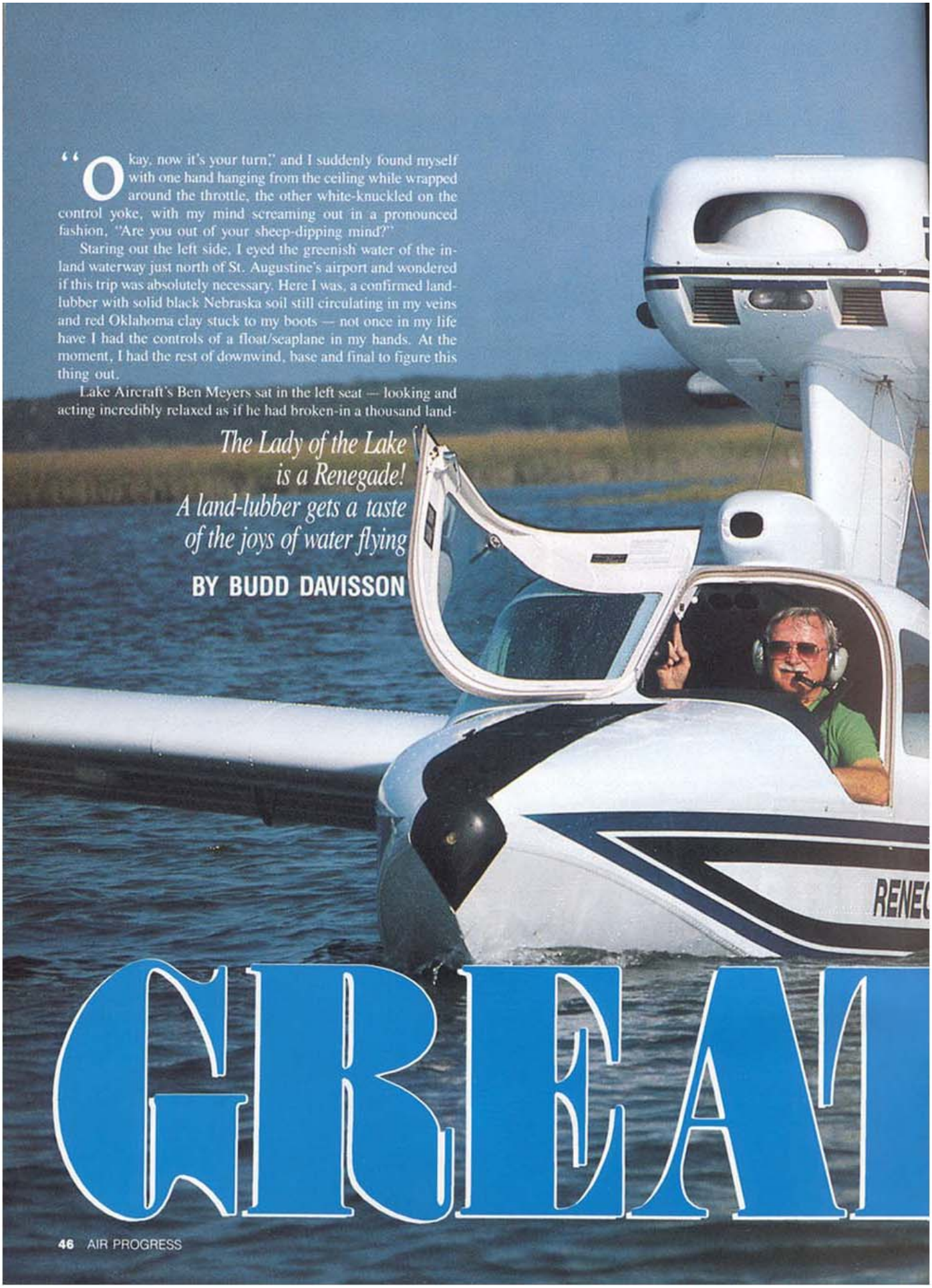

GREAT

The Lady of the Lake is a Renegade! A land-lubber gets a taste of the joys of water flying

BY BUDD DAVISSON

"Okay, now it's your turn," and I suddenly found myself with one hand hanging from the ceiling while wrapped around the throttle, the other white-knuckled on the control yoke, with my mind screaming out in a pronounced fashion, "Are you out of your sheep-dipping mind?"

