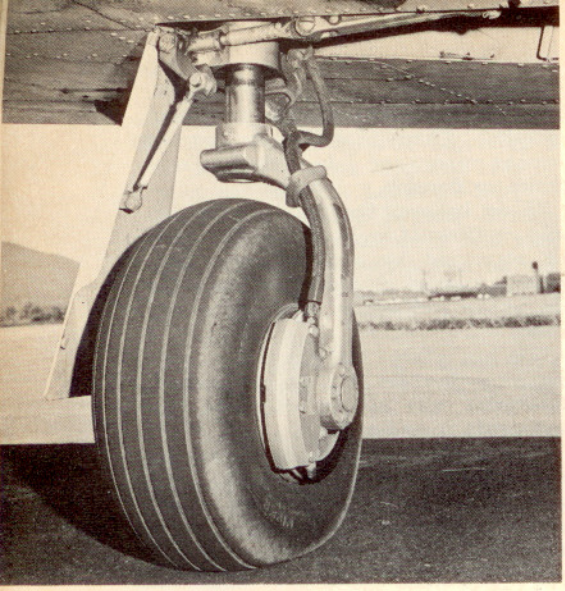
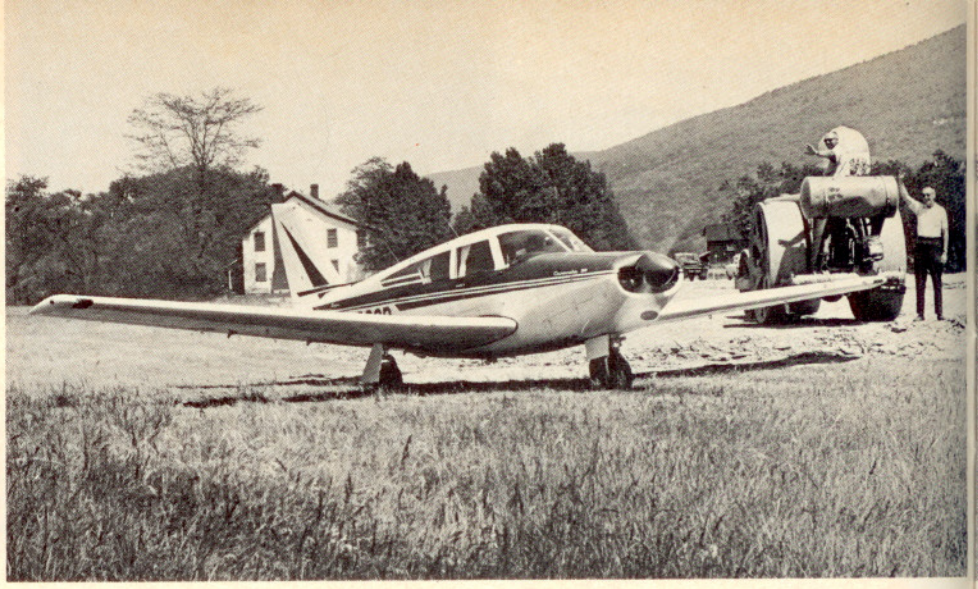


One reason for the increased performance of the Comanche 260 is the single-fork main landing gear strut, which when retracted greatly reduces drag. A feature of the 260 is the very short main landing gear strut with full travel oleo shock absorber



Buyers of the 1965 Comanche 260 have the choice of either carburetor or fuel injection for the 260 h.p. Lycoming engine. Author Karant reports that the fuel-injection model he flew operated without a hitch. It has a top speed rating of 193 m.p.h. and a service ceiling of 20,600 feet. Note the new up-swept rudder profile

Piper's Latest Comanches

New features of Comanche 400 expected to improve its competitive position in the Piper line. More powerful Comanche 260, which replaces the 250, comes with either carburetor or fuel injection

by MAX KARANT • AOPA 18

Piper has drawn another pair to its already well-filled power hand—the *Comanche 400* and *Comanche 260*. Both are very much alike internally, and both represent a considerable improvement over the original *Comanches*. Of the two, the 260—which has replaced the 250 in Piper's line—is the best seller. The 400 has not sold as well as they'd hoped, probably for two reasons: price competition from their own *Twin Comanche*, and the fairly widely known hot weather troubles with the fuel injection in the Lycoming IO-720-A1A engine. Bendix and Piper think they have cured the bugs now, and kits will be available shortly.

