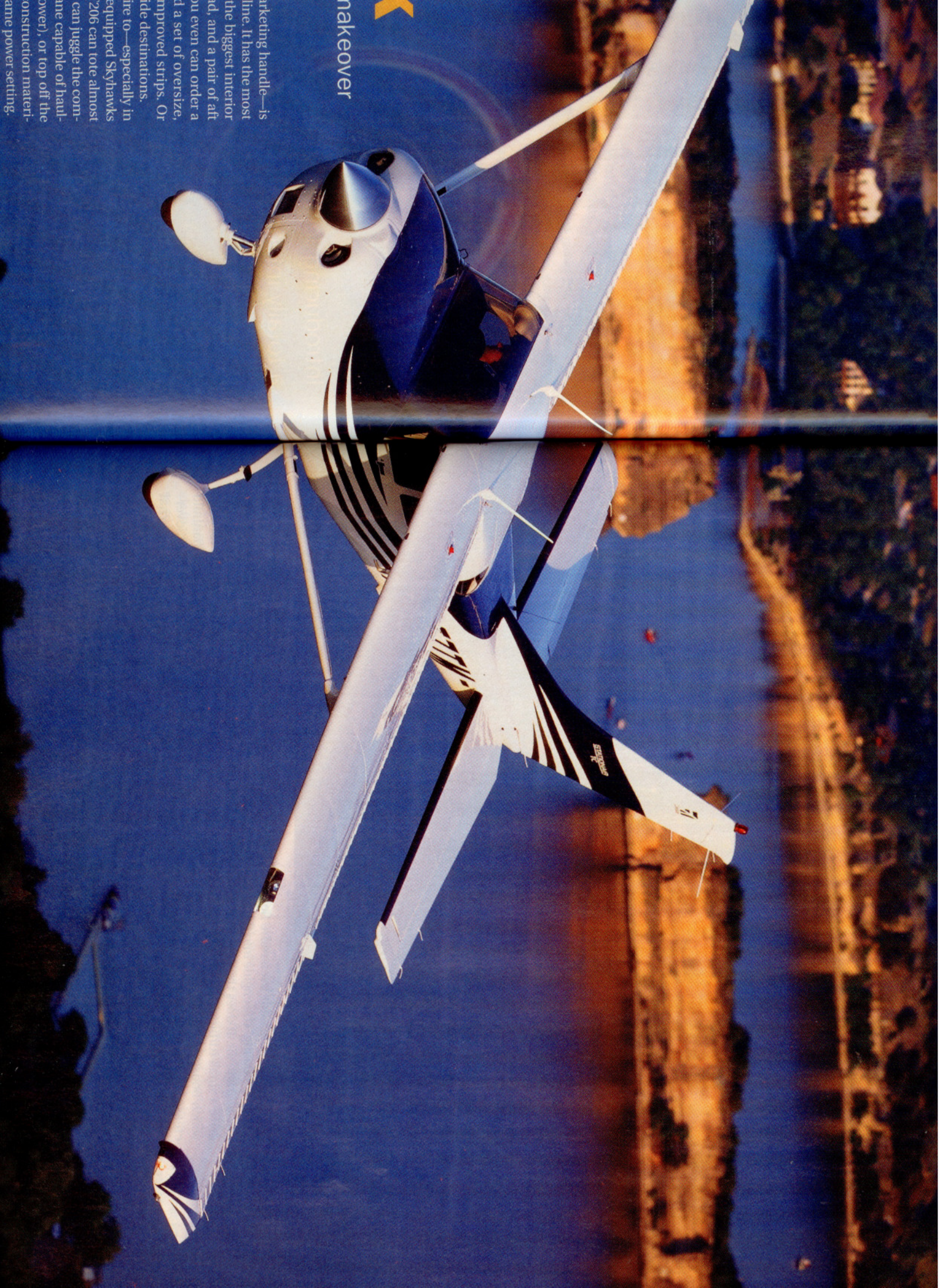


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Cessna Turbo 206

Panel truck

A utility hauler gets a front-office makeover

BY THOMAS A. HORNE

Cessna's model T206H—or Turbo Stationair, to use its marketing handle—is at the top of the company's current single-engine piston line. It has the most powerful engine (a 310-horsepower Lycoming IO-540), the biggest interior and exterior dimensions, the most seats, the highest useful load, and a pair of aft doors that lets you load all manner of passengers and cargo. You even can order a 300-pound-capacity cargo belly pod (a \$10,000 option) and a set of oversize, macho tundra tires (\$3,100) for extra load hauling out of unimproved strips. Or maybe you want a set of floats (\$3,700) for dropping in on lakeside destinations.