Staring out the left side, I eyed the greenish water of the inland waterway just north of St. Augustine's airport and wondered if this trip was absolutely necessary. Here I was, a confirmed land-lubber with solid black Nebraska soil still circulating in my veins and red Oklahoma clay stuck to my boots — not once in my life have I had the controls of a float/seaplane in my hands. At the moment, I had the rest of downwind, base and final to figure this thing out.

Lake Aircraft's Ben Meyers sat in the left seat — looking and acting incredibly relaxed as if he had broken-in a thousand land-

PHOTOGRAPHY BY BUDD DAVISSON

lubbers in the past. And he had. His faith in himself, as an instructor, and in the Lake 270 Renegade, as an airplane, spilled over onto his nervous student and did a lot to soothe his fears.

I had come down to St. Augustine with the family to vacation, since the town, the beach and the food make for a fabulous way to keep the kids and the Newark Street Savage happy. It keeps them so happy, they seldom notice, or care, that I've disappeared to the airport for a few hours. What the beach is to families, the airport and Aero Sport Inc. are to pilots. The combination of factors makes for a well-rounded effort to straighten a family's head out.

As it happens, I called O'Leary (as in Editor O'Leary) from the hotel just to check in and he started lecturing about getting me in contact with Lake who was just down the road and how it would be a great photo opportunity, etc, etc. Somehow he had missed the word "vacation" in my introductory speech (Editor's Note: There are *no* vacations for aviation photojournalists). So, it was with a certain amount of sadness in my voice that I announced I had to miss a day at the beach (and thereby avoid the tension headache I always develop after an hour of being oiled and sanded) because I had work to do at the airport. Nobody looked up at the announcement. And nobody believed it.

IN THE AIR

LAKE

The Lady of the Lake is a Renegade!
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ARMAND RIVARD: KEEPING LAKE AFLOAT

Armand Rivard was, at one time, a land developer who flew. Then, in 1970, he bought a Lake amphibian. In a few years, he became a pilot who also developed land. In 1979, he was an airplane builder/pilot who didn't mess with real estate. That was when he bought Lake Aircraft and the manufacturing arm, Aero Fab, from Herb Linblad. Today, he is one of the very few airplane manufacturers in the country actually making money. And having fun, lots of it!

"I love this airplane," and he is as close to gushing as a professional businessman ever gets. "The Lake was designed to fly on water and is a damned good boat while doing a good job in the air, at the same time."

Like the electric shaver manufacturer, for him to buy the company after buying the product he must love it. He loves Lake for a lot of reasons besides liking to fly and enjoying the industry.

"When I was developing real estate," he said, "my kids didn't care about the business and were floating off on their own. Now this is a true family business and will stay that way."

He is referring to the fact that his son Bruce, 35, is running the New Hampshire facility while his daughter Cheryl, 32, heads the Renton, Washington, operation.