Most interesting of the two factors probably plaguing the 400 is that of the price competition with the *Twin Comanche*. Basic list price of the 400 is $28,750. That of the *Twin Comanche* is $33,900—just 18% more, for a twin that has performance not quite as good as the 400, but certainly high enough to warrant the sacrifice for the second engine. In any event, the *Twin Comanche* has been selling in about the same manner as the Volkswagen, with people in some parts of the country still waiting for delivery. Since production of the *Twin Comanche* started on April 1, 1963, Piper has delivered 700. Production of the 400 started in April of this year, and only 150 have been delivered to date.

Nevertheless, I have the feeling that the 400 will catch on somewhere along the line, once enough pilots realize that this is a true long-range, high-performance single-engine hot rod, a "poor man's *Mustang*."

About the only way you can describe the 400 is that it's quite some airplane —with special emphasis on the "quite." Just its specifications are impressive. At about 70% power it cruises over 210 m.p.h. and (with reserve fuel, for 130 gallons total) can fly that way nonstop for 06:30. With 30 minutes' reserve, that's 1,260 miles nonstop. Put that another way and it's coast-to-coast with one stop, or nonstop New York-Nassau, Atlanta-Albuquerque, Miami-Curacao, Sacramento, Calif.-Ketchikan, Alaska; New Orleans-Kingston, Jamaica; Jacksonville, Fla.-San Juan, P.R.; Chicago-Halifax, or Dallas-Nassau. Not long ago a 400 ferried to Europe turned in some impressive statistics. Carrying a total of 217 gallons (just 87 gallons more than the normal 130, carried in a temporary cabin tank), the 400 flew the 1,736 n.m. from Gander, Newfoundland to Shannon, Ireland in 08:24, for an average ground speed of 206.7 knots (about 238 m.p.h.). The pilot got a 35-knot tailwind and used long-range cruise at 14.4 g.p.h., or about 50% power for the first half of the flight, 60% for the last. If he had had no tailwind at all, the pilot would have made the same flight in 10:07 and landed in Ireland with enough fuel for another 04:57 of flying. Matter of fact, if the pilot could have been sure of that 35-knot tailwind, he could theoretically have made it to Ireland on the plane's standard 130 gallons, and had nine gallons left.

With 130 gallons the 400 also can carry four people and 30 pounds of baggage and still be legal. With three people, of course, there's room for 200 pounds of baggage. All of which points up the fact that the 400 is a very long-legged airplane, as I learned for myself while flying the production prototype, N8401P. I made one flight nonstop from Lock Haven, Pa. to Vero Beach, Fla., in 05:30 using 65% power, used 94 gallons, for an average of 17.1 g.p.h. (the Lycoming chart calls for 18 g.p.h. at 65%).

Piper's true airspeed indicator is a great help to the pilot in keeping track of the plane's performance. Once set for the plane's altitude and outside temperature, it's easy to take numerous readings without fumbling with a pocket computer. I noted several true airspeed checks. One, at 9,500 feet,

Karant finds the new Comanche 400 "quite an airplane." At 70% power it cruises over 210 m.p.h. and can fly 1,260 miles with 130 gallons, allowing 30-minute fuel reserve

COMPARISON OF COMANCHE 400, COMANCHE 260 AND S-35 BONANZA

	COMANCHE 400	S-35 BONANZA	COMANCHE 260
Engine	400 h.p. Lycoming	285 h.p. Continental	260 h.p. Lycoming
Gross weight (lbs.)	3,600	3,300	2,900
Empty weight (lbs.)	2,110	1,885	1,700
Wing span (ft.)	35.98	33.46	35.98
Wing area (sq. ft.)	178	181	178
Length (ft.)	25.7	26.38	24.99
Height (ft.)	7.83	6.54	7.47
Power loading (lb./h.p.)	9	11.58	11.15
Wing loading (lb. sq. ft.)	20.22	18.23	16.3
Fuel capacity standard (gal.)	100	50	60
Fuel capacity with reserve (gal.)	130	80	90
Top speed (m.p.h.)	223	212	195
Optimum cruise speed (m.p.h.)	213	205	185
Stall speed (power off, flaps down)	68	62	61
Best rate of climb speed (sea level, m.p.h.)	120	100	110
Rate of climb (sea level, ft./min.)	1,600	1,200	1,500
Service ceiling (ft.)	19,500	18,300	20,600
Absolute ceiling (ft.)	21,000	20,000	22,000
Fuel consumption (75% power, gal./hr.)	20.1	15.5	14.1
Fuel consumption (65% power, gal./hr.)	17.9	18.1	12.7
Max. cruising range (75% power, mi.)	1,320	925 (7,000 ft.	730 (7,000 ft.)
Max. cruising range (65% power, mi.)	1,425	1,016 (10,000 ft.)	785 (10,000 ft.)
Max. cruising range (55% power, mi.)	1,540	1,145 (45%-10,000 ft.)	825 (15,400 ft.)
Base price	$28,750	$28,750	$22,600