In short, the T206 is everything that lesser Cessna singles aspire to—especially in the full-fuel payload department. For example, where typically equipped Skyhawks might post full-fuel-payloads around the 550-pound mark, the T206 can tote almost 800 pounds. This gives the Stationairs their famed versatility. You can juggle the combination of passengers/cargo and fuel to come up with an airplane capable of hauling six 200-pounders some 350 nautical miles (at 75-percent power), or top off the tanks, take out the seats, and fly 800 pounds' worth of salmon, construction materials, camping gear, or what have you for about 550 nm using the same power setting.

PHOTOGRAPHY BY MIKE FIZER



Turbocharging adds even more flexibility. Turbocharging works by “fooling” the engine into thinking it’s flying in denser, low-altitude air. It does this by using the engine’s exhaust to drive a small turbine. The turbine compresses the intake air, which boosts manifold pressures to compensate for any increases in density altitude caused by hot-and-high operations. In the case of the T206, maximum allowable manifold

While turbocharging is no novelty in the 206, its latest avionics suite has certainly made a big, big splash.

pressure is 39 inches of mercury—and the airplane can keep on producing that high level of manifold pressure—and its full 310 horsepower—at altitudes up to 17,000 feet.

This kind of manifold pressure also lets you cruise at altitudes as high as 24,000 feet. That’s plenty high enough to comply with the loftiest minimum en route altitude restrictions. For those wanting to fly in or near the Rockies, Alaska, or any other mountainous region the safety advantage is obvious. And yes, a built-in oxygen system is standard equipment in the T206’s \$482,100 base price.

Pilots new to turbocharging will discover that there are a few new memory items when it comes to engine operation. For one thing, you don’t want to be ham-fisted when it

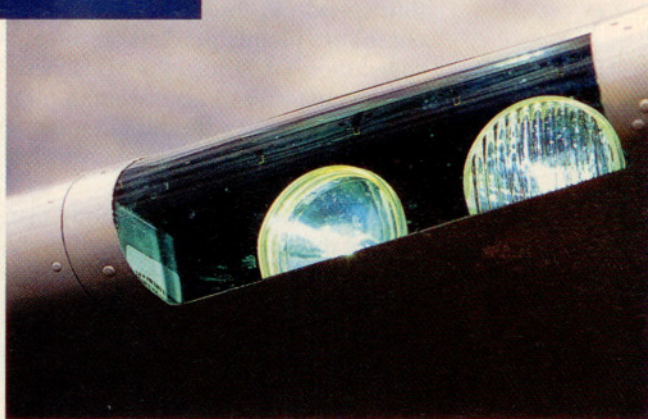
comes to applying power. Though there’s an automatic wastegate to prevent overboosting past internal pressure limits, shove the throttle forward too quickly and you can send manifold pressure over the 39-inch limit, overboost the engine, and cause internal damage.

Heat causes other concerns. That spinning turbocharger—and the highly compressed engine intake air it makes—creates tremendous amounts of heat, so you have to keep an eye on the turbine inlet temperature (TIT) gauge—and your hand on the throttle—to make sure you don’t exceed its 1,675-degree Fahrenheit redline. Also, manifold pressure and fuel flow can fluctuate at altitude, when the turbo’s wastegate is closed and the engine is making its maximum effort. Any increase in airspeed causes an increase in manifold pressure, and this in turn causes fuel flows to change.

Think of the wastegate as a diverter valve, controlled by the throttle. At lower altitudes, you don’t need as much



The G1000 screens dominate the 206's panel, and have a standby airspeed indicator, attitude indicator, and altimeter located beneath them.



turbo assistance to make high power levels, so you don't need as much throttle. This keeps the wastegate open a bit, and lets some exhaust air divert overboard. But for maximum power in the thin air of higher altitudes, you have to add throttle to close the wastegate and send all the exhaust air to power the turbo. Now you're in the "fluctuation zone," so to speak, where airspeed increases create rises in ram air pressure. And rises in manifold pressure.

