

FLIGHT REVIEW



WHISPER X350 GEN II



Fast, sleek cruiser from motorglider origins.

BY LEROY COOK



(Left) The demonstrator was nicely upholstered with red and black leather. The center stick frees up space, but dual sticks are also available. (Right) There's plenty of room for avionics on the panel. The demonstrator is equipped with MGL Avionics PFD and MFD displays.

The Whisper motorglider from South Africa, designed by Russell Phillips in 2004, served admirably in its intended role as a long-winged self-launching soaring aircraft boosted aloft by an 80-hp Jabiru, Limbach or Rotax engine. But with over 30 Whispers flying, there was obviously a potential for more capability in the sleek little composite cruiser. Exchanging the extended 52.5-foot wings for a mere 122 square feet of wing area, shortening the overall length, and installing a four-cylinder Lycoming of 160 to 200 hp has created the Whisper X350 Generation II, the “350” signifying a design top speed target of 350 kph, roughly 190 knots.

Christiaan van Zyl and his sons purchased the Whisper Gen II design in 2015 and are actively pursuing sales opportunities worldwide. Can a kit aircraft from South Africa find acceptance in the North American market? U.S. dealers Ozark Mountain Aviation in Ozark, Missouri, and Craft Aviation in Greenville, Wisconsin, certainly think so. In speaking with John Hayes at Craft Aviation, located near Appleton, north of Oshkosh, we learned that he plans to be a stocking dealer, keeping two kits on hand for immediate delivery.

To check out this latest offering from overseas, we stopped in to visit Delbert Sinor at Ozark Mountain Aviation, after spotting the gleaming X350 demo ship at AirVenture. He operates a full-service maintenance facility at a fly-in community's restricted private airport, just south of Springfield, Missouri.

Sinor was ready and willing to give us a sample flight in N181WA, the first X350 Gen II in the U.S.

It Just Whispers, “I’m Fast”

The Whisper is a sharp-looking side-by-side two-seater, particularly when perched on tailwheel landing gear. Tricycle gear will probably be a popular option, out of necessity for tamer handling and greater tolerance of gusty winds. The kit can be built up in either configuration, using heavy composite reinforcement around the steel mountings for the main gear legs, which are attached to the fuselage instead of the wing.

Primary construction is of carbon fiber composite, with E-glass used for non-structural items like the cowl, fairings, and wing and tail tips. The fuselage, molded in upper and lower sections, is furnished as a fully joined assembly, complete with vertical fin, rather than as two halves requiring gluing together. A reinforcing bulkhead is installed aft of the cockpit area.

Similarly, the wing assemblies in the kit come fully closed. As expected from its motorglider origins, the X350's wings and horizontal tail are removable for trailer transport, with the attachments accessed through openings in



The articulated lift-up canopy swings fully aft over the turtle deck to give unrestricted access from either wing walk.

WHISPER AIRCRAFT WHISPER X350 GEN II

Quickbuild kit price	\$55,000
Estimated completed price (IFR)	\$119,990
Estimated build time	500 hours
..... (plus avionics installation and finishing)	
Powerplant	Lycoming O-360, 180 hp
Propeller	WhirlWind 2-blade, ground-adjustable
Powerplant options.....	ULPower 520iS, 200 hp

AIRFRAME

Wingspan	26 ft 2 in
Wing loading	17.67 lb/sq ft
Fuel capacity.....	63 gal
Maximum gross weight.....	2138 lb
Typical empty weight.....	1213 lb
Typical useful load	925 lb
Full-fuel payload	547 lb
Seating capacity	2
Cabin width.....	47.2 in

PERFORMANCE

Cruise speed	176 kt (80% power)
.....	152 kt (55% power)
Maximum rate of climb	1540 fpm
Maximum operating altitude	25,550 ft
Stall speed (landing configuration)	52 kt
Takeoff distance.....	.984 ft
Landing distance.....	.984 ft

Specifications and pricing provided by the manufacturer.

the leading edges, although these features aren't likely to be used regularly in sport flying. Wing dihedral is 3 degrees. The electric flaps extend to 45 degrees and are of generous span, extending under the wing root fairing. Aileron span is somewhat shorter than that of



The Lycoming O-320 is fitted with Superior Millennium cylinders. A sleek plenum is used for cooling instead of a baffle system.

the accompanying flap; up-swept wing tips add a classy look, and perhaps a bit of winglet effect. Compact LED navigation light and strobe clusters are on each wing tip, incorporating the white tail light coverage as well.