showed a true airspeed of 212 m.p.h. @ 70% power. At 8,500 feet, using 65% power, true airspeed was 204. On another flight, a check at 9,500 feet at 65% showed 208 m.p.h. Sometimes I was close to maximum gross, other times I was lightly loaded. The 400 shows these differences in its airspeed readings; it took me some time to get used to trimming the plane accordingly.

There's quite a bit of trimming to be done on the 400, and Piper has come up with an excellent aid for the pilot—an electric trimmer. Piper calls it PET (for Piper Electric Trim; why not "Electrim"?). The overhead crank is still there, in the cabin roof. But on the pilot's control wheel is a little spring-loaded button which, when held down by the pilot, neutralizes the pressure on the elevator. So if you pull back on the wheel, for example, and hold down that button, the automatic trimmer will immediately crank the elevator trim until the pressure you've been holding on it is neutralized. I found this gadget especially worthwhile during landings. The 400 has a big long nose, what with that eight-cylinder engine and its three-bladed prop there. And that nose is heavy. You don't just come in on approach and gently hold the wheel back to land on the back wheels first, then let the nose wheel settle to the ground.

Quite the contrary. I made a couple of nosewheel-first landings before I found out that the trick is full back trim. After that I had little trouble just holding the glide in approach and then, just off the end of the runway, start holding down the trim button and holding a little back pressure. This ends up holding the nose just slightly off the ground as the back wheels hit. But, once they touch, the nose wheel comes down immediately.

That automatic trimmer is helpful in level flight too, because you can always be sure there's no up or down pressure on the elevator before engaging the autopilot. Proper trim is quite important in the 400, perhaps more so than other contemporary general aviation planes. Just a little carelessness can cost you valuable speed. Piper estimates, for example, that the 400 gains about 2 m.p.h. for each 100 pounds the weight is reduced. That means 01P was 11.3 m.p.h. faster for the same power as I approached Vero Beach after 05:30 of flying.

Piper has done an excellent job of making the 400's interior appealing to everyone, particularly to women. Also, they've adopted many of the excellent features originally developed for the *Twin Comanche*: much better soundproofing, a new ventilating system, the rakish swept tail (which means nothing aerodynamically but looks good). But there's still work to be done on quieting the ventilation system. The rest of the noise now is so low, and the new ventilators in the forward part of the cabin so effective, that the loudest noise inside the 400 now is the rushing air. One tower controller even commented that he could hear the roaring in the background of my transmissions.

The seats are among the most comfortable in general aviation. Wall-to-wall carpeting is deep and attractive, and Piper has paid close attention to such little things as arm rests, head rests, ash trays and extra pockets in the seat backs and cabin walls. Night lighting—particularly that using the little red Glare-Ban lights over each instrument—is excellent. One novel addition is a red metal flap that lies flush on top of the instrument panel, directly in front of the pilot. If, on an approach, the gear is not down as the pilot reduces power beyond a certain point, that flap suddenly pops up into a vertical position, displaying a good-sized sign: "LANDING GEAR UP." This is in addition to the normal green and amber gear lights in the panel.

Normal rate of climb is at 120 m.p.h. indicated, using 25 inches and 2,500 r.p.m. I made one 2,000-foot climb straight ahead from takeoff at sea level at an average of 1,000 f.p.m. On a second such climb I averaged 1,110 f.p.m. Stall with gear and flaps up was at 78 m.p.h. indicated; with gear and flaps down it was 68. You always use

flaps (15°) for takeoff.

The fuel-injection problem with the 400 was driven home to me on the ground at El Paso. I was to take O1P back to Lock Haven. It was a fairly warm day, and the plane had been flown within an hour prior to my departure. Knowing this, I went through the "hot start" ritual. No dice. Return everything to neutral and start all over again. No dice. Get out the external battery cart. Still no dice. Then two Piper factory men try it. No dice. Pretty soon they spot a Bendix factory man and he comes over for a crack at it. No dice. There's talk about dirt in the injectors, maybe checking the plugs. Finally decide among them to let it sit a few minutes. Then—same thing again. Jackpot! After about a 20-minute delay. Piper's quite sensitive to all this, as well they might be. There's been a lot of head-shaking privately about the fuel-injection problems, but it looks now like they're finally on top of most of it. The 400-h.p. Lycoming itself is doing well. It's already authorized to go 1,000 hours between overhauls. It's an expensive engine: $7,648 new, $6,580 new exchange and $5,360 remanufactured exchange, according to Lycoming's service department.