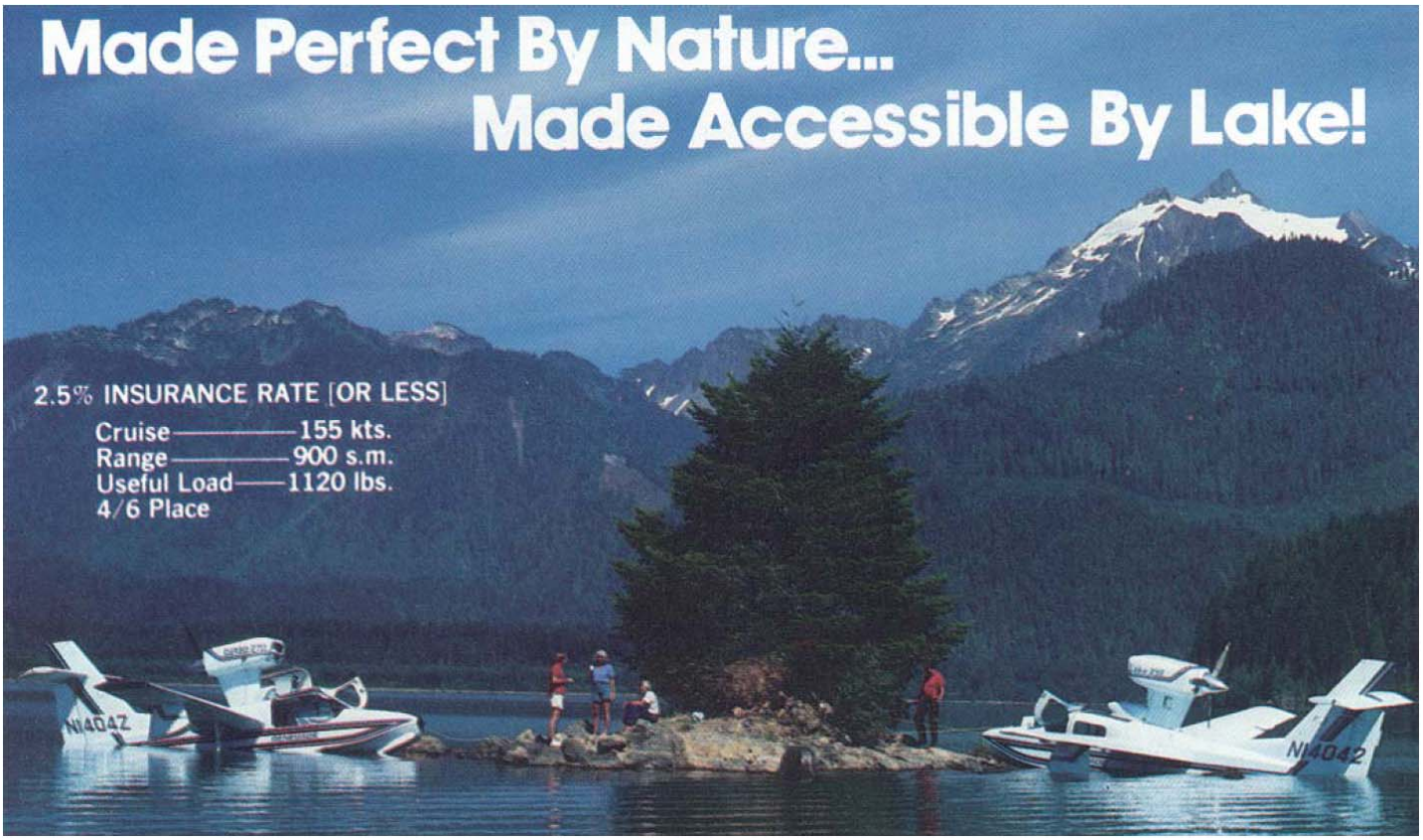
"The airplane brought us back together," making this sound as if it were his original business goal. It wasn't.

"I simply thought Lake was a great airplane and I wanted to be closer to craft and being a dealer wasn't going to fill the plan. So, I bought the company."

Being a successful businessman also meant this Lake to be a successful business which, according to Rivard, has included a reasonable amount of luck in addition to lots of hard work.

"I would like to say we sought out a market niche and filled it, but that's not the way it worked. We sell Lakes to businessmen who use the airplane in their commercial operations, but use the recreational aspect also and that is the reason they bought the plane. They needed the utility of a 155-knot airplane, but they also wanted the fun. We didn't invent that need, the need came looking for us and we were happy to be there."

Whatever the reasons for their success, it's nice to see a family business can still survive where the really big companies have failed.


Made Perfect By Nature...
Made Accessible By Lake!
2.5% INSURANCE RATE [OR LESS]
Cruise 155 kts.
Range 900 s.m.
Useful Load 1120 lbs.
4/6 Place
N1404Z
N14042


TURBO 270
N1404Y
RENEGADE
THE LAKE IS ENJOYING GOOD SALES BUT NEARLY 40 PERCENT OF THE PRODUCTION RUN IS BEING SHIPPED TO OVERSEAS CUSTOMERS.

