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Stay Alive Buyer's Guide To Survival Gear

BY JAMES WYNBRANDT | PHOTOS BY JIM KOEPNICK

ADDING OOOMPH TO A MODEST AMPHIB

WIPAIRE MAKES FLOATS, AND NOW
ALSO REMAKES AIRPLANES



With the use of seaplanes climbing worldwide and the supply of available stalwarts like the Cessna 206 and the de Havilland Twin Otter shrinking, the marketplace has begun to respond to consumer demand. Look no farther than the Viking Twin Otter, the new version of the venerable Canadian original, for proof. But putting an airplane back into production is an expensive proposition, and in a time of finite resources, alternative solutions may be required—the kind of practical adaptation floatplane pilots can identify with. Take the Cessna 185, a highly sought-after platform for mounting on floats. No one's standing on the dock waiting for Cessna to put the model back into production, so Wipaيرة, manufacturer of the Wipline family of floats, has stepped into the void to create the Wipaيرة Boss 182.

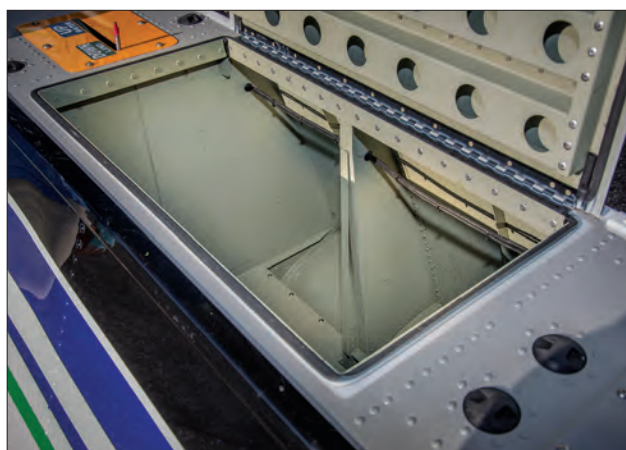
"It's a concept based on one fundamental principle—that we are running out of Cessna 185s," said Brian Addis, Wipaيرة's training instructor and maintenance and engineering check pilot. "We asked ourselves, 'What mods can we do to make [the 182]

behave as well as the 185 or better, and take advantage of fact there are so many 182s?' They are ubiquitous, comparatively speaking, to the 185."

On The Ramp

We were on the ramp in early March admiring N580WA, the first Boss 182, at Wipaيرة's new facility at Leesburg Municipal Airport (LEE) in Central Florida. "Cessna doesn't build 185s anymore, and there's nothing to replace them," said Addis, who had come down from the Wipaيرة headquarters in South St. Paul, Minn., to showcase the aircraft. "The 182 comes close, but the engine [Lycoming's 230-hp IO-540] is too underpowered."

The Wipaيرة facility was scheduled to have its public opening the following day, coinciding with a safety seminar the company organized for floatplane pilots, and its hangar was filled with long tables and scores of chairs. The event would also mark the debut of the Boss 182, and N580WA was to be the star attraction at the gathering.



From firewall to floats, the Boss 182 is out to change business as usual in the floatplane world.

The Boss 182's primary features are an upgraded powerplant, gross weight increases and an improved, laser-directed gear advisory system, all atop a pair of Wipline 3000 amphibious floats. The combination of powerplants and gross weight increases vary among some models, but the top-of-the-line enhancement is aimed at later models, the 182S and the 182T.

For these two models, the firewall-forward portion of the conversion is built around the 315-hp Lycoming IO-580-B1A engine mated with a Hartzell carbon-fiber HC-F3YR-1AN/NG8301-3 Trailblazer propeller, the most powerful new engine conversion available for the 182. (A natural composite MT propeller is also available, and other propeller options await certification.) The engine upgrade includes new heavy-duty engine mounts, new prop governor, a 90-amp alternator and a digital engine monitor. For extra oomph, the engine can be ported and polished to increase the maximum power to 340 hp. The company is acquiring 182s to convert on spec and will also provide conversions for current owners.