While turbocharging is no novelty in the 206 (Continental-powered versions were built between 1966 and 1986; more than 518 Lycoming-powered T206s have been built since production was resumed in 1998), its latest avionics suite has certainly made a big, big splash.

The Garmin G1000 has arrived. While this very impressive avionics suite has already been offered on new Cessna Skyhawks and Skylanes, it made its debut on the 206 last summer. The G1000 consists of two 11-by-14-inch high-resolution display screens and a wide range of functions that rival anything in today's most modern airliners. While a full description of the G1000 is outside the scope of this article, suffice it to say that this full-featured suite makes the Turbo 206 more of a sales draw than ever. Virtually all new orders for T206s include the G1000 as part of the standard Nav III package, which is worth \$63,150. In this installation, the G1000 incorporates traffic information via its traffic information service (TIS) hardware, which relays air traffic control target information to the Garmin's centrally mounted multifunc-

tion display (MFD). Terrain mapping doesn't meet the TAWS (terrain awareness warning system) requirements that apply to six-seat turbine-powered general aviation aircraft, but the G1000 does provide great terrain and situational awareness through the colored terrain symbology. For example, if terrain is depicted in red, the display is saying the ground ranges from 100 feet below your altitude to heights above your altitude.

Textual and graphical weather information is provided from an XM WX Satellite Weather subscription and provides a wide range of enhanced weather graphics, including winds aloft, satellite imagery, lightning plots, airmets and sigmets, and echo-top and Nexrad storm-cell-tracking graphics. By the way, an L-3 Communications Stormscope WX-500 also is included in the G1000 option, as is a Honeywell Bendix/King KAP 140 two-axis autopilot. Garmin developed its own autopilot in September 2005 and it should be offered in future versions of G1000-equipped Cessnas.

AmSafe's seat-belt air bag installation (top right) inflates during sudden decelerations. It is standard on the four front seats and a \$1,500 option on seats five and six. Standard-equipment, high-intensity discharge landing and taxi lights are on the left-wing leading edge.

Turns out that most buyers of new T206s use them as ultimate family-movers, or Aero SUVs.

Dual VHF communication and navigation radios are incorporated into the G1000, as is a presentation of engine data. The unit's GPS receiver is WAAS capable for extra accuracy on these newly commissioned approaches, and the G1000's solid-state attitude heading reference system generates the information needed to produce the primary flight display's (PFD's) attitude and heading representations. A digital air data computer generates real-time displays of true airspeed, wind speed and direction, groundspeed, distance to waypoint, and estimated time en route—all shown at the top of both the PFD and MFD.

The PFD uses vertical-tape representations of airspeed and altitude, complete with magenta trend lines. These show the airspeed and altitude anticipated in the next six seconds. In addition, important airspeeds such as V_R (rotation speed), V_X (best angle of climb), and V_Y (best rate of climb) are plainly marked on the airspeed tape. Of course, the MFD views can be customized according to pilot preferences, and a thumbnail moving map can be called up in the lower-left corner of the PFD.

Am I alone, or does anybody else think a dual-screen integrated flight display system in wall-to-wall technicolor looks out of place in an airplane that earned its stripes as a flying pickup truck? One look at that panel and you think: Turbofan-in-the-flight-levels-please-pass-the-snack-tray. Not: Let's see how many elk carcasses we can stuff in this baby on this year's hunting trip!

But maybe we should forget the stereotypes. After all, T206 customers have. Turns out that most buyers of new T206s use them as ultimate family-movers, or Aero SUVs, to lean on AOPA's 1999 Cessna 206 sweepstakes sloganry. They tend to buy fully loaded airplanes, right down to air conditioning (\$27,750), and AmSafe Aviation inflatable seat belt restraints on the fifth and sixth seats (\$1,500—they're standard on seats one through four). The G1000 option goes without saying.

Even newly minted private pilots like Mike Karnes, of Dallas, are buying fully decked-out T206s like these. I met Karnes at the Independence Municipal Airport in Independence, Kansas, where he was taking Cessna's G1000 pilot initial course—a three-day intensive program that's included in the price of the airplane. Cessna Pilot Cen-



Rear dual doors open wide to let in cargo and/or passengers. Six leather seats and a built-in oxygen system are standard in T206s.

ters also provide this training. Karnes wanted the room and performance of the T206, given that he routinely would be flying big passenger loads in the high density altitudes and sweltering temperatures of the Texan summer.

