



WaterFlying

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WIPAIRE'S 182 IS THE BOSS

AIRVENTURE
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SEABEE



HERE COMES

THE BOSS

Wipaire one-ups the Cessna 182

**Story by Mark Twombly
Photos by Jim Koepnick,
courtesy Wipaire Inc.**

Wipaire's new Boss 182 amphib puts an exclamation point on two absolute truths in aviation. First, the 182 is a universally recognized gem in Cessna's lineup, a versatile, comfortable, reliable airplane with an understandably long production history. Second, there is no substitute for power;

the more the better. The Boss 182—let's just call it The Boss—embraces those two truths. Wipaire takes an already-good airframe, refurbishes it inside and out; beefs up the structure in strategic locations; boosts max gross takeoff weight; replaces the wheels with a set of Wipline 3000 amphibious floats; and re-powers with a big 315-hp Lycoming IO-580 motor that, with optional porting and polishing, churns out a healthy 340-plus horses. The result is a better-than-new, high-performing amphib that any seaplane pilot would be proud to splash around in.

I certainly was sitting proud when Wipaire demo pilot Brian Addis put me in the left seat of N580ZZ, a Cessna 182T originally manufactured in 2003 but recently transformed into Wipaire's latest example of The Boss.

It was the Monday following EAA's very successful AirVenture 2015, where The Boss had spent the week sharing the stage in Wipaire's display with a Caravan EX on Wipline 8750 amphib.

Shapely composite-construction Hartzell Trailblazer prop propels The Boss.



Addis had repositioned ZZ to the Basler East ramp at Wittman Regional for our flight, which began with a walkaround.

The Boss is quite the attractive seaplane with its sweeping, striking, glossy paint scheme complementing the 182's classic lines, and its tall and shapely

Wipline 3000 amphibious legs. At the heart of Wipaire's 182 modifications is a four-point float attachment kit. Instead of the previous configuration where the front float struts come together at a single point in the area of the nose gear assembly, Wipaire attaches the front

float struts near the lower corners of the firewall. This distributes loads to the new heavy-duty engine mount and beefed-up fuselage. (Along with several internal braces in the engine plenum, Wipaire installs a large skin doubler on each side of the fuselage in the area of the lower firewall).

In addition to lessening the load on the forward fuselage struts and adding strength to handle the airplane's extra 400 pounds of weight, the four-point attachment allows the center of gravity to move forward two inches. This solves a forward-CG problem with 182 amphibians that in some loading situations forces operators to carry ballast in the baggage area to stay within the airplane's allowable CG range.

Wipaire designed The Boss "to be the best-performing late-model piston Cessna without sacrificing power or useful load," explains Wipaire's Brittnie Brink. Wipaire President Chuck Wiplinger calls it "the cure for the common Skylane." The Boss also repre-

sents a more modern, roomier, more capable alternative to a popular, proven, but aging workhorse of the floatplane fleet—the Cessna 185, Addis adds.

"With the structural mods, big engine, and extra useful load you get a new, wider airframe that performs better than a 185. And the weight and floatation of the Wipline 3000s make them the perfect floats for the airplane."

DECIBELS TO SPARE

The burly Hartzell Trailblazer carbon-fiber prop, with its swept, scimitar-shaped blades and small-radius tips, is the only prop that Wipaire found could meet—with three decibels to spare—FAA noise requirements on the 3500-pound-gross Boss 182. Three decibels "may not sound like a lot," comments Wipaire CEO Bob Wiplinger, "but if you're sitting at the end of a lake when the plane goes over, it's tremendous!"

Hartzell markets the prop for back-

country flying, in part because it is optimized for maximum takeoff performance, but that emphasis, combined with its lower noise signature and water-damage-resistant design—the blades have a mesh erosion shield and field-replaceable nickel-cobalt leading edges—should make it good on the water as well.

