DOUBLE VISION

PIPER PA–44 SEMINOLE

A comfortable conveyance for student or sage

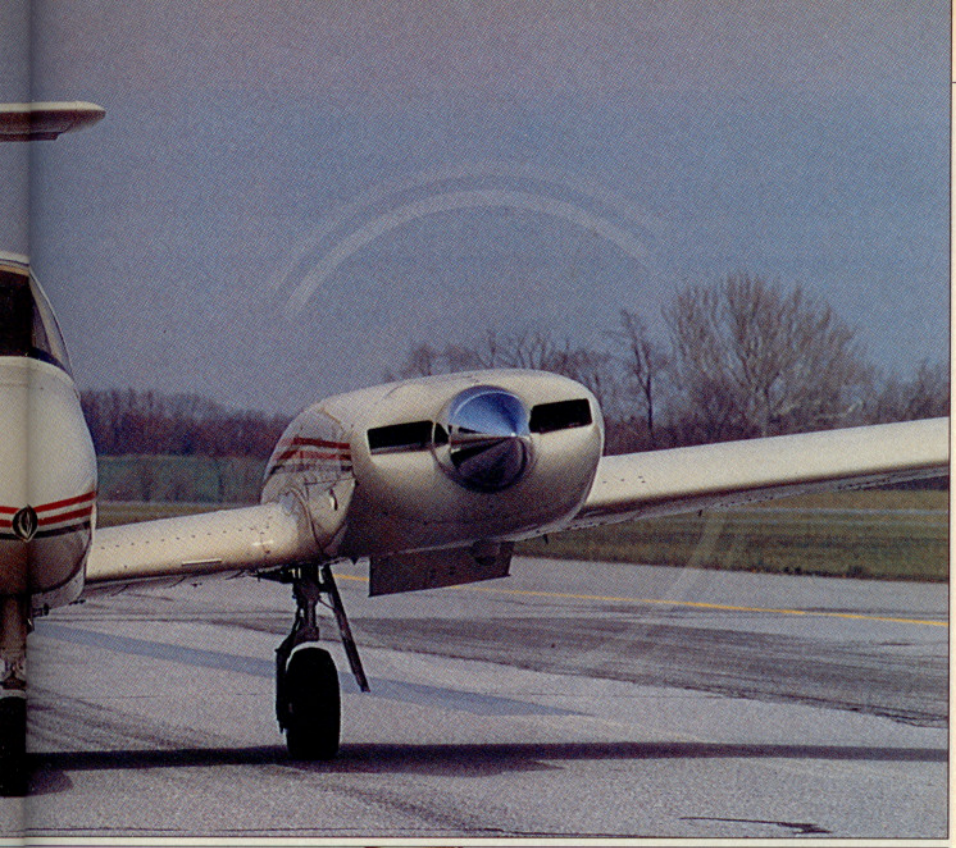
BY THOMAS B. HAINES

1978 A banner year. Airline deregulation drives the demand for pilots to the flight levels. Flight schools scurry to fill the void with new multiengine pilots.

General aviation deliveries reached an all-time high that year. Topping the list of light twins by far was the Piper Seneca, with 534 deliveries. The Seneca, Aztec, Apache, Twin Comanche, and Beech Travel Air, among others, had dominated the twin training market for years, but schools, anxious to turn a buck as well as to turn out a plethora of students, wanted something cheaper to buy and operate than the older twins. Beech answered the call with the Duchess, Grumman with the Cougar, and Piper with the Seminole. Only the Cougar was a clean-sheet airplane. Beech and Piper dusted off the plans from existing models to fill the demand.

For Piper, in particular, the deal must have been a good one. The then-17-year-old PA–28 tooling and engineering surely had been amortized. Hanging a pair of 180-horsepower Lycoming engines on the short, tapered wing took some new engineering and design work, for sure, but after tens of thousands of copies and dozens of iterations, the airframe was as proven as they come.