I flew Karnes' T206 on a very windy, gusty Kansas day. As I climbed into the cockpit, memories of my days as a pilot flying 206s on aerial photography missions came flooding back. It was the same old trucky-handling bird as it was 30 years ago, all right...but that panel! It will take me more than a few hours to become competent working the G1000. And until then I'll spend a lot of head-down time burning its psychosomatic routines into my brain. Good thing there's the TIS, which can save your bacon in approach control airspace, which is the only airspace where TIS can operate reliably. This raises another issue: The FAA is proposing a shut-down of TIS while it upgrades its surveillance radars in some parts of the United States. AOPA, of course, is opposed to this and is arguing strongly against it.

With just two of us aboard, I flew over the Kansas flatlands at 4,500 feet. The temperature was a few degrees above standard, and power was set at 30 inches manifold pressure and 2,400 rpm. To get 75-percent power the mixture was leaned to 19.1 gph. (Hey, a gas sipper it isn't!) TIT stayed at 1,600 degrees and the G1000 posted a 154-knot true airspeed. Cessna says the T206 will make its top speed of 178 knots at 17,000 feet.

Back in the pattern at Independence, strong, steady headwinds on final pushed our ground-speed as low as 25 knots—even though we were indicating 80 knots! The ground roll was predictably short. Maybe 400 feet, judging by the runway-light intervals.

SPECSHEET

Cessna T206H Stationair

Standard equipped price: \$400,500

Average equipped price: \$463,150

Specifications

PowerplantTextron Lycoming TIO-540, 310 hp
Recommended TBO2,000 hr
PropellerMcCauley three-blade, constant speed
Length28 ft 3 in
Height9 ft 3.5 in
Wingspan36 ft
Wing area174 sq ft
Wing loading20.7 lb/sq ft
Power loading11.6 lb/hp
Seats6
Cabin length12 ft
Cabin width3 ft 7 in
Cabin height4 ft 1 in
Standard empty weight2,314 lb
Max ramp weight3,617 lb
Max takeoff weight3,600 lb
Max landing weight3,600 lb
Max useful load1,303 lb
Max payload w/full fuel781 lb
Fuel capacity92 gal (87 gal usable)
Aft baggage capacity180 lb, cu ft

@ 75% power150 kt/530 nm (19.2 gph)

@ 68% power, 24,000 ft.....160 kt/600 nm (17.3 gph)

Service ceiling27,000 ft

Landing distance over 50-ft obstacle.....1,395 ft

Landing distance, ground roll735 ft

Limiting and Recommended Airspeeds

V_X (best angle of climb)69 KIAS

V_Y (best rate of climb)89 KIAS

V_A (design maneuvering)125 KIAS

V_{FE} (max flap extended)

10 degrees140 KIAS

20 degrees120 KIAS

Full flaps100 KIAS

V_{NO} (max structural cruising)149 KIAS

V_{NE} (never exceed)182 KIAS

V_R (rotation)55 KIAS

V_{SL} (stall, clean)59 KIAS

V_{SO} (stall, in landing configuration)

.....47 KIAS

Performance

Takeoff distance, ground roll.....910 ft

Takeoff distance over 50-ft obstacle.....

.....1,740 ft

Max demonstrated crosswind component ..

.....20 kt

Rate of climb, sea level1,050 fpm

Cruise speed/range w/45-min rsv, std fuel (fuel consumption) 10,000 ft

For more information, contact Cessna Single Engine Piston Aircraft, Annex IV, 2603 South Hoover Road, Wichita, Kansas 67215; 800/4-CESSNA; www.TurboStationair.com.

All specifications are based on manufacturer's calculations. All performance figures are based on standard day, standard atmosphere, sea level, gross weight conditions unless otherwise noted.

Like most of my 206 flights, it was a satisfying ride in an airplane with nearly impeccable manners. Just a little ponderous in control responsiveness, that's all.

The Cessna juggernaut rolls on. Like the rest of its piston singles, 2005's production run of T206s was sold out early last year.

AOPA

E-mail the author at tom.horne@aopa.org.

i Links to additional information about Cessna 206s may be found on AOPA Online (www.aopa.org/pilot/links.shtml).