Comanche 260

Devotees of the earlier *250 Comanche* will revel in this latest version of the famed single-engine plane. It has most of the same improvements reported in the above comments on the *400 Comanche:* excellent soundproofing, better ventilation, more eye-appeal. Like the ventilating system in the 400—and in the *Twin Comanche* as well—this one is quite noisy in mid-summer, with everything open in flight. A *Comanche* owner told us the other day that, until Piper figures out a quieter system, he's doing what a Cessna owner told him proved to be a solution to his Cessna system's noise: stuff little steel-wool pads in each intake. This apparently slows down the air just enough to make the cabin appreciably quieter.

The 260's IO-540 is the same basic Lycoming that was in the 250, with 10 more horsepower. It's also available with either fuel injection (the "I" in IO-540) or carburetor. The ship I flew for this article—N8499P—had fuel injection. I had no trouble whatever with starting; it worked fine, either hot or cold. But it is interesting that Piper is being cagey with this one, and offering carburetors to anyone disenchanted with fuel injection. Piper's also working on a carburetor version of the *Twin Comanche.*

The 260 at gross weighs 700 pounds less than the 400, and you can tell the difference. Both are the same basic airframe, but the 260 is noticeably lighter and more maneuverable. Normal fuel for the 260 is 60 gallons, with 90 available as optional. Here again, Piper has given its plane long legs. At 75% power this engine is rated at 14.1 g.p.h., which gives the 260 06:24 range on 90 gallons. At 65% and a true airspeed of about 178 m.p.h., the maximum range on 90 gallons goes up to 1,205 miles; it's 1,265 at 55%. Fuel consumption at 65% is 12.7 g.p.h.; at 55% it's 11.4.

There's a U.S. Navy speed course marked out on the east shore of Chesapeake Bay not far from Washington, which I use occasionally for speed runs. I made a few there with 99P, five at 65% power and two at full throttle. The speed course is one nautical mile, lies roughly north-south, and there was a quartering crosswind. Here's a table I made:

Direction	Seconds	GS (K)	Power	Altitude
S	24	150	65%	1500
N	28	128.5	"	"
S	24	150	"	"
N	27.5	131	"	"
S	24	150	"	"
N	24.5	147	FT*	1000
S	21.6	166.5	"	"

* 25 in., 2400 r.p.m.

This ship was equipped with Piper's (actually, Mitchell) Altimatic II autopilot, as was the 400. That in the 400 was out of kilter, but the one in the 260 worked fine.

The 260 retains the *Comanche's* excellent stall characteristics, and stalled at 63 m.p.h. indicated with flaps and gear down. It also has Piper's new gear-warning flap that pops up in front of the pilot if the gear's not down when power is reduced. At 500 pounds under gross, 99P climbed 1,060 f.p.m. from takeoff (at 50 ft. above sea level) to 2,000 ft., using 25 inches, 2,400 r.p.m. and an indicated airspeed of 120 m.p.h.

Piper is moving from generators to alternators, and herein appears to lie a problem. Alternators develop much-needed electrical power when the plane's engine is idling. But alternators also develop noises of their own, and the problem hasn't been solved yet. The noise comes through the audio system of the plane's radios, and in 99P it was so nerve-wracking that the only solution was to turn off the audio whenever I was not using it. The noise is in the form of a high-pitched squeal or whistle, and sounds something like the nerve-jarring screech of a turboprop heard from the outside. In 99P the pitch of the noise changed in direct proportion to the r.p.m. of the plane's engine. Turning down the volume controls of the radio receivers had no effect; the audio switches to the speaker had to be turned off. Piper doesn't like this characteristic either, and they're hard at work on a filtering system.

Piper sells its planes with a base price, with optional packages or "operational groups" as they call them. Base price of the 260 is $22,600, and 99P had the "Executive 223" operational group added ($8,280), bringing 99P's total price to $30,880. The "Executive 223" package includes a full IFR instrument panel, two Narco Mark 12's, a Bendix ADF, marker beacon, rotating beacon, heated pitot, Glare-Ban instrument lights, Piper's excellent true airspeed indicator, complete autopilot, that electric trim and auxiliary fuel. ●