Perhaps what the folks in Vero Beach, Florida, didn't anticipate, though, was the way in which their twin trainer would be embraced by the business flier. The number of Seminoles sold to individuals was not huge, but the market turned out to be big enough that Piper soon began offering it amenities such as turbocharging, radar, and deicing equipment. The private owners found the Seminole to be a comfortable airplane with plenty of payload and reasonable speed and



economy. Most of all, it offered what they couldn't get in high-performance singles that cost and performed about the same: the comforting sound of two engines working in sync—well, almost in sync. With the soothing *wah wah wah* of two engines came two alternators, two vacuum pumps, and the knowledge that if one engine quit, at least you had some options. And compared to the Aztec, for example, the Seminole with its counterrotating propellers requires less action and dexterity on the part of the pilot when one engine goes quiet.

These were many of the factors Pittsburgh engineering contractor Donald Beckman took into account when he bought N8187H, a 1981 turbocharged Seminole. He could as quickly dash around the East and more economically make his regular trips to Phoenix in a high-performance single than in his turbo Seminole, but he prefers the engines' comforting tête-á-tête as he flies in all types of weather, at night, and over mountains and water.

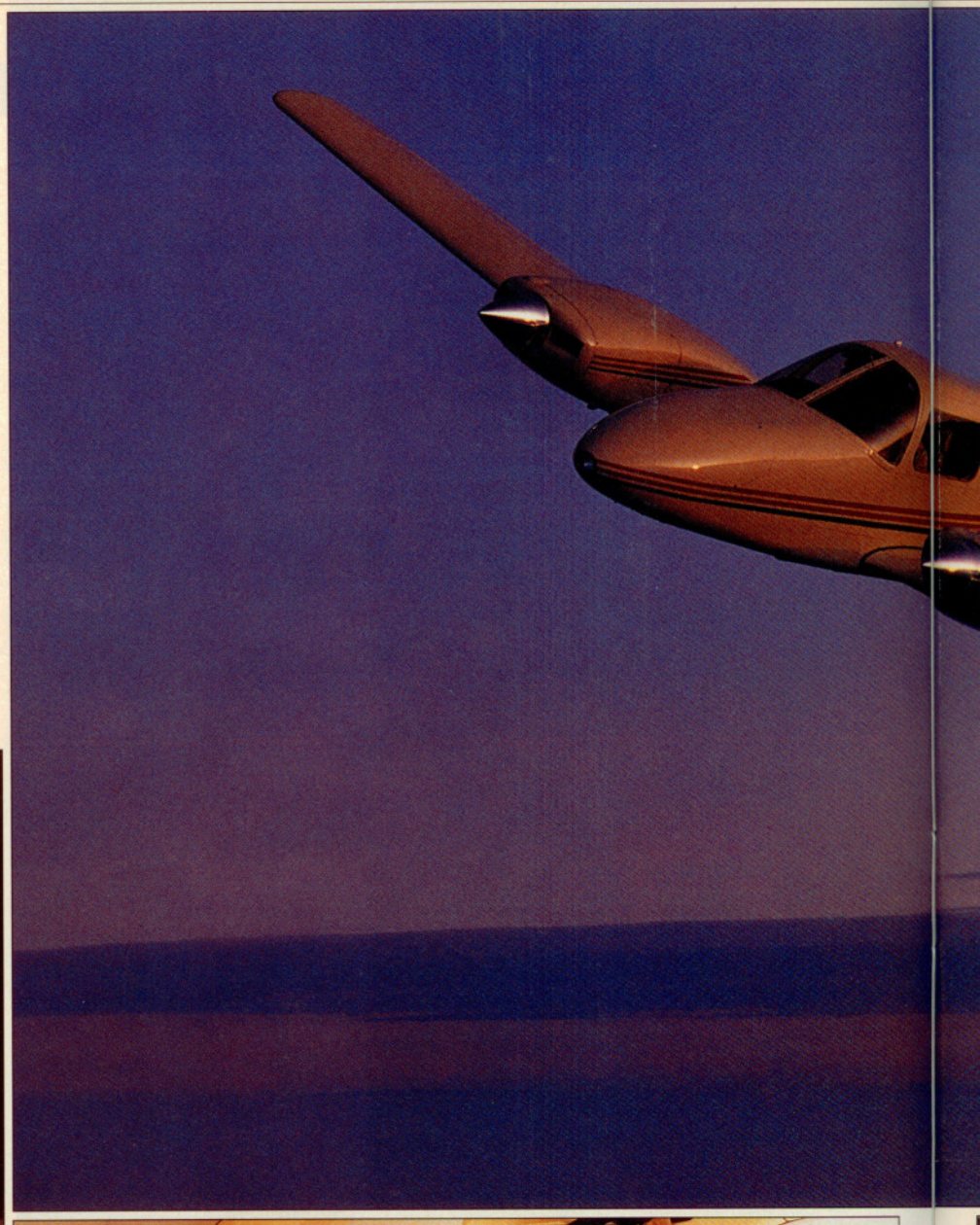
As a nuclear engineer, Beckman frequently makes the 40-minute flight from his home base at Rostraver Airport near Pittsburgh to Washington National to do contract work for the Department of Energy. In the Seminole, he easily beats the airlines, even without including waiting and parking time at each end when flying commercially. The airlines might make more sense when the destination is Phoenix, but the Seminole allows him to make side trips enroute for other clients—side trips that could add days if he were to rely on the commercial carriers. The Piper also allows him to carry enough luggage and equipment to stay on the job for several weeks at a time. His computer equipment and files often fill the airplane, meaning he regularly departs solo at near the turbo Seminole's maximum takeoff weight of 3,925 pounds.