N580ZZ has all the Boss mods including the 340-hp engine and the 3500-pound gross weight increase. It weighs in at 2,675 pounds empty, according to Addis, yielding a useful load of 825 pounds. With about 42 gallons in the 92-gallon-capacity tanks and 375 pounds of humanity aboard, we calculated our ramp weight at 3300 pounds, or 200 pounds under max gross.

After getting the three-blade, 82-inch-diameter Hartzell fan turning and setting up the panel, which features a Garmin GTN750 touch-screen GPS Navigator and EDM 730 electronic engine monitor with fuel computer, we called for taxi clearance and made our



Wipaire modifies the Boss 182 wing by adding longitudinal stiffeners between the ribs, internal bracing, and a pair of stall fences.



Later-model 182s are desirable because of factory corrosion-proofing, modern panel and avionics, the latest crashworthy seats, and better cabin ventilation.

way to Runway 27. Small dabs of power and differential braking were sufficient to keep the airplane moving around 90-degree turns to the right and left and the four wheels on the Wipline 3000 floats tracking the taxiway centerline.

For the takeoff Addis advised using a lot of back pressure to initially lift the bow of the floats off the runway surface, then some relaxation of the yoke once the airplane was flying. Flaps up, reduce power to 25 square, and maintain 80 knots indicated for an impressive 20-degrees-nose-high, 1,000-fpm sustained climb.

At 2,000 feet MSL we leveled off, briefly cruised at about 120 KIAS, and flew north to check out nearby Lake Butte des Morts. It was an early, windless morning and the lake water was mirror smooth. Addis talked me through a glassy water approach and landing to the east: prior to the last visual reference flaps 20, speed 65, 100 fpm descent. As we approached the water he had me slowly add a bit of back pressure on the yoke. The stall warning began to blare, but Addis said to keep everything as is.

Sure enough the airplane glided onto the surface of the lake like the floats were on trailing-link mounts.

After idle-taxiing to position the airplane for takeoff, Addis pointed out a spit of land jutting into the lake and estimated it to be 1500 feet distant. That would be our yardstick for the takeoff run. Flaps 20, water rudders up, yoke back, throttle to full power. The Boss reared up on the first rise, then quickly on the second. I relaxed back pressure and felt for the step. We ran along briefly on plane, and before I could raise one float to halve the surface tension the airplane lifted off, well before reaching the 1500-foot mark.

SMOOTH SPLASHDOWN

Next we headed east for a few miles and the broad expanse of Lake Winnebago. There the water was completely different than at Lake Butte des Morts, with wind streaks stretching northeast to southwest, and ripples and swells on the surface. We flew a downwind to the southwest with flaps 10, timed our turn to avoid touching

down near scattered boats, flew the base at 80 knots, and selected flaps 20 turning final approach. Flare, back pressure, hold a bit of power, more back pressure, ignore the stall warning, more back pressure, and once again The Boss rewards the pronounced nose-high attitude with a smooth splashdown.

I added power to stay on the step, turned back to the south and then back again into the wind for takeoff. Almost as soon as I pushed the throttle in we had flying speed.

On the return to Wittman Addis said to use the same technique for a land landing—flare relatively high, hold some power and bleed off speed and altitude until the stall warning sounds. Apply a bit more more back pressure, and fly it on to the runway. The brakes were effective in slowing The Boss to make the next turnoff, and after sorting through the after-landing tasks we taxied back to the ramp.

N580ZZ is The Boss at its best and most capable. It begins with the late-model 182 airframe, which features full factory applied internal corrosion-

Boss 182 Specifications

IO-580 @ 3,500 lbs.