The people down at Lake Aircraft, in Kissimmee, absolutely couldn't have been more cooperative or nicer. In fact, in my first conversation with Ben Meyers over the phone, his attitude had already convinced me this was going to be a positive experience. The fact I knew little about seaplanes and even less about Lakes didn't deter him a bit.

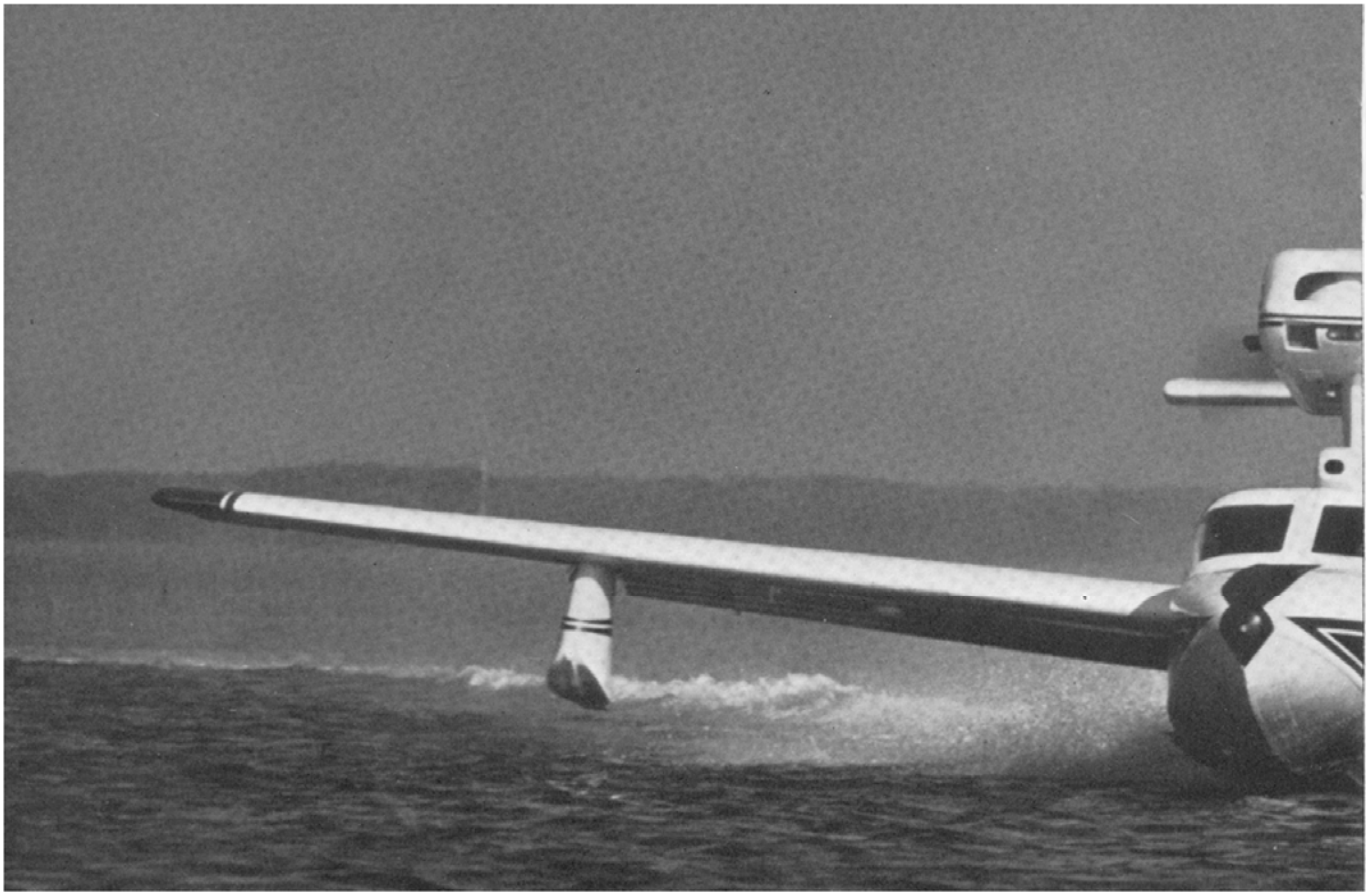
Actually, that's not entirely true, since I've been around Lakes in a very peripheral fashion for many years. Back in the late 1960s, when I was still working for a living as a tech rep, I would call on them periodically up in Sanford, Maine, where one of the original designers of the airplane, Herb Linblad, was busy building airframes in an old furniture factory in the middle of town. At the same time, at the Sanford Airport the other designer who shared credit for the origination of the Lake, Dave Thurston, was just as busy developing a new seaplane along the lines of the Lake called the Teal. The Teal was supposed to be a much cheaper amphibian designed for the two-place sport market. As if coincidences always come full circle, the short-lived manufacturing of the Teal took place across the road from Aero Sport in St. Augustine and they were assembled and test flown within 100 feet of where I got my first introduction to the Renegade.