Beckman typically flies the Pittsburgh-to-Phoenix trips at about 65-percent power on 19 to 20 gallons per hour and sees speeds from 160 to 172 knots, depending on altitude. He usually flies at 10,000 feet or less westbound to avoid the strongest headwinds and 11,000 to 15,000 feet eastbound. He conservatively plans IFR legs of 3.5 hours, giving him 1- to 1.5-hour reserves.

Unlike the PA–28 singles from

which it sprang, the Seminole doesn't carry its fuel in the inboard section of the wings. The engine nacelles on the twin occupy that space in the structure, so the Seminole carries 55 gallons of fuel in bladder tanks in the aft section of each of the nacelles. The two fuel drains are conveniently located just aft of the right wing, near the step; it beats climbing under a wing or the belly. While the outboard portions of the wing are identical to those on the 1977-and-later Arrows, and the empennage and fuselage are nearly identical, there are differences—most obviously in the nose, which, in the Seminole, carries a Janitrol heater and avionics equipment instead of an engine. Unfastening four screws allows the twin's nose to tilt down for ease of access. There is no nose baggage compartment.

In 1981, three years after introducing the Seminole, Piper, eying the owner-flown market, redesigned the



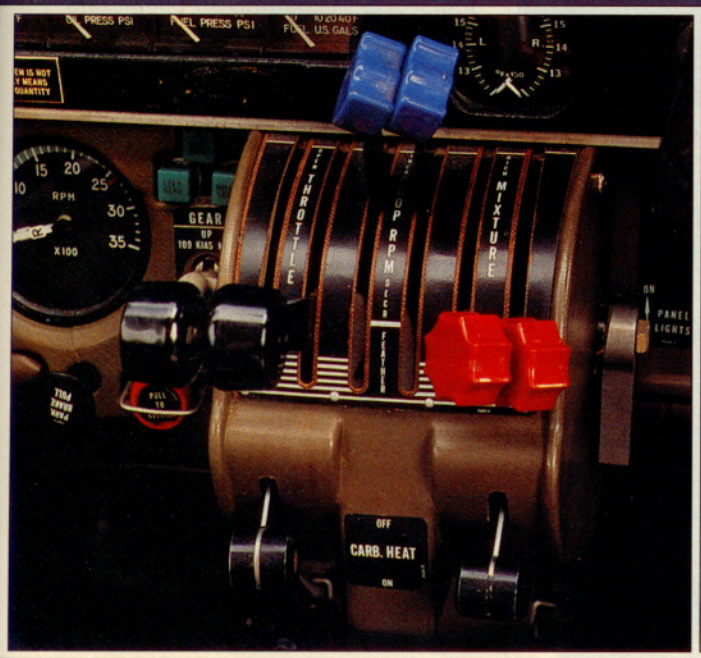
nose to permit the installation of weather radar. The turbo model was introduced in mid-1980, but the airplanes were considered 1981 models. The first 26 turbocharged Seminoles still used the old-style nose, which housed the landing light. To accommodate the radar antenna, the light was moved to above the nose gear.