Engine

IO-580 315 hp,
optional 340 hp

Takeoff run (land)

987 ft/301 m

Takeoff run over 50-ft obstacle (land)

1,836 ft/560 m

Takeoff run (water)

1,257 ft

Takeoff run over 50-ft obstacle (water)

2,463 ft/751 m

Rate of climb

1,048 fpm/319 mpm

Cruise speed/fuel consumption

(75 pct power @ 6,000 ft)

124.5 KTAS/15.5 gph

Gross weight

3,500 lbs/1,587 kg

IO-580 @ 3,370 lbs

Engine

IO-580 315 hp,
optional 340 hp

Takeoff run (land)

867 ft/264 m

Takeoff run over 50-ft obstacle (land)

1,602 ft/488 m

Takeoff run (water)

1,124/343 m

Takeoff run over 50-ft obstacle (water)

2,199/671 m

Rate of climb

1,123 fpm/342 mpm

Cruise speed/fuel consumption

(75 pct power @ 6,000 ft)

124.5 KTAS/15.5 gph

Gross weight

3,370 lbs/1,528 kg

**At the heart
of The Boss
modifications
on ZZ is a four-
point float
attachment
kit.**



Touch-screen GPS flight-management system, electronic engine display, and digital autopilot make for a fully capable seaplane.

JESSICA VORUDA



Boss mods eliminate forward center-of-gravity problem affecting 182 floatplanes.

proofing using epoxy-based primer; a contemporary panel layout with modern instruments and avionics; FAR Part 23 crashworthy seats; Cessna's latest take on fresh-air vents (lots of them), and a wet wing. The full roster of Wipaire-installed Boss 182 mods includes:

- Heavy-duty engine mount
- Lycoming IO-580-B1A engine (315 hp stock, up to 340 hp with optional porting and polishing)
- Hartzell HC-F3YR-1AN/NG8301-3 Trailblazer propeller w/ spinner
- MVP-50 digital engine monitor
- New prop governor
- 90-amp alternator
- New engine hoses and lines, new high-flow tuned exhaust, new vacuum manifold, and all-new engine control cables
- Longitudinal stiffeners on the upper wing surface and internal wing bracing, plus a stall fence on each upper wing
- Larger-chord rudder for better directional control on crosswind takeoffs on the water
- Ventral fin for in-flight directional stability
- Wipline 3000 amphibious floats
- Gross weight increase to 3,500 pounds for takeoff, and 3,350 for landing

EARLIER-MODEL MODS

Only the late-model 182S and T can accept the IO-580, and the heavy-duty engine mount is required when the airplane is on floats. The 182Q and R models are eligible for the 3,500-pound max gross takeoff weight/3,350-pound max landing weight increase and CG extension when fitted with Wipline 3000 floats, the AirPlanes IO-550 engine, and the heavy-duty engine mount. Both gross-weight-increase options call for the four-point strut attachment for the Wipline 3000 floats. Wipaire can provide a kit to upgrade a three-point strut system to a four point.

A less-expensive gross weight increase—and CG extension—to 3,370 pounds for takeoff and 3,350 for landing is available for the S- and T-model 182 when fitted with the IO-580, and for the Q, R, and P models when fitted with an AirPlanes IO-550 and Wipaire 3000 floats. The cost savings comes from not having to install the wing reinforcements.



Extensive airframe modifications include fuselage skin doublers in the area where forward float struts attach.

ZZ had Wipaire's new laser gear advisory system that can distinguish between a hard surface and water, and alert the pilot if the gear configuration is incorrectly positioned for the landing surface it detects. However, the FAA still had some final testing to do on the system so it was disabled for our flight. We'll report on the gear-alert system in an upcoming issue.

Wipaire also is testing Wing-X STOL wingtip extensions for the Boss 182. The extensions add three feet to wingspan and 12.4 square feet to wing area. Manufacturer Air Research Technology Inc. of Montreal claims the wingtip extensions improve performance throughout the flight envelope.

The Boss looks and is big and tall but performs like a smaller, more nimble floatplane on takeoff and climb. The gross weight increase to 3,500 pounds allows for two to four people on board depending on fuel load, with no compromising CG limitation or need for ballast.

Inside it's new and comfortable with leather-upholstered seats and sheepskin covers for the crew, a capable ADS-B-compliant IFR panel, King KAP 140 autopilot with altitude preselect, and XM Satellite Nexrad weather. It's a beautiful, capable, roomy, better-than-new option for splashing around proud.

Mark Twombly is editor of Water Flying.



The Boss 182 rides on Wipline 3000 amphibious floats.



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