

# Bring on the box

A South American heavy hauler with gusto

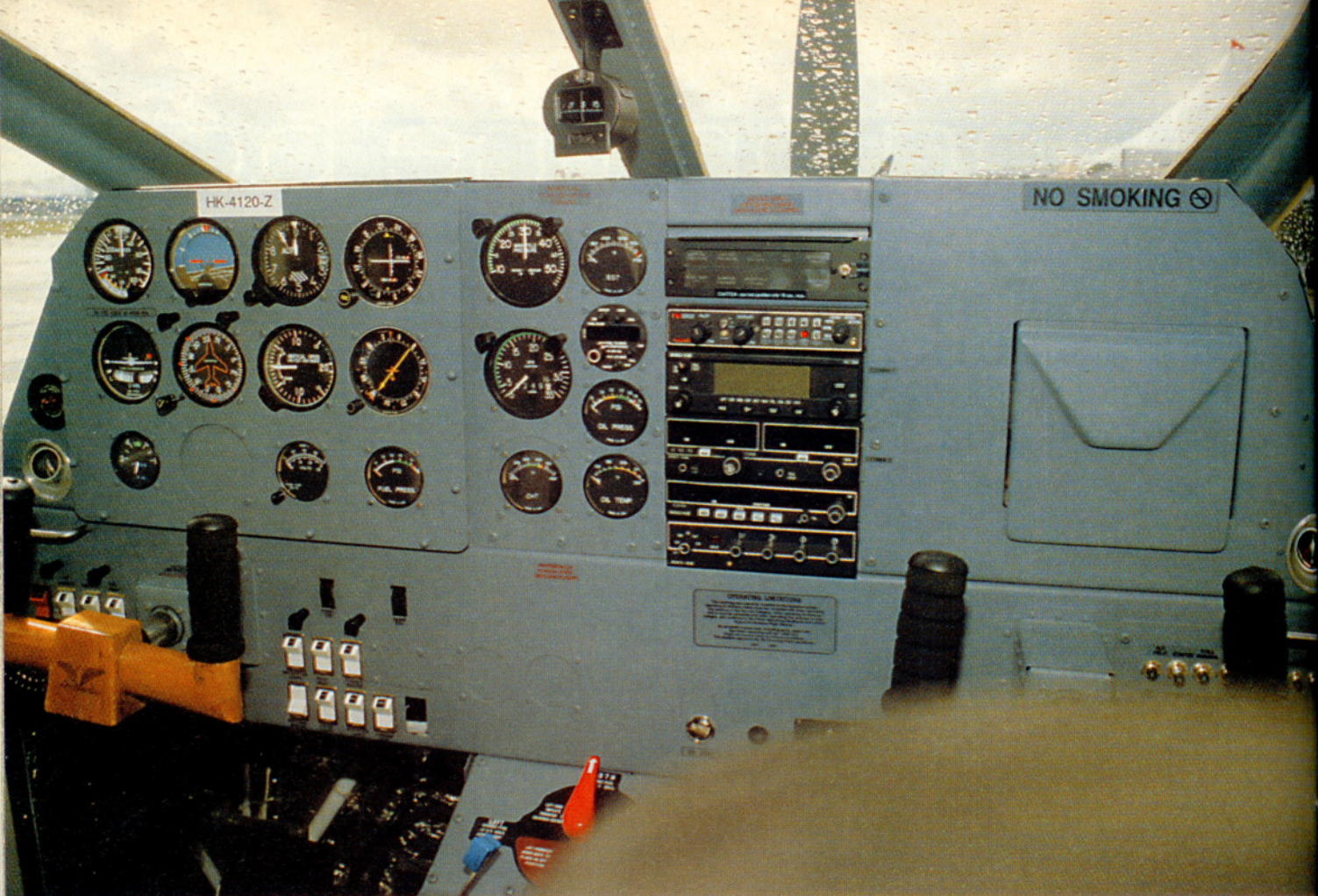
Okay, let's get the jokes out of your system right here at the start. Yes, the Gavilan assembled could be the crate it came in. Yes, its appearance suggests a New Year's Eve union of a Cessna Caravan and a Piper Tri-Pacer. And, yes, at 130 knots true on three quarters of 350 horsepower, it also lacks in speed what so many FBO-couch experts

have said that this Colombian hauler lacks in style.

