



SEGUIN GERONIMO

Breaking the charts with a
replay of the original light twin

BY MARK M. LACAGNINA

Piper Aircraft introduced general aviation's first light twin, the Apache, more than 30 years ago. The airplane had a lot to offer, with its rugged tubular structure and roomy cabin. Best of all, it was a twin that could be acquired and operated inexpensively. But every design is a product of compromises, and the Apache certainly was no exception. It suffered from aesthetic shortcomings and vapid performance, especially with one engine inoperative.

The tweekers have had a field day with the Apache. The airplane was not in production long before various powerplant conversions and structural and cosmetic modifications became available from such companies as Doyne, Miller, Nyack and Vecto. The most common field-dressing was replacement of the 150-hp and 160-hp Lycoming O-320 engines with 180-hp O-360s. Other popular modifications included longer nose sections, dorsal fins, squared-off vertical stabilizers and Hoerner-type wing tips.

Piper built about 2,100 Apaches from 1954 through 1961. (The number does not include some 100 Apache 235s, basically small-engine Aztecs, produced thereafter.) About 1,500 of the light twins are still around, and it is a fair assumption that decades of wear and tear have taken their toll on the majority of these airplanes. (See "The Original Light Twin," November 1981 *Pilot*, p. 80.)

Today, only one company continues to offer a series of modifications for the Apache. That company is Seguin Aviation, a fixed-base operator in Seguin, Texas. The company's roots are in Vecto, which was established in San Antonio in the early 1960s by three partners: Fred Burger, Ed Ondrej and L. B. Pete. Vecto began its aftermarket work on the Apache with a 16-inch nose extension and eventually expanded to offer comprehensive conversion packages for the airplane. Vecto was renamed when it was relocated to Seguin, 25 miles east of San Antonio. Following the deaths of his partners, L. B. Pete ran the company until 1983, when he sold it to Bryant Ingram, president of Ingram Manufacturing, located in San Antonio.

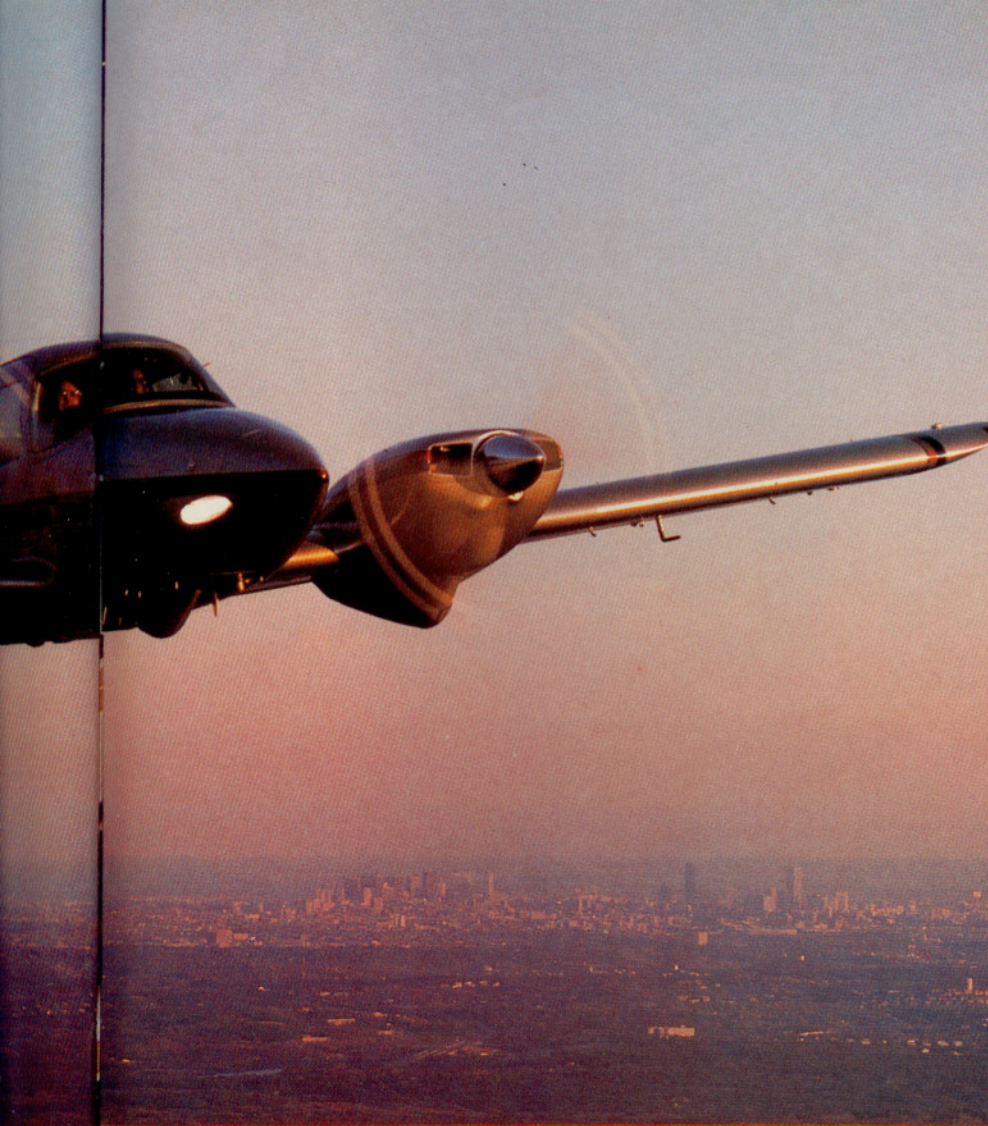
General manager of Seguin Aviation is Paul Holman, who joined the com-