The Lake is still being built in the furniture plant, but it has been modernized and expanded. The airframes are fabricated in town and then trucked out to the airport where they are assembled, painted and test flown. Sales do not take place at Sanford.

Sales are handled through three locations: Laconia, New Hampshire (603-524-5868), Renton, Washington (206-226-2100) and Kissimmee, Florida (407-847-9000). These centers handle a full range of support and flight instruction but, in all probability, it is the Kissimmee location that gets the most flight training action. Let's face the facts: The water in New Hampshire gets too hard for flight training part of the year and, even if it didn't, the Kissimmee operation offers many other good points. Mickey Mouse lives just up the road, ditto Shamu, MGM has a new operation, etc. It wouldn't take much imagination to consider the Lake flight training operation as being another of the attractions that have made Orlando/Kissimmee the vacation capital of the world.

The Lake is often thought of as being unorthodox in configuration since the engine placement gives the plane such an identifiable profile. The history of seaplanes/amphibians has always been dotted with almost identical outlines. From the very beginning of water flight, the problem of keeping the prop out of the water has been a puzzler for designers. Putting the prop on top, out of the spray and separate from the structure was the simplest method of design. The only other workable-water plane arrangements were the high-wing Grumman twins and the engine-behind-the back-seat arrangement of the SeaBee. Earl Dodge Osborne's (EDO) first airplane had the engine on a pylon while the same was true with the single engine Sikorskys and the Douglas Dolphin. The only thing unusual about the Lake's configuration is that the engine is a pusher which moves the prop a long way aft of the passenger compartment, thereby removing the negative effect the prop would have on passengers in an accident. The configuration also makes possible taxiing around with half the canopy open and your elbows up on the cockpit edge Chris Craft style.

The Lake 270 Renegade is the current status of a long, evolutionary process which, in this particular airplane's lineage, began with the Colonial Skimmer in the late 1940s. Linblad and Thurston tried unsuccessfully to talk their employer, Grumman, into building their design as an entry into the postwar aviation boom that didn't come. Convinced they had a good idea, they put together their own company and built the airplane as the Colonial Skimmer. The prototype first flew on 17 July 1948 as the model C-1. A 2/3 place airplane, it used the same 125-hp Lycoming 0-290 that barely got the original Tri-Pacer off the ground and must have been a real wheezer in the Skimmer. Original factory specs say