■ So what? Like the Cessna Caravan—and to some extent the de Havilland Beaver and other utility-minded designs that have come before—the Gavilan's beauty resides in its ability to be boxed to the roofline and carry its burden out of short, unimproved strips. In its current iterations, the

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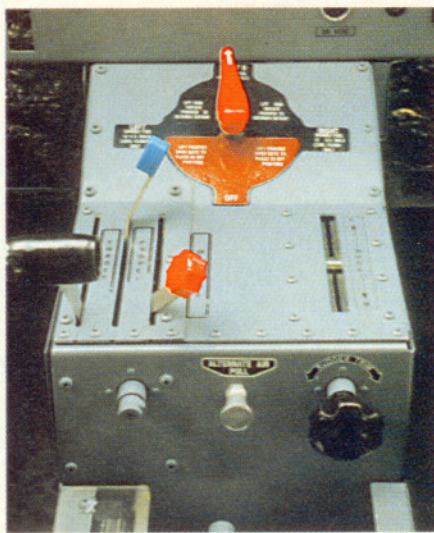


The industrial-looking panel is smartly laid out. The throttle quadrant will be familiar to Piper pilots. Handling is much like that of a giant Cherokee with the wing on top.

Gavilan can be equipped to carry cargo, up to seven passengers (six in back), two litters, or anything else you care to stuff into the 150-cubic-foot aft cabin.

Although the Gavilan has been certified and built in Colombia, its roots are distinctly American—Pennsylvanian, in fact. In the late 1960s, Piper's engineering staff penned and built a prototype of the Gavilan. It held fast to several Piper design idioms of the day, including a constant-chord airfoil; simple, no-compound-curves construction; and Lycoming power. In fact, with a bit of imagination, it's easy to see both Cherokee and Tri-Pacer influences in the Gavilan's design.

A steel-tube frame encircles the cabin and picks up the twin-spar wings at the root. The structure extends to the aft bulkhead, where a monocoque tail section joins. Those main spars are simple extrusions with additional straps riveted on in high-stress areas. The only complex machined parts are the strut forks; otherwise, the airplane has been



designed to be easily constructed by a semiskilled workforce using a minimum of expensive, high-tech tooling. Skin thickness ranges from 0.025 to 0.032 inches.

Sporting a 4,500-pound maximum gross weight (with no zero-fuel limitation), the standard Gavilan will be able to carry 1,700 pounds of pilot, fuel, and cargo. (The prototype is

some 150 pounds heavier than predicted for the production models; weight- and drag-reduction programs are under way.) Standard fuel tanks hold 104 gallons usable, leaving 1,076 pounds of full-fuel payload; figure 900 pounds of revenue-generating weight for commercial operators. Obviously, you won't be able to fill all eight seats with humans, the tanks to the brim, and have anything left for baggage. But few trips typical of a 130-knot delivery van will need the full tankage.

Working against the heft of this brawny box bearer is 350 hp worth of TIO-540 Lycoming. Last seen in the rare Piper Mojave twin, this -W2A, angle-valve variant uses top-down induction, a massive Garrett turbo-charger sans intercooler, and up to 50 inches of boost for rated power. Maximum power is available to 18,000 feet in the Gavilan, making it ideal for many of Colombia's high-altitude airports. In standard form, the Gavilan will be certified to only 12,500 feet in the United States because under FAR Part 23, the oxygen system has to be



*Either six people, two litters, or lots of cargo can be placed in the Gavilan's 150-cubic-foot aft cabin area.*

certified along with the airplane for maximum altitudes higher than 12,500 feet. (There are other inane requirements in the new Part 23, including a "pitot heat on" light on the annunciator panel; the Feds have apparently forgotten that good annunciator panel design calls for all lights off under normal operations. The infuriating door handles, with a separate lever and button that prevent one-hand operation, are another example of rules run amok.)

We flew the airplane during a hot, humid, windy day in Houston, Texas, where the Gavilan acquitted itself well. Takeoff and climb at about 350 pounds under maximum gross weight were hardly neck-snapping despite the 350 hp up front. Gavilan claims an 800-fpm maximum climb at the best-rate speed of 85 knots; we noted 700 fpm on an above-standard-temperature day.

And it flies like, well, a massive Piper Cherokee with the wing on top. Reasonably light aileron and elevator pressures keep the Gavilan pointed straight with ease, even in continuous light chop. In these two axes, the airplane is well balanced and pleasurable to fly. Rudder forces are higher, and the airplane has both a noticeable amount of adverse yaw and only modest static yaw stability. When the nose is pulled off course because of turbulence, it's up to the pilot to put it straight because, by itself, the Gavilan will take its sweet time. The ride in back during such

antics is hardly stomach-churning, but operators flying human cargo might want to look into a yaw damper.