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Aerodynamic tweaks and extra cubes turn a homely straggler into a good-looking screamer.





pany as a mechanic in 1977 after retiring from the Air Force as an instructor and command pilot. According to Holman, Vecto/Seguin has converted more than 100 Apaches into Geronimos. The name, that of the legendary chief of the Chiracahua Apache Indians, is reserved for airplanes that undergo the full conversion treatment at Seguin Aviation.

The treatment begins with a major airframe inspection and overhaul. The airplane is stripped, and all components are refurbished to factory specifications and tolerances. Through experience, Seguin's mechanics know where to look for trouble. They ensure compliance with all airworthiness directives and service bulletins on the model. The control surfaces are opened up for inspection and reinforced during reassembly. The neoprene and nylon fuel bladders are checked carefully for deterioration (about half require replacement, according to Holman). The tubular framework is filled with linseed oil and checked for leaks. All Apaches were zinc-chromated during assembly, and Seguin has found serious corrosion in very few airplanes. (There were two bad cases: one resulting from a broken relief tube; the other airplane had been ditched in water.)

The overhaul includes new electrical wiring and dynafocal engine mounts. Typically, the inspection and overhaul cost about \$18,000, including labor, parts, sheet metal repair and overhaul of the hydraulic power pack. The work is warranted for six months.

Next, the airplane is equipped with factory-new, 180-hp Lycoming O-360-A1D engines and lightweight, two-blade Hartzell propellers. Recommended time between major overhaul of the engines is 2,000 hours. The modification, which includes most engine accessories, costs \$33,250. For \$286 more, a customer can get two-blade Q-tip Hartzell propellers, which are two inches shorter (72 versus 74 inches). According to Seguin, the Q-tips are quieter and slightly improve climb performance. The engines are enclosed in fiberglass nacelles, which cost \$5,575. The nacelles provide improved engine cooling, reduce drag and are much easier to remove and reinstall (about four minutes each, compared with 40 minutes for removing

and reinstalling the Apache cowling).

A 31-inch extended nose section improves the airplane's appearance, as well as its loading flexibility and cabin ventilation. The fiberglass section (\$3,250) includes a compartment that can hold up to 50 pounds of baggage. Another 150 pounds of baggage can be placed in a 33- by 36-inch compartment behind the rear seat. This modification costs \$998.

The Apache's round wing tips are replaced with Hoerner-type, sculpted fiberglass tips (\$1,180), which reduce wing span by 22 inches. This modification, as well as a dorsal fin (\$535) and a square vertical stabilizer (\$845), improve the airplane's single-engine control characteristics, according to Seguin.