Weather in Leesburg was dreary, with the automated weather reporting visibility at 2.5 miles at one point, though the tower said it was actually three, allowing VFR operations to continue. The low ceilings and a smoky haze underscored another benefit of flying seaplanes: one rarely needs to climb above 1,000 agl or awl, so it's possible to operate the aircraft in conditions that might ground other VFR operations. Not that the Boss 182 can't handle soup. Options for upgrading the panel include Garmin 500 and 400 series

GPS WAAS avionics, as well as custom cabin entertainment systems.

In The Air

Starting and operating the Boss 182 on land is just like on any other high-wing Cessna piston single, except that you're sitting up a little higher. Keeping the engine at about 800 rpm while taxiing minimizes the P factor, making it easy to keep the aircraft tracking straight ahead. Gentle taps on individual brakes are all it takes to steer. However, you can just about spin a circle in place with aggressive, controlled use of power and braking.

Ten degrees of flaps are used for takeoff on land (20 degrees everywhere else), and with a rotation speed of 55 knots, the Boss is ready to fly before it feels like it is, and peels itself away from the earth. Accelerate to V_y of 80 knots, and the IO-580 boot-straps the Boss aloft at about 1,000 fpm at 3,500 pounds.

This isn't Wipaire's first foray into the engine cowl. The company also offers a an IO-550 engine upgrade for the Cessna 206, providing better performance, quieter operations, and up to 200 pounds in added gross weight, thanks to the engine's ability to deliver 300-plus horsepower continuously. (Wipaire also offers a variety of airframe mods, including for the 206, wingtip and door upgrades.)

We weren't going far—just to Lake Dora, some five nm miles east to sample the Boss's performance on water, and its new advisory system. If we were going on a cross-country, using the same 24 inches/2,400 rpm cruise power setting Addis prefers at a higher altitude, "you'll



The Lycoming IO-580 boosts the Boss 182's climb rate to over 1,000 fpm on Wipline 3000 amphib floats.



see 135 knots TAS all day long," he said.

After lining up with the wind streaks and thumping down on the lake, we pushed the throttle full forward, got up on the step, and in about eight seconds were in the air, much more sprightly performance by far than a stock 182 on floats. We could have carried a lot more gear with us, too, stowed just about wherever we wanted to put it, thanks to the gross weight increase choices the Boss offers.

The 182's stock airframe needs strengthening to support the gross weight increases. How much it's beefed up governs the amount of extra weight they can haul (all predicated on operations utilizing the Wipline 3000 floats). The gross weight increase to 3,500 pounds for takeoff (3,350 when landing) is available for the 182S and



“IT’S A CONCEPT BASED ON ONE FUNDAMENTAL PRINCIPLE—THAT WE ARE RUNNING OUT OF CESSNA 185s.”

182T equipped with the IO-580 conversion, and on 182Q and 182R models equipped with an AirPlains IO-550 conversion.

A gross weight increase to 3,370 pounds for takeoff and 3,350 for landing is available for the Cessna 182P, 182Q and 182R when equipped with the AirPlains IO-550 engine conversion, as well as for the 182S and 182T when equipped with the IO-580 conversion, and an increase to 3,250 for takeoff and 3,250 for landing is available for Q, R, S and T models with a four-point strut configuration. The major-

ity of Wipaire’s gross weight increases require installation of four-point float struts, but an increase to 3,250 pounds (3,100 for landing) is available for aircraft equipped with the three-point configuration. Conversion kits are available to upgrade the existing three-point strut configurations to the four-point design.

The conversion also gives operators more loading flexibility with its greatly improved forward CG envelope. No need anymore to add weight to the baggage compartment to keep the aircraft within

CG when carrying two people in front with full fuel, or four people with half tanks. The improved gear advisory system adds an additional level of comfort.

Wipaire developed the advisory system independently of the engine/airframe upgrade, but serendipitously, both projects were ready to bring to market at the same time, following about five years of work.

