



Budget Buys

Tribal chief

Comanche 250: The most popular of Piper's Indians

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PHOTOGRAPHY BY MIKE FIZER

The ideal high-performance used single? For many pilots, Piper's Comanche 250 fills the bill. With good looks, a 157-knot cruise speed, a 14- to 15-gallon-per-hour fuel burn, a 1,000-nautical mile range (with the 90-gallon fuel system), and a current market value in the area of \$55,000 to \$70,000, this airplane offers a lot of bang for the buck. It may be 10 or so knots slower than a V-tail Beechcraft Bonanza of the same vintage, but its price tag runs tens of thousands less.

Genesis and context

The Comanche line debuted in 1958, with the Comanche 180 and 250 models. These two models remained in production

until 1964. Subsequent Comanche models—both single- and twin-engine—were built until 1972.

The 180 came with a carbureted 180-horsepower Lycoming O-360 engine, had a 140-kt cruise speed, and went out the door for \$18,000 or so. The Comanche 250 was its big brother. Its 250-hp Lycoming O-540 engine gave this airplane a 20-kt advantage over the 180, and yet the 250's average-equipped price was only \$4,000 more—but \$8,000 less than a brand-new Bonanza J35, which was the whole point. The Comanche was designed to steal sales from the Bonanza, and the tactic worked—even though Comanche 250s cruised some 17 kt slower.

The result? Comanche 250s sold like hot cakes. By the time its production run ended, some 2,500 Comanche 250s had been sold. This made it the biggest seller of all the Comanches, Twin Comanches included.

The Comanche singles brought Piper into the modern era. Before 1958, Piper built its reputation on slow tube-and-fabric airplanes with cutesy names and pre-World War II design philosophies. The all-metal Comanches, with their laminar-flow wings, retractable landing gear, stabilators, and greater interior comfort than any previous Piper, put the company in competition with the high-performance singles from Beechcraft, Cessna, and Mooney.

Comparisons with the Bonanza were inevitable—and unfortunate. Because the Comanche 250 and its stablemates were slower and less expensive, they were soon dubbed “the poor man’s Bonanza.”

Flying impressions

The Comanche 250 has nice handling characteristics and is very easy to fly.



Roll response is sprightly, and the airplane’s all-flying stabilator keeps trim forces easy to manage. A few hours in the cockpit and you’re pretty much at home. It’s important to remember that Comanches are slippery. If you’re ac-

customed to Cessna singles, you’ll be sure to notice that speed reductions will take some time and require some advance planning. Of course, this makes itself most evident in the landing phase. The 250’s pilot’s operating handbook recommends 82 mph/71 kt as a final approach speed, but if you’ve been doing 90 kt on base you’ll be busy lowering flaps, S-turning, or using other techniques to both go down and slow down safely.

Most of the grumbling you hear about Comanches has to do with landings. Close to the runway, those laminar-flow wings ride deep in ground effect. If you’re too fast, the airplane can float and float while you bleed off airspeed. Impatient pilots who try to force the airplane onto the runway at too high an airspeed can easily find themselves rewarded with wheelbarrowing on the nosewheel. The airplane has a large nosewheel (actually, it’s the same size as the main gear) and, together with the main gears’ stubby struts, the landing-gear geometry lends itself to nosewheel-first arrivals, premature liftoffs, and

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This pristine Comanche 250 is a blend of old and new. Original instruments merge with a full UPS Aviation Technologies stack, a Century 2000 autopilot, and much more. The trademark Piper control yoke of the 1950s to 1970s—the “square pretzel”—features the Comanche logo, a streamlined bird cruising among the stars.

wheelbarrowing. The moral: Make sure you're at the proper airspeed and attitude the moment you touch down. Like Mooneys, Comanches can be cruel to the sloppy.

System quirks and gotchas

Comanche systems reflect the airplane's 40-plus-year-old design ethos. There are plenty of traps for the unwary, and much to learn. Here is a brief sampling of some system idiosyncrasies.

- Landing gear. Comanche 180s and 250s built before mid-1959 have landing-gear control switches that move up or down without an overcenter cam. You don't have to pull aft on the switch in order to move it. There is a mechanical switch guard, but it's still possible to inadvertently raise the landing-gear control.

After an emergency gear extension, there is no positive downlock for the



landing gear. The overcenter movement of the gear's drag links, the pull of bungee cords, and the nose-gear springs are the only forces holding the gear down.

To help prevent the gear from collapsing, landing-gear bushings must be inspected every 1,000 hours for excessive wear. Bungees must be inspected, and replaced if necessary, annually and

at 500-hour intervals. (These items are covered in an airworthiness directive—AD 77-13-21.)