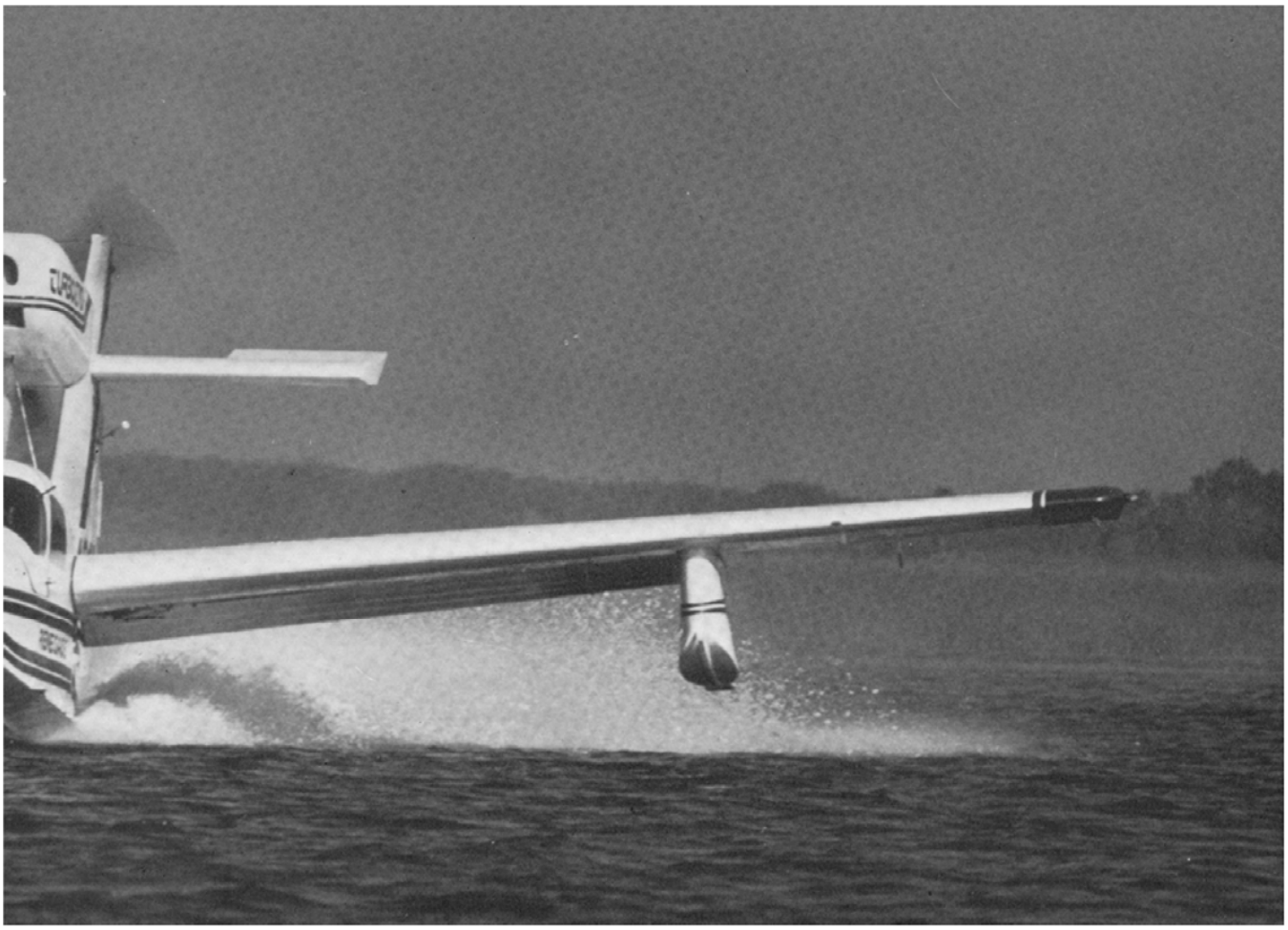
the airplane would max out at 155 mph, cruise at 125 mph and climb at 700 fpm. With a gross of nearly 2000 pounds that sounds more like ad agency fiction than actual performance, but since so few survive (27 were built) it is hard to disclaim the numbers. One fact remains irrefutable: Although 40 years old, there is absolutely no mistaking the Skimmer as the granddaddy of the Lake and only a very, very sharp eye is going to think the plane anything but an older model Lake.