New tires are installed, and the wheels, which protrude from their wells when retracted, are enclosed in fiberglass doors (\$3,250). Two extra brake pads are installed on both main wheels (\$1,417). Other modifications include: a tail cone, \$355; flap gap seals, \$343, and nacelle and wing root fairings, \$765; a one-piece windshield, \$828; a third passenger window, \$1,198, and inner panes for all cabin windows, \$670; split nose cowls, \$880; soundproofing, \$632 (\$882 for "super soundproofing"); and dual ram's-horn control wheels, \$695.

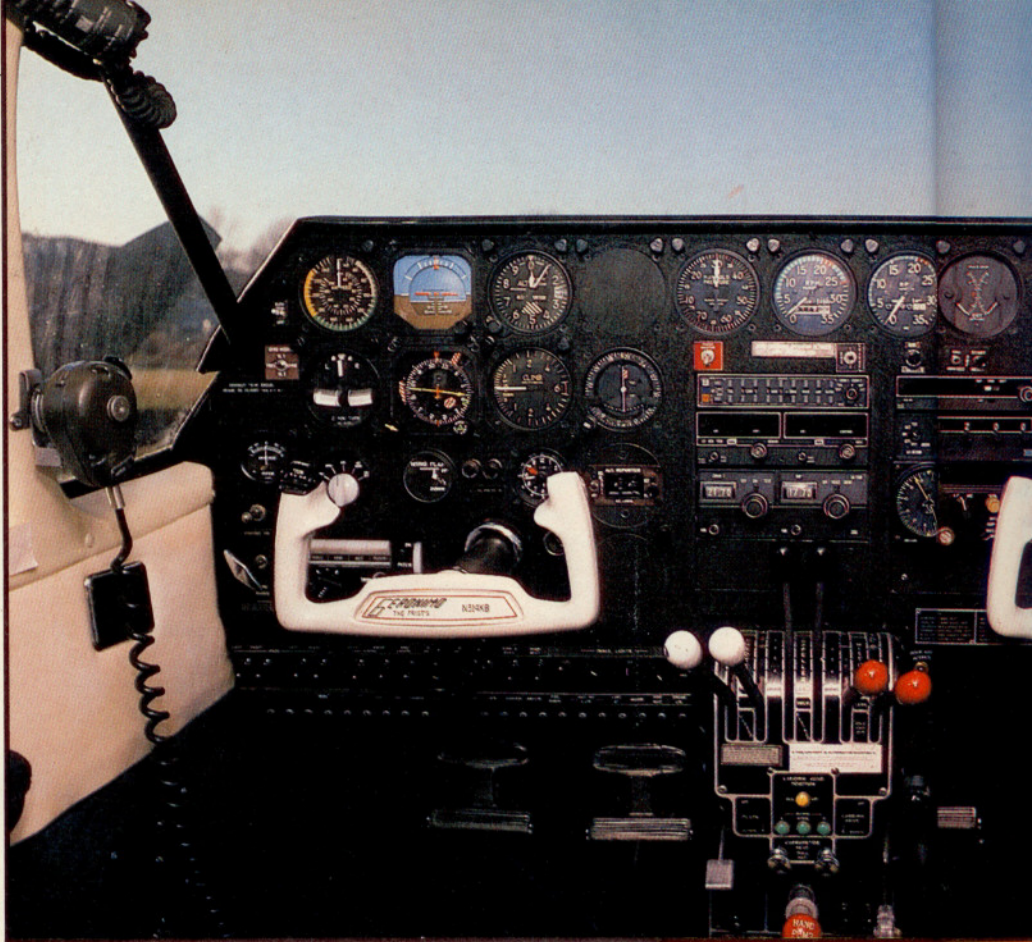
The Geronimo is finished with a custom interior (\$3,550, including a new headliner, seat upholstery, side panels and carpet), panel refabrication and rearrangement, \$4,100. New paint costs an additional \$3,675.

The previously mentioned prices are for modifications performed by Seguin Aviation. Except for the engines, props and nacelles, the modifications are available in kit form at lower cost. Many of the modifications also are approved for the Piper Aztec.