In 1982, the last year of production until 1989, buyers could opt for heated propellers and wing deice boots, but few did. Built-in oxygen systems and three-blade props were more popular on the turbos.

Aside from the additional gauges and levers you'd expect in a twin, the panel is very similar to the Arrows of the era and full of the same human-factors oversights. For example, the manifold pressure gauge and tachometer are located above the pilot's right knee, blocked from convenient view by the yoke. Engine gauges are scattered across the bottom of the panel, again hidden by the yoke. The left side-wall panel is a confusing array of rocker-style light, fuel pump, and magneto switches. The letters silkscreened onto the switches eventually wear off, leaving the uninitiated pilot to guess just what it is he might be turning off or on.

Piper fixed many of the problems when it reintroduced the Seminole in 1989. Production of the original rendition ceased in 1982, after five years had passed and 467 aircraft had been delivered, including 87 of the turbocharged airplanes.

Sensing a need for new twin train-



ers and urged on in particular by the University of North Dakota, Piper in 1989 began spooling up production of the normally aspirated Seminole. Piper planned to build at least 100 aircraft, but the company's cash-flow problems soon caught up with it, and it managed to deliver only about a dozen, nine of them to UND.

In reintroducing the Seminole, Piper kept the Lycoming O-360 engines and the counterrotating Hartzell propellers and, for the most part, left the exterior alone. One UND-driven change was the addition of unfeathering accumulators. Accumulators ease airborne engine starts by using stored oil pressure in the hubs to windmill a propeller once the prop control lever is moved out of the feather position.

Inside, the earlier version's Royalite panel was replaced with a flat black metal panel. The mags and starter switches were moved to the lower left panel. The engine gauges were stacked just to the right of the yoke, and the tach and manifold pressure gauges were moved up for easier viewing. The light switches were moved to the right panel, but all the rocker switches still carry the silkscreening. Piper also added several new annunciators and made other small changes throughout. The new panel appears much cleaner and is designed to reduce pilot work load.

Don't expect to find one of the newer airplanes on the market. UND still has all it purchased, and according to Federal Aviation Administration records, only one of the airplanes is in the hands of a private owner.

To turbocharge or not to turbocharge is the question any prospective buyer of a used Seminole must ask. Many times, the question can be answered by one's wallet. The *Aircraft Bluebook–Price Digest* shows average retail prices of $77,000 for a 1981 turbo Seminole and $63,000 for a normally aspirated airplane of the same year. The turbo Seminole does offer a significant speed and payload increase over its normally aspirated brother, along with a single-engine service ceiling increase from 3,200 feet to 12,500 feet. Though the two will fly about side-by-side down low, at altitude the turbochargers add some 15 knots to the 75-percent cruise speed at optimum altitude (183 knots at 20,000 feet versus 168 knots at 8,000 feet; fuel burns are 24.2 and 22.4 gph, respectively), according to Piper. The turbochargers allow maximum takeoff weight to be increased 125 pounds, to 3,925 pounds. Empty weight increases by only 17 pounds with the turbochargers, to 2,435. With full fuel, that leaves 842 pounds for people and baggage: four of the FAA's 170-pounders and 153 pounds of baggage. Usually, though, empty weights will be higher. Beckman's airplane, which has an oxygen system and is typically equipped for IFR, including a fuel totalizer, IFR loran, and WX-8 Stormscope, weighs in at 2,675 pounds, leaving a payload with full fuel of 590 pounds—three people and bags.