The 60-hour fresh demonstration prototype had all of its 32-gallon fuel supply in the fuselage; a 22-gallon header tank forward of the instrument panel provided a continuous supply for the engine, while 10 additional gallons were contained under the cockpit floorboards, pumped into the header tank after it was half empty. Sinor said this setup will be replaced in production kits with a wet-wing system, for a total of 63 gallons, greatly increasing foot room under the panel. The

header tank will be optional. The new carbon fiber wing has been loaded to 12 G's positive; overall, the Whisper has a design load factor limit of 6 G's positive and 4 G's negative, although it is not intended for aerobatics.

The steel main landing gear legs, along with their 5.00x5 wheels and braking system, are supplied by Grove. The full-swivel solid-rubber Aviation Products tailwheel is steerable. Access doors on the close-fitted main wheel fairings allow air to be added to a tire without disassembling the fairing. The horizontal tail is a low cruciform design of generous span, mounted well above the wake from extended wing flaps, and the rudder has a sizable amount of area for adequate control. No adjustable elevator trim tab was installed on N181WA, nor did we miss it during our short test hop, but Sinor said a trim system was being considered for future kits, probably to be electrically actuated. The ailerons are moved by pushrods, while the elevator routing is a combination of pushrod linkage into the tailcone and cables to complete the circuit. The rudder is cable driven.

An articulated lift-up canopy swings fully aft over the turtle deck to give unrestricted access from either wing walk. When lowered in place, it appears to be joined to a fixed windshield with a bow structure, but the assembly is actually a one-piece bubble, using simple wrap-around windshield glazings in front with curved side pieces installed aft. The canopy's reinforcing bow did not



A two-blade composite WhirlWind ground-adjustable propeller provides the appropriate thrust.



The electric flaps extend to 45 degrees and are of generous span, extending under the wing root fairing.

impinge on our view of the runway, we found. With the canopy open, removable glareshield panels can give working room to reach the back of the avionics and instruments.

Up forward, the upper cowling removes quickly with screwdriver-actuated cam-locking fasteners, allowing wide-open access to the Lycoming O-320 four-cylinder engine, fitted with Superior Millennium cylinders. A sleek plenum is fitted atop the engine instead of relying on a baffle system. The sealed 12-volt battery is mounted on the firewall. While designed to accommodate engines up to 200 hp, the Whisper performs well on 150–160 hp. A two-blade composite WhirlWind ground-adjustable propeller provides the appropriate thrust. Twin NACA inlets on the forward fuselage feed vents in the sun-drenched cockpit.

Mounting Up for Flight

The four-foot wide interior was nicely upholstered in a red and black leather motif, an available option for builders in place of a vinyl interior offering. Use of a center stick frees up space for slipping into the semi-supine seats, fitted with four-way restraint harnesses. If one prefers conventional dual sticks, they are available as an optional feature, Sinor says. Due to the demonstrator's under-floor fuel tank, the cockpit floor was quite flat forward of the seats, and I had a little trouble getting my number-twelve brogans situated on the rudder pedals.

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(Left) The one-piece vertical fin is molded into the upper section of the fuselage. The cruciform horizontal tail is mounted well above the wake from extended wing flaps. (Right) The elevator trim tabs on N181WA were fixed, but adjustable electric trim is being considered for future kits.

There was no concern about inadvertently actuating the toe brakes since they weren't installed on the right side.