Colonial went out of production in the early 1950s and the Lake came on the scene less than a decade later. This time the power gradually increased until 180 hp was standard, with the 200-hp Lycoming replacing that engine almost as soon as it became available. The standard Lake throughout the 1970s was the four-place, 200-hp Buccaneer that theoretically is still available as the 200EP. The operative word there is “theoretically”. With the 250-hp Renegade and then the 270-hp turbo Renegade available, the factory reports they’ve had no orders for the smaller airplanes in several years. If they got orders for three or four of the 200-hp model they would put the 200EP back on the line.

The bigger engines are on bigger airplanes, and Renegades are three feet longer and touted as six-place airplanes. That actually translates to mean they are marginal six-place airplanes with practically no baggage space (the back two seats are for smallish passengers) or good performing fourplace airplanes with lots of baggage space (the back two seats make excellent baggage space and are right on the CG). The definition of “good performing” takes some discussion.

Amphibians of all flavors, be they a Cessna 206 on EDOs or the Lake, are at the mercy of conflicting laws of physics. To work well in water demands these aircraft observe characteristics of that relatively incompressible medium which means the second they leave water they are shaped all wrong and can’t change that shape. This fact has been the main problem of all amphib/seaplane designers from day one. The laws of physics change for no man – not Jim Bede, Burt Rutan nor Dave Thurston.

The net result of all these aerodynamic compromises is a group



of airplanes that carry giant motors and sport cruise speeds usually associated with half that number of horses. The Renegade 270 is certainly one of the fastest, since it has a cruise of 155 knots. Some of that speed is attributable to the turbocharger which lets the plane get up high where the thin air doesn't notice being forced aside by a less than optimum shape. Up around 10,000 feet, horses count more than shapes.

WITH ITS POWER AND WING AREA, THE RENEGADE GETS OFF BOTH THE GROUND AND WATER IN A VERY CONVINCING MANNER.

The incompressible and unpredictable nature of water also raises its ugly head in the extra beef a seaplane carries around. Ignoring the fact that an airplane falls out of the air to hit the water at 70 mph, think about smashing across the waves at that speed. Anyone who has run a speedboat at that kind of speed knows about these kidney-bruising rides, especially if the water has any chop, and that is why the structure of the Lake owes much to boat technology. Until the Lake lifts off, it is a very fast boat that – even though it it getting lighter as it goes faster – is still getting its brains beat out. All the extra structure required for this operation translates into additional weight and costs. Add weight and the aerodynamic compromises together and the power-required curves start to go out of sight.

Not one bit of the above was going through my mind while turning final to the patch of green waves that were to be our touch-down point. I had listened to Ben's every word as he made the demonstration landings (two of them - one a full stall splash down), but was not prepared for what I saw. I had expected Ben to hold the airplane off until it gently settled into the wet stuff just above stall speed. Just the opposite was true. He held 80 knots down final and leveled off over the water, gently guiding the Lake down until kissing the waves in a nearly level attitude. At the time, I was impressed with the precision needed to fly the airplane to the water in

such a flat attitude and not induce a skip or bounce. Actually, I was more than impressed since I doubted my ability to duplicate the feat - which was why my heart was in my throat, while turning final.

One advantage to sitting so close to the water, is helping judge height while also putting the far bank several fingers over the instrument panel when skimming along on the step. As I came down over the near bank, I had to fight the urge to flair the airplane. I needed to be convinced I was setting up for a really low, highspeed pass and didn't want to burn off much speed in the level off. At Ben's suggestion, I kept on a reasonable amount of power and gradually bled speed off while gently feeling my way through the last 12 inches to the water.

Incidentally, at no time did the overhead throttle feel strange - a good thing since searching for the water was taking all available attention. Then, just as if I knew what I was doing, I spotted the far shore sliding into its assigned position and felt the keel skimming the very top of the water. Closing the throttle gently the airplane just as gently skimmed along, requiring only a minimal amount of attention. On this first one, I just let the plane run out and "displace" or settle into the water at which point control becomes much less positive and the water rudder is put down to help.

