

TURBINE AFTERMARKET PERFORMANCE UPGRADES
SANDEL AVILON FLIGHT REPORT / BOEING'S SUPERSONIC BET WITH AERION

FLYING



WE
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THRUSH 510G SWITCHBACK

AGILITY AND PINPOINT ACCURACY MAKE IT A POTENT WEAPON AGAINST WILDFIRES



SINCE 1927
APRIL 2019

SOLOY BONANZA

Before single-engine turboprops such as the Pilatus PC-12, Piper M600 and TBM became the rage for owner-operators, turbine-powered airplanes often evolved from converted piston-powered machines. Soloy Aviation Solutions' conversion of the Beech A36 Bonanza replaces the original 300 hp Continental IO-550 with a Rolls-Royce M250-B17F/2 producing 450 shp flat rated (380 shp actual) for takeoff. The new power plant and its reversible-pitch prop considerably shorten the takeoff ground run and deliver a spectacular, nearly 2,000 fpm rate of climb. The Rolls-Royce engine will carry takeoff power to about 14,500 feet.

The converted A36 is easy to spot on the ramp because the power plant switch demanded mounting the much lighter turbine power plant farther forward to balance the airplane. The original Continental weighs 430 pounds versus 195 pounds for the Rolls Royce. Inside the elongated nose is an additional baggage compartment good for 120 pounds. This aircraft — N847DD — is also equipped with a TKS anti-ice system and air conditioning.

The switch to a turbine engine means a few changes in the cockpit too. For instance, the airspeed indicator no longer carries a yellow arc. In its place is a barber pole limiting the redline airspeed to 167 kias and replacing the original redline of 205 kias. That translates into either a pretty steep climb angle after takeoff, or pulling the power back to keep the speed within limits. The Soloy Bonanza also sports a single-lever power control, eliminating the propeller lever. This A36 also will maintain jet speeds to the outer marker if needed, without fear of shock cooling when decelerating to final approach speed.

The Soloy A36 is a speed demon. The day I flew it, we climbed VFR to 12,500 feet in about eight minutes. With the power lever pulled back to maintain 167 kias the true airspeed climbed to just over 200 knots while burning about 27 gallons of jet-A per hour at altitude. The A36's only drawback is that unless the original airplane was equipped with oxygen, the pilot might need to bring along a portable unit. On the descent, with power at flight idle, the airplane drops like a rock while remaining stable and balanced. Without pressurization though, that change could prove too much for many passengers' ears, which might call for a more shallow rate of descent.

Duncan Aviation's Dave Coleman, my ace copilot for the flight, said two wingtip tanks add 40 usable gallons to the Bonanza's original 74 usable, giving the aircraft at least three hours and 15 minutes of flying time with reserves. He estimates the hourly cost at between \$350-\$400. Coleman thinks there are about 100 Soloy Bonanzas flying around the globe.



THE PROPELLER CONTROL OF THE SOLOY BONANZA IS REPLACED BY A SINGLE POWER LEVER, MAKING ENGINE OPERATION MORE JET LIKE.

N847DD'S OWNER REPLACED THE ORIGINAL HARTZELL THREE-BLADE METAL PROPELLER WITH A FIVE-BLADE MT-COMPOSITE PROPELLER.