Several options are available for the Geronimo, including wing tip tanks, which hold 24 gallons of fuel each, \$3,250; a sixth passenger seat and kick-out window, \$1,205; a rear cargo door, \$4,400; and an inflatable door seal, \$478. None of the options for the Geronimo are available as kits.

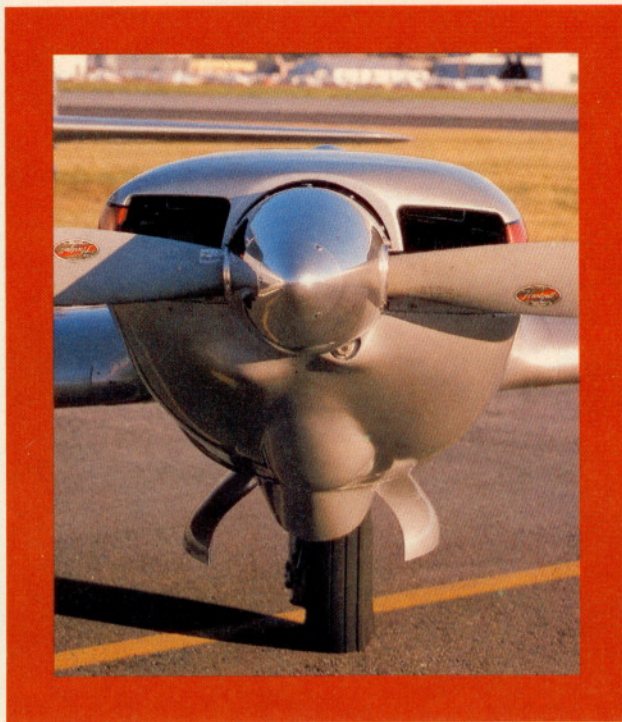
While about half of Seguin's customers have opted for full Geronimo conversions (or have purchased Geronimos outright), others have chosen partial conversions. The most popular

continued



GERONIMO

Two-piece, fiberglass nacelles improve cooling and reduce drag. They can be removed in a jiffy.





GERONIMO



N314KB means March 14, Kathryn and Bill: the Frists' wedding anniversary.

Cause for Conversion

One of the most important considerations in purchasing a Seguin Geronimo conversion (or, for that matter, any other major airframe/engine conversion package) is resale value. The investment for the conversion is substantial and, generally, cannot be recouped on resale. The purchaser must decide that he is going to have to keep the airplane for awhile in order to realize a return on the investment.

Geronimo owners Edward W. Crane and Dr. William H. Frist do plan to keep their airplanes for awhile. Neither Crane, a schoolteacher during the day and operator of a thriving gymnastics and ski instruction business in his spare time, nor Frist, a surgical resident, fly their Geronimos very often or have the time for frequent recurrent training. Their airplanes provide just what these general aviation pilots need: exceptional single-engine performance.

The performance came in handy a few years ago for Crane, AOPA 695596, who had

to shut down his aircraft's right engine on two consecutive takeoffs because of water in the fuel that had gone undetected during preflight. Both times, Crane was able to bring "Bad Molly Trolley II" (a nickname provided by his students) safely around for a single-engine landing.

Frist, AOPA 442660, is the owner of N314KB, the Geronimo that appears in the photographs accompanying these articles. He bought an Apache about three years ago, intending to have the airplane modified. Initially, he considered having the work done by local mechanics but, after visiting Seguin Aviation, decided to have the work done there. He is pleased with the decision. During the first annual inspection of his Geronimo, a broken engine mount had to be replaced; although the airplane's warranty had expired, Seguin picked up the tab. "They sell a high-quality, first-class airplane," Frist notes, "and they stand behind their product 100 percent." —MML



A nickname provided by his students has become a tradition for Ed Crane.

modifications among the latter group are the extended nose section and the gear doors. For \$6,500, these modifications, alone, substantially improve the Apache's appearance and performance.