I was feeling pretty smug. Actually I was first feeling relieved, *then* feeling smug. I had visions of bouncing and porpoising all over the place, but the landing hadn't been all that bad. The takeoffs were even easier - first a little back stick, then letting the Lake plane until ready to fly. Yes sir, I was feeling smug. Then Ben demonstrated how, with proper trim, the airplane would literally take off on its own and would make a credible hands-off landing by just jockeying the throttle. No matter, I was still feeling pretty good.

Having recently edited the new version of EDO's how-to book *Float Flying* written by VP Jay Frey, I was mentally prepared for handling the airplane in the water with "upwind aileron is required, when" and scads of other lines required for safe float-plane operation. Then Ben started showing how the Lake handles. Actually, what he did was a good imitation of a Chris Craft trying to lose a skier. He would slam the power and suck the airplane around in impossibly tight turns, stopping on a dime when and where he wanted. When we were shooting pictures for the article, he would come roaring across in front of me on a takeoff run, yank into a bank while still on the water, make a tight (we're talking really tight) 90-degree turn (throwing salt spray all over my cameras) and then lift off. The Lake's ability to maneuver was truly incredible.

In the air the airplane handles and feels much better than I had expected. With the flaps out (they are either in or out, with nothing in between) we were very comfortable twisting around 200 feet above the countryside at 80 knots checking out possible landing places. As I was to later discover, the airplane gets on and off quite quickly courtesy of lots of ponies and wing area. This feature is as expected since the designers want the airplane up and out of the punishing water quickly. On land, those characteristics make the Lake almost STOL in nature.

Turning toward the runway at St. Augustine (the hard one), we once again chanted the amphibian litany: "Landing on land, landing gear down". On water it's "landing on water, landing gear up". With all its beef, putting a Lake on the pavement with the gear up would probably cause much more embarrassment than damage. Reverse the process and put it into the water with the gear out, and the Lake will do what every amphibian would do in the same position: Plant the pilot on his head so fast he wouldn’t have time to make the inevitable reference to bodily waste.

Reaching down to flick the trim now and then (it is a momentary hydraulic system, a concession to keeping the hull watertight by not running cables through it), the airplane settled on 75 knots and held the figure. This was where the airplane's aquatic nature was noticeable, since the Lake really wanted to come down and a few extra horses were needed to maintain glide slope.

In this situation - headed for the pavement - Ben seemed either less at ease or more doubtful of his student as he mentioned that the airplane was easier to land on water and did a better job wet than dry. I felt he was warning me about something. I flaired and held off and the Lake squeaked on as easily as if we had been out enjoying

the day in a Skyhawk. In reality, the plane seemed easier to land than most retractable singles because there was no engine to look around.

As an aside, not once did the high thrust-line make itself known. I'm certain if I had hammered the throttle hard one way or the other, like on a go-around, I might have noticed the so-called "power steer" problem. I would also have felt the effect of having the prop blowing right on an elevator with the big trim tab set for approach speeds. But in normal flying and smooth power changes, I had to remind myself that the engine wasn't where it was supposed to be.

Still, they are the only game in town when it comes to specially designed machines. The company has been operating in the black for a lot of years (which many companies can't claim) and last year moved about 35 airplanes, this year expecting to sell 45-48. With the death of the American dollar, foreign interests have discovered the airplane, with an amazing nearly 40 percent of production leaving the States.

Insurance companies aren't in love with floatplanes in general and amphibians in specific since these types can be easily broken and expensive to fix. Lake has been able to get their buyers insurance packages in the 2.9% category because of their required 25-hour training course. The usual insurance range is 6%/10%.

The various models of Lake amphibians have been written about many times and almost every time by someone with more experience than me. I shot a few landings, did some stalls, and generally messed around with the airplane. I was able to indulge in some aeronautical daydreaming and, in so doing, found I liked what I found - both in the airplane and in the whole water flying concept. This is not in-depth reporting - these are impressions on being introduced to a new airplane and a new concept at the same time. As such, all I can say is I had a hell of a lot of fun and didn't scare Ben Meyers more than a couple of times. And I now absolutely have to get my water rating!