- Fuel system. Rubber fuel bladders can rot with age and exposure to the sun and high temperatures, causing pinhole leaks. The cells also can wrinkle or collapse, making them impossible to fill to their rated fuel capacity. Also, as a cell collapses, fuel quantity indicators



Comply with a 1972 airworthiness directive and your Comanche 250's V_{NE} jumps from 175 to 197 knots. This requires that balance weights be added to the stabilator tips, and that the stabilator's innards get a beef-up. Why all the fuss? Unmodified Comanches could experience tail flutter at high speeds. Most Comanches have had the fix installed by now.

Professional help

The International Comanche Society (ICS) is an indispensable source of information concerning maintenance and other issues involving all Comanche models. The ICS publishes a monthly magazine—*Comanche Flyer*—that's full of advice. ICS technical advisor Maurice Taylor has earned a worldwide reputation as a Comanche maintenance guru, and ICS members can benefit from his wise counsel. ICS dues are \$64 for the first year, \$60 a year thereafter.

Another ICS publication—*Tips Special*—is a fat compilation of a wide variety of highly specialized, need-to-know maintenance and safety items, reviewed by an ICS technical committee. It costs \$45.

For more information about the ICS, visit the Web site (www.comancheflyer.com); write them at ICS, Hangar 3, Wiley Post Airport, Bethany, Oklahoma 73008; or telephone 405/491-0321.

For a detailed analysis of Comanche accident trends and individual accidents, order a copy of the AOPA Air Safety Foundation's *Piper Comanche and Twin Comanche Safety Review* from Sporty's Pilot Shop at 800/LIFTOFF or online (www.sportys.com).

Hits and misses

Hits

- Good looks.
- Low acquisition cost.
- Comfortable cabin.
- Excellent control feel.
- Good combination of speed and payload.
- For a 250-hp engine, a commendable fuel burn.
- Many available aftermarket mods—from tip tanks to speed mods to modern GAMA-format pilot's operating handbooks.
- Strong support organization.

Misses

- Many recurrent ADs.
- High-maintenance fuel and landing-gear systems.
- Limited visibility.
- Difficult to consistently land well.
- Wheelbarrowing tendency during takeoffs and landings.
- Nonstandard panel and power control layouts.
- Older airplane means corrosion potential.
- Air leaks around door seals.

can give dangerously misleading information. Fuel indicator floats can rise higher and higher because the shrinking cell forces what fuel there is into a smaller and smaller space. Water also can be trapped in the wrinkles of a collapsed or unsnapped fuel cell, making it impossible to drain or detect.

The fuel sump draining routine was designed to let the pilot drain the fuel tanks without crawling under the wings with a sample cup. Sumps are drained from the cockpit by pulling on a single drain knob and using the fuel selector to select the tank to be drained. A clear plastic tube (which can yellow to opacity with age) shows the fuel flowing through the drain line, but the only way to make a complete inspection of the sump contents is to—you guessed it—crawl under the belly of the airplane and put a suitable container beneath the single fuel drain line's exit.

In early 250s, there was a separate fuel gauge for each fuel tank. Later models used a single gauge that showed the fuel level in the tank corresponding

to the fuel selector position. Small, recessed red buttons in the fuel selector body let you display fuel indications in tanks other than the one selected.

Piper recommends that Comanche 250 fuel selectors be removed, cleaned, and lubricated every 400 hours.

1959- and 1960- model year Comanche 250s come with 60-gallon fuel tanks as standard equipment; 90-gallon tanks were optional. The 90-gallon tanks are standard in the 1961 to 1964 models.

- **Engine.** Comanche 250s with engines having standard-size 7/16-inch valve stem diameters have a 1,200-hour recommended time between overhauls (TBOs). If a modification is made to install larger one-half-inch valves, the O-540's TBO climbs to 2,000 hours. Most airplanes have had this modification performed by now, but it's worth checking.

Oil lines should be inspected regularly for signs of wear. Chafed and cracked oil lines have caused a number of in-flight engine failures.

Early 250s had carburetor air filter boxes fitted with internal vanes. These

The protection offered by the dry desert air preserved the airplane in like-new condition. The “Palm Beach” interior and paint scheme are original, right down to the side window curtains and red leather seats.

vanes could come loose and get sucked into the carburetor, causing partial or complete power loss. Owners and prospects should make sure that AD 64-10-04 is complied with. This mandated a new vane design, but Piper recommends that the air box be inspected at 50-hour intervals anyway.

- Airframe. AD 72-22-05 addresses tail flutter issues in Comanche 250s. Comply with it and a 202-mph/175-kt V_{NE} restriction is raised to 227 mph/197 kt. Compliance involves adding balance weights to the stabilator tips and strengthening the internal stabilator structure.

Prospective buyers should also check to make sure that other airframe ADs have been complied with. These include inspection—and sometimes replacement—of stabilator attach points, stabilator attach rivets, and stabilator torque tube bearings. Other ADs require inspection and repair of any cracks in the aileron spars and vertical fin.

Early Comanche 250s have mechanically actuated flaps, and use a large hand lever between the front seats. After 1962, electric flaps were installed.