Boost pump and mags on, Sinor had the O-320 fired up in short order, and

What's In the Box

At the time of our evaluation, the Whisper X350 Gen II was awaiting final FAA approval of its "51% rule" application, but from what we can see of the bits provided, there should be no problem with a builder having done the majority of the construction. Delbert Sinor estimates a build time of about 500 hours to be ready to taxi. Included are all composite parts, all hardware, control assemblies, and the Grove landing gear components. Available options are tinted canopy panels, leading-edge landing lights, a custom leather interior, dual stick controls, and a ballistic parachute system.

Excluded from the basic airframe kit are the engine, propeller, avionics, and interior furnishings, along with paint. However, we were shown a price list of just under \$120,000 for an inclusive kit, which contained goodies like a Lycoming Y10-360-M1B 180-hp fuel-injected engine, a two-blade WhirlWind GA200L ground-adjustable prop, most engine accessories, Dynon avionics, and lights.

—L.C.

the canopy was lowered for taxiing by tugging on a dangling strap provided for just that purpose. There's no plan to fit a sliding canopy. Ground visibility is excellent, thanks to the low glareshield and cowling. The tailwheel carries considerable weight, so steering appeared to be quick and positive, even with the center stick in neutral.

The MGL Avionics PFD and MFD displays had everything we needed for VFR flight, and even IFR control would be simplified with the synthetic terrain and attitude cues. Sinor indicated that Dynon SkyView HDX displays would be furnished in Whisper's all-inclusive kits for builders not wishing

to install their own choice of avionics. Pre-takeoff checks weren't onerous, just the usual confirmation of engine, controls, fuel, and belts. It is vital to latch both sides of the canopy with the over-center handles provided because if left unsecured, it would begin to lift as soon as airspeed built up on the takeoff roll, requiring an abort.

Ground roll specs call for 300 meters, just under 1000 feet, and we were off and climbing well before that, with the aid of a 10-knot quartering wind on Sinor's 3000-foot home runway. Using 85 knots for a climb speed, we averaged over 800 fpm at 2250 rpm in the ascent to 3000 feet msl. Sinor



was eager to demonstrate the Whisper's speedy cruise, so the power was left up as we leveled off, and the IAS rose to 153 knots, pulling 2600 rpm, a true airspeed of just over 160 knots. The X350's design target of "350 kilometers per hour" top speed appears to be attainable with a bigger engine like an IO-390 providing the push.

A more reasonable cruise rpm of 2400 yielded an IAS of 142 knots, which is quite adequate. At full speed, we found the aileron forces to be fairly stiff as would be expected, lightening up as speed came down for the traffic pattern. The elevators were not overly sensitive, just a good match for the ailerons, and rudder control was quick and positive. The pitch stability was somewhat neutral, in that we didn't find the Whisper eager to drop its nose after pulling up and reducing speed; it was content to remain in the new attitude until we returned it to level flight. No attempt was made to check stall characteristics.

Whoa, Li'l' Whisper

Descending back to home base, the sleek Whisper needed near-idle power to bleed off speed so we could reach the downwind-leg goal of 80 knots in the traffic pattern. To assist, the 10-degree flap limit speed is pegged at 120 knots, with full flaps allowed below 87 knots. Sinor added full flaps on base leg, slowing to 75 knots, and established a 70-knot short-final speed. The touchdown came at 50 knots; meeting the 984-foot landing roll specification would simply be a matter of using appropriate braking.

There's a lot to like about the Whisper X350 Gen II: its sleek looks, the blazing cruise speed, a roomy cockpit, and an apparent ease of assembly. To get his customers started right, Sinor plans to offer two weeks or more of builder assistance at his Ozark Mountain Aviation hangar. From my brief sampling, I'd like to see a little more cockpit ventilation, more foot room after the wing fuel system is installed, and enhanced stability with an elevator trim system. I'd also like to revisit it with tricycle gear. There's a lot of potential in the Whisper design. ✈

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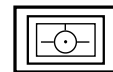


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