With a background in industrial psychology, Addis has some worthwhile insights into the benefits of the new, third-generation system. Second-generation systems use aural alerts as a reminder, saying, “Gear up for water landing,” and, “Gear down for runway landing,” based on airspeed and gear position. They didn’t distinguish what surface the aircraft was over. The new system



SPECIFICATIONS

Engine: 315 hp Lycoming IO-580

Propeller: Hartzell three-blade carbon-composite Trailblazer

Length: 29 ft. 6 in.

Wingspan (ft.): 36

Height, wheels down (ft.): 13

Height to wingtip, wheels down: 10 ft. 9 in.

Length, amphib float: 20 ft. 8 in.

Hull height: 2 ft. 5 in.

Hull width: 2 ft. 8 in.

Foot locker capacity (lbs.): 50

Main wheels: 6.00 x 6-8 ply

Nosewheels: 4.10 x 4.4 ply

Amphibian exchange weight (lbs.): 498

Seaplane exchange weight (lbs.): 296

Displacement on freshwater (lbs.): 3125

Gross weight (lbs.): 3500

PERFORMANCE AT 3,500 LBS.

Takeoff (land, ft.): 987

Takeoff over 50-ft. obstacle (land, ft.): 1836

Takeoff (water, ft.): 1257

Takeoff over 50-ft. obstacle (water, ft.): 2463

Rate of climb (fpm): 1048

Cruise speed: 124.5 KTAS @ 15.5 gph

“THE TRAINING PROCEDURE IS QUITE SIMPLE...IF IT SAYS SOMETHING IS WRONG, EXECUTE A GO-AROUND.”

offers “smart capabilities” with its laser.

It’s one thing to check the gear in an SEL—you want it down when you’re landing. But in an amphib, you could either want it down or up, depending on what you’re landing on, and the nagging annunciations can be tuned out by a busy or tired pilot. With the laser system, “The difference here is that it remains silent,” Addis said. “It doesn’t say anything unless something’s wrong.”

The brains behind the “smart” system is a laser capable of detecting whether the aircraft is over land or water—even if the water is dead calm. The laser is mounted under the wing, and ensuring the lens is clean is part of the preflight. The system is active whenever the aircraft is at or below 500 feet agl or awl. A small square display on the panel is illuminated when active, and the word “land” or “water” is shown, based on what’s below, instantly responding to terrain changes. Even passing over small ponds, the display changes from “land” to “water” and back again.

This means the system can compare

the surface below with the configuration of the landing gear. If configured properly, the system stays quiet. But if you’ve pulled back power for a landing, and the laser recognizes that you’re over water and the gear is down (or conversely your gear is up and you’re landing on asphalt), at 50 feet above the surface, it says, “Check gear,” indicating the malposition.

“The training procedure is quite simple,” Addis, who’s responsible for transitioning pilots stepping into the Boss 182, says. “If it says something is wrong, execute a go-around—it’s not a landing,” as Wipaire considers 50 feet of altitude insufficient to reconfigure the aircraft.

The laser system has an additional advisory function: Following a departure from land, Addis left the gear down as a preoccupied floatplane pilot might. Ninety seconds later, we got a, “Check gear,” aural alert. No ambiguity here about the situation or the corrective action needed. Wipaire hopes that insurance companies will eventually recognize the safety enhancement that the system pro-



Jessica Voruda



With a variety of IFR panel options, the Boss 182 is ready for work and play.



vides, and lower the insurance rates for equipped floatplanes.

Meanwhile, Wipaire is sourcing and converting 182s in anticipation of a waiting market, and has already sold three, according to aircraft sales representative Brittnie Brink, and the company appears to have hit their targets on both performance and price. Wipaire plans to convert five or six per year, each

requiring some five months of work. Boss 182s are priced at "around \$500,000 with a new panel, new paint, new interior, a big gross weight increase, new engine and new floats," Brink said. The cost varies based on the airframe, avionics and other options selected. "It might be \$500,000 and \$600,000," she said. "We're trying to make it affordable. That was our goal."

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