The 1958 and 1959 models don't have toe brakes; these were made an option in 1960. Instead, there is a hand-brake lever to the left of the power controls. Pull on it, and both main gear brakes are activated. There is no differential braking, so ground turns have to be accomplished using power and lots of rudder.

The market says...

Comanches may have looked like the future in 1958, but now they're showing their age. The Comanche 250 is no exception. The price you pay today depends more on condition than model year, according to *Vref*, an aircraft value reference guidebook.

There are some real beaters out there that could go for as little as \$35,000 to \$45,000, but be prepared for some restoration work—and expect a high-time engine. On the other hand, a cream puff in like-new condition with



nothing broken, full AD compliance, complete logbooks, and a low-time engine can fetch as much as \$90,000. If the panel's been totally fitted out with the latest avionics, then expect to pay much more.

One of a kind

One day in 1962, C.S. Hejkal of Dallas bought a new Comanche 250—N8071P. He flew it for 350 hours, then parked it in a hangar at an airport in West Texas. There it stayed, until two Nashville pilots—Kirby Totty and James Simons—bought it a year ago.

The protection offered by the hangar and the dry desert air preserved the air-

plane in like-new condition. The “Palm Beach” interior and paint scheme are original, right down to the side window curtains and red leather seats. Totty, an aircraft broker and A&P mechanic, gave the engine new cylinders, fuel pumps, magnetos, and Lord mounts; overhauled the carburetor; and installed a smaller nosewheel (a modification designed to prevent wheelbarrowing). Inspections of the airframe revealed no corrosion.

Then the avionics got a huge upgrade. Out went the vintage Narco Mark V nav/com. In went a UPS Aviation Technologies suite: a GX50 GPS receiver, an MX20 multifunction display unit,

SPECSHEET

1962 Piper PA-24-250 Comanche

Price as new: \$21,990

Average current Vref value: \$55,000 to \$70,000

Specifications

Powerplant	Lycoming O-540-A, 6-cyl, 250-hp @ 2,575 rpm
Recommended TBO	2,000 hr
Propeller	Hartzell two-blade, constant speed, 77-in dia
Length	24 ft 10 in
Height	7 ft 5 in
Wingspan	36 ft
Wing area	178 sq ft
Wing loading	16.3 lb/sq ft
Power loading	11.6 lb/hp
Seats	4
Cabin length	9 ft
Cabin width	3 ft 9 in
Cabin height	3 ft 11 in
Standard empty weight	1,690 lb
Max gross weight	2,900 lb
Max useful load	1,210 lb
Max payload w/full fuel	670 lb
Fuel capacity, std	90 gal (84 gal usable)
Baggage capacity	200 lb, 20 cu ft

Performance

Takeoff distance, ground roll	1,180 ft
Takeoff distance over 50-ft obstacle	1,675 ft
Max demonstrated crosswind component	17 kt
Rate of climb, sea level	1,350 fpm
Cruise speed/range w/45-min rsv, std fuel (fuel consumption)	

@ 75% power, best-economy mixture, 7,000 ft
.....157 kt/897 nm
(14.0 gph)

@ 65% power, best-economy mixture, 10,000 ft
.....154 kt/1,000 nm
(12.3 gph)

Service ceiling.....20,000 ft
Landing distance over 50-ft obstacle1,420 ft
Landing distance, ground roll920 ft

Limiting and Recommended Airspeeds

V_R (rotation)	74 KIAS
V_X (best angle of climb)	74 KIAS
V_Y (best rate of climb)	91 KIAS
V_A (design maneuvering)	123 KIAS
V_{FE} (max flap extended)	108 KIAS
V_{LE} (max gear extended)	129 KIAS
V_{LO} (max gear operating) Extend	129 KIAS
Retract	129 KIAS
V_{NO} (max structural cruising)	157 KIAS
V_{NE} (never exceed)	199 KIAS
Final approach speed	71 KIAS
V_{S1} (stall, clean)	63 KIAS
V_{S0} (stall, in landing configuration)	56 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.

and two SL30 nav/coms. A Century 2000 autopilot and altitude alerter were also added. Now this rare airplane is a strong blend of the old and new. Photographs of Totty and Simmons' airplane accompany this article, and prove this 250's prize-winning status.

Bottom line

Comanche 250s like N8071P are rare birds indeed. Most are well-worn. Recurrent ADs and other aging-airplane issues keep the cost of annual inspections up. On the other hand, the Comanche 250 promises comfort, cruise speeds, and good looks comparable to other single-engine retractables costing much, much more to buy and operate.

For those willing to handle the maintenance and invest in avionics upgrades, the result can be an exemplary classic airplane. And one of the best-looking Piper singles ever built. **ACFA**

i Additional information about the Piper Comanche can be found on AOPA Online (www.aopa.org/pilot/links.shtml).

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