Otherwise, the Gavilan is amazingly well-behaved. Three-position manual flaps allow for steep, short descents, and the airplane allows you to make touchdowns well below 60 knots, with plenty of energy left to place the tire marks precisely. Even when provoked, the Gavilan refuses to drop out from under you. Botched landings will be absorbed by

*At 10,000 feet, the 350-horsepower Lycoming TIO-540 can pull the Gavilan through the air at 130 knots on 19 gallons per hour.*



an innovative gear system. Resembling a scaled-up Tri-Pacer gear, the mains employ steel tube supports cushioned by elastomeric bushings in tension at the end of long pull rods. The free-castering nosewheel uses similar elastomer pucks, as well as a shock absorber that might be from a Chevy truck. Testing was performed in excess of the current Gavilan's 4,500-pound maximum gross weight, and it appears that the gear is ready to handle it.

For the pilot the ride in the Gavilan is a treat. A huge cockpit is combined with generally good control, instrument, and switch layout to provide a low-workload platform. The turbo Lycoming is well behaved and reasonably well cooled; Gavilan is working on a revised version of the fixed cowl flaps or, possibly, adjustable versions to help increase cruise speeds. The prototype ran its cylinder-head and oil temperatures at moderate levels—350 and 200 degrees, respectively—even at high-power cruise. Weather prevented us from taking the Gavilan to 10,000 feet, where the company measures its performance numbers, but the 110-knot cruise at a density altitude of 3,000 feet suggests that the claims of a 130-knot cruise are credible. Expect to see fuel flows of 19 gph at maximum cruise and 42 gph on takeoff.

Gavilan is seeking a stateside partnership to hammer together Colom-



Gavilan's roots trace back to Piper Aircraft. A prototype was built by Piper in the late 1960s. Its main landing gear look amazingly like those of the Tri-Pacer.

**Gavilan**  
Price as tested: \$336,000

Specifications	
Powerplant	Lycoming TIO-540-W2A, 350 hp @ 2,600 rpm
Recommended TBO	1,800 hr
Propeller	Hartzell, three-blade, constant speed, 80-in diameter
Length	31 ft 5 in
Height	12 ft 3 in
Wingspan	42 ft
Wing area	207 sq ft
Wing loading	21.7 lb/sq ft
Power loading	12.9 lb/hp
Seats	8
Cabin length	12 ft 7 in
Cabin width	4 ft 8 in
Cabin height	4 ft 11 in
Empty weight	2,800 lb
Empty weight, as tested	2,950 lb
Maximum gross weight	4,500 lb
Useful load	1,700 lb
Useful load, as tested	1,550 lb
Payload w/full fuel	1,076 lb
Payload w/full fuel, as tested	926 lb
Fuel capacity, std	108 gal (104 gal usable)
	648 lb (624 lb usable)
Oil capacity	12 qt
Baggage capacity	200 lb, 17 cu ft (seven-passenger configuration)
Performance	
Takeoff distance, ground roll	1,119 ft

Takeoff distance over 50-ft obstacle	1,790 ft
Max demonstrated crosswind component	17 kt
Rate of climb, sea level	800 fpm
Cruise speed/endurance w/45-min rsv, std fuel (fuel consumption)	
@ 75% power, best economy	130 kt/4.8 hr
10,000 ft	(112 pph/18.7 gph)
Max operating altitude (FAR Part 25 limitation)	12,500 ft
Landing distance over 50-ft obstacle	1,640 ft
Landing distance, ground roll	801 ft

**Limiting and Recommended Airspeeds**

V <sub>X</sub> (best angle of climb)	74 KIAS
V <sub>Y</sub> (best rate of climb)	83 KIAS
V <sub>A</sub> (design maneuvering)	135 KIAS
V <sub>FE</sub> (max flap extended)	105 KIAS
V <sub>NO</sub> (max structural cruising)	145 KIAS
V <sub>NE</sub> (never exceed)	180 KIAS
V <sub>R</sub> (rotation)	65 KIAS
V <sub>SI</sub> (stall, clean)	65 KIAS
V <sub>SO</sub> (stall, in landing configuration)	58 KIAS

For more information, contact El Gavilan S.A., Post Office Box 6781, Santafe de Bogota, Colombia; 57-1-211-8100; fax 57-1-211-8952; or visit the Web site ([www.egavilan.com](http://www.egavilan.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.

bian-made subassemblies for worldwide consumption. Although the airplane has a type certificate, the Colombians do not have reciprocal production-certificate rights, so a U.S. partner is advantageous. Moreover, Gavilan hopes to take advantage of both the low Colombian labor rates and the proximity of the airplane's major-component suppliers—the engine, prop, avionics, instruments, wheels, and brakes are all from the United States.

For Colombian customers—there have been eight airplanes produced so far, most for the Colombian Air Force—the Gavilan costs \$336,000 with basic VFR equipment, including an AlliedSignal Bendix/King KLX 135A GPS/com, KR 85 ADF, and PS Engineering PMA 6000 audio panel/intercom. The company is working on autopilot certification. Put that equipped price up against a \$1-million-plus Cessna Caravan and the Gavilan starts to look a lot sleeker and sexier. □

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