The turbo Seminole, like the turbo Arrow, uses a fussy turbo system that requires careful attention on takeoff and in go-arounds to prevent overboosting. Overall, the Seminole handles much like an overweight T-tail Arrow. Like T-tail singles, the Seminole doesn't seem to want to leave the runway. A purposeful tug on the yoke finally brings the nose off and usually promises an overrotation as the tail

comes alive. While the T-tail arrangement leads to rather graceless low-speed handling, it does make for fewer trim changes during power and configuration changes. Extending or retracting gear or flaps, for instance, requires almost no trim change.

You can land a Seminole like an Arrow, using only slightly higher speeds to account for the greater gross weight, but it really does much better when landed like a twin ought to be, with a bit of power and a flat approach.

When shopping for a Seminole of your own, remember where it may have been used. The list of airworthiness directives and service difficulty reports reflects the Seminole's primary role as a trainer. Cracked engine mounts and plenty of reports of cracked and broken landing-gear components lead the list of SDRs. The most significant ADs, meanwhile, affect the ailerons, requiring various inspections, modifications, and reinforcements of the aileron push rods and surfaces.

There are no surprises when examining the airplane's accident record statistics, as compiled by the AOPA Air Safety Foundation. From 1982 through 1989, there were 28 Seminole crashes, three of them fatal. As might be expected of training aircraft in particular, half of all the accidents occurred during the landing phase, usually as a result of landing hard or not extending the landing gear. Fuel exhaustion led to two accidents.

The accident types show that the airplane itself has few bad habits. As in many cases, it's the pilot, not the aircraft, who makes the mistakes. For the traveler who can learn from those mistakes, the Seminole offers a lot of utility packed into a fuselage design with 30 years of experience. Any pilot with a multiengine rating and time in a PA–28, particularly an Arrow, will quickly feel at home in the cockpit, and if you have no multiengine rating, the Seminole is a great airplane in which to get one. □

Piper PA–44-180 Seminole

Average equipped price, new (1979–1982): $105,200–$169,640

Current market value: $60,000–$88,500

Specifications

Powerplants	Two counterrotating Lycoming O(L)-360-E1A6D, 180 hp @ 2,700 rpm
Recommended TBO	2,000 hr
Propellers	Hartzell, two-blade, 76-in diameter
Seats	4
Cabin length	8 ft 6 in
Cabin width	3 ft 5.5 in
Cabin height	4 ft 1 in
Empty weight	2,418 lb
Max takeoff weight	3,800 lb
Useful load	1,382 lb
Payload w/full fuel	734 lb
Fuel capacity	110 gal (108 gal usable)
Baggage capacity	200 lb, 24 cu ft

Performance

Takeoff distance, ground roll	1,185 ft
Accelerate-stop distance	2,780 ft
Rate of climb, sea level	1,220 fpm
Single-engine ROC, sea level	217 fpm
Max level speed, sea level	167 kt
Cruise speed/endurance w/45-min rsv, std fuel (fuel consumption, ea engine)	
@ 75% power, best power 8,000 ft	168 kt/3.9 hr (11.2 gph)
Service ceiling	16,000 ft
Single-engine service ceiling	3,200 ft
Landing distance, ground roll	830 ft

Limiting and Recommended Airspeeds

V_{MC} (min control w/one engine inoperative	56 KIAS
V_{SSE} (min intentional one-engine operation)	82 KIAS
V_{S1} (stall, clean)	57 KIAS
V_{SO} (stall, in landing configuration)	55 KIAS

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.