The changes in appearance and performance that evolve from the full conversion, however, are startling. The Geronimo looks more like a trim Twin Comanche or a big Wing Derringer than an Apache, and its performance is superior to most modern light twins. According to Seguin Aviation's data, collected during flight tests at 3,800 pounds (200 pounds shy of gross weight), the airplane requires only 400 feet for takeoff or landing, and climbs at 2,000 fpm. It cruises at about 168 knots, burning 20 gallons of fuel per hour, at 75-percent power: At 65-percent power, it cruises at 162 knots burning about 18 gph. The Geronimo stalls at 52 knots, clean, and 47 knots in landing configuration.

Single-engine performance is the Geronimo's forte. Vmc, the minimum airspeed at which the airplane can be controlled with its critical engine inoperative, is 63 knots. Single-engine rate of climb, according to Seguin Aviation, is 750 fpm, and single-engine service ceiling is 12,000 feet.

During a flight in N6918, a Geronimo used by the company for flight instruction and demonstration, Paul Holman shut down the right (critical) engine and feathered the propeller at about 5,000 feet. The temperature at that altitude was 95 degrees. At blue line (Vyse, best single-engine rate of climb speed: 83 knots), the airplane climbed at 100 fpm.

Seguin Aviation not only modifies Apaches but sells completely converted aircraft, as well. The price for a finished Geronimo is approximately \$97,500. Avionics equipment is extra, and the company offers a good selection, including installation of weather radar systems. Several new modifications are in the works, including an electrothermal propeller deice system, air conditioning and a new windshield design. More information is available from Seguin Aviation, 2075 Highway 46, Seguin, Texas 78155. Telephone: 512/379-3278.

The Geronimo is worthy of consideration by anyone in the market for a light twin. One flight will convince

even the most jaded skeptic that the airplane cannot be passed off as a \$100,000 Apache. The Geronimo is an entirely different airplane. More than 20 years of refinement by Seguin Aviation have produced an attractive light twin that is easy to fly, economical to operate and capable of excellent performance when the chips are down. □

Seguin Geronimo

Price \$97,498

(fully converted aircraft)

Specifications

Powerplants	Lycoming O-360-A1D 180 hp @ 2,700 rpm
Recommended TBO	2,000 hr
Propellers	Hartzell two-blade, constant-speed, full-feathering; 74 in dia.
Length	29 ft 8.6 in
Height	9 ft 6 in
Wingspan	35 ft 3.6 in
Wing area	207.6 sq ft
Wing loading	19.3 lb/sq ft
Power loading	11.1 lb/hp
Seats	5
Cabin length	8 ft 3.5 in
Cabin height	4 ft 4.3 in
Cabin width	3 ft 11 in
Empty weight	2,500 lb
Gross weight	4,000 lb
Useful load	1,500 lb
Payload w/full fuel	852 lb
Fuel capacity, std	648 lb (108 gal)
w/wing tip tanks	936 lb (156 gal)
w/nacelle tanks	1,200 lb (200 gal)
Baggage capacity	250 lb

Performance*

Takeoff distance, ground roll	400 ft
Takeoff distance over 50-ft obst	650 ft
Rate of climb, sea level	2,000 fpm
Single-engine ROC, sea level	750 fpm
Max level speed, sea level	174 kt
Cruise speed/range, std fuel (total fuel consumption)	
@ 75% power	168 kt/907 nm (120 pph/20 gph)
@ 65% power	162 kt/972 nm (108 pph/18 gph)
Service ceiling	23,000 ft
Single-engine service ceiling	12,000 ft
Landing distance over 50-ft obst	675 ft
Landing distance, ground roll	400 ft

Limiting and Recommended Airspeeds

V _{mc} (Min control w/ critical engine inoperative)	63 KIAS
V _x (Best angle of climb)	76 KIAS
V _y (Best rate of climb)	91 KIAS
V _{yse} (Best single-engine rate of climb)	83 KIAS
V _{fe} (Max flap extended)	87 or 109 KIAS
V _{le} (Max gear extended)	109 or 130 KIAS
V _{no} (Max structural cruising)	156 KIAS
V _{ne} (Never exceed)	197 KIAS
V _{s1} (Stall, clean)	52 KIAS
V _{so} (Stall in landing configuration)	47 KIAS

*All specifications are based on
manufacturer's calculations.*

**Performance figures are based on aircraft
gross weight of 3,800 pounds.*