Pilot Flight Check:

The '74 Cherokee Pathfinder

In 10 years of manufacturing the 235-hp model, Piper has continued to make a good product better

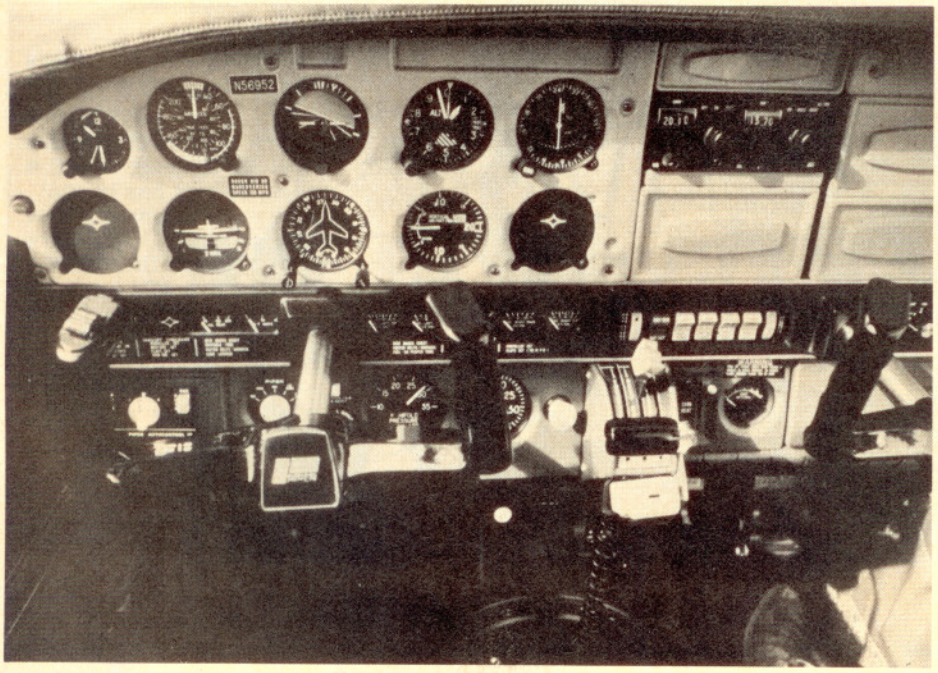
by BILL WILSON / AOPA 401373

■■ When the first example of Piper's new Pathfinder (originally the Cherokee 235, and briefly the Cherokee Charger), rolled off the painting turntable into the Florida sun, it marked 10 full years of the airplane's manufacture.

This Cherokee has had plenty of time to get the bugs out. Fortunately, Piper viewed development of the aircraft as Volkswagen did the nurturing of its Beetle: leave the outside alone and work on the inside, figuratively speaking.

One place far inside that needed perhaps the most improvement was in dampening the workhorse's noise. As one who has spent more deafening hours behind the yoke of a Cherokee 235 than I can unclog my head to remember, I can say that the soundproofing option Piper is offering this year is one no Pathfinder should leave the factory without. Cabin noise is cut considerably, and a comfortable conversation can be had even at 75% power. (Screaming along at 75% power in my 1964 Cherokee 235 seems only slightly less noisy than flying a 55-gallon drum through a hailstorm.)

The soundproofing costs an extra $175 and adds 18.1 pounds to the aircraft's empty weight. Overall gross in the Pathfinder has been upped 100 pounds to an even 3,000, but the useful load is only 11 pounds greater than that of the 1964 vintage model. With improvements, apparently, goes a weight penalty.



Pathfinder's color-keyed panel is laid out in the standard T-scan pattern, with engine controls grouped neatly in the center quadrant.

Pathfinder over Vero Beach. Photos by the author.

Piper has put just over 1,600 examples of this aircraft into circulation since production began in 1963. This particular model has become widely appreciated by people who want a retractable's speed without higher insurance costs and gear maintenance—plus a tough, load-carrying, tight-field performer that will hold four adults, baggage to the gills, and full fuel, and travel 800 miles nonstop.

But there are drawbacks to the 235. A perennial complaint is that the airplane's Lycoming IO-540 is brutal on fuel consumption. A saving grace is that the engine is set up to burn 80/87 octane, making the Pathfinder's final cost per mile surprisingly acceptable. If you get into a pinch, the engine happily guzzles 100 octane, as it did on my return ferry flight from Vero Beach to Indianapolis. The IO-540 is the same powerplant, derated, that delivers 300 hp in such aircraft as the Cherokee Six.

Piper's theoretical operating-economics schedule shows the Pathfinder can operate 600 hours and 88,200 miles annually at a cost per mile of 9.4 cents, figuring direct and indirect (hangar, insurance) hourly costs. Naturally, a prospective buyer should run his own numbers.

The new Pathfinder flies somewhat differently from the smaller Cherokees. The airplane requires a bit more speed and power in landings, and the pilot should be cognizant of the extra fuel weight from the 34 more gallons aboard. Otherwise, the exceptional performance in climbout, short-field work, and cruise speed are obvious benefits of those two extra cylinders up front.

The new 235 my wife, Joni, and I picked up at Vero Beach for the thousand-mile trip back to Indiana was well-stocked with changes and options to be evaluated. Most were introduced in only the last two years.

The instrument panel is the standard T-scan layout with engine gauges placed neatly below. The cabin was stretched 5 inches last year, giving the 235 a wider door for easier entry and exit, and much-needed rear-seat leg room. Besides the new paint scheme, the side windows are now rounded to soften edges. Inside, the body-formed, upholstered seats provide a big addition in comfort, and headrests are available as an option. Also optional this year is a set of four, louvered, two-control outside air vents mounted in the center of the headliner. The pilot can order a hydraulic seat that can be adjusted vertically for better visibility.

There are more than cosmetic and comfort changes. A stop is now located on the fuel selector, so that in switching to the left tip tank, which is nearest the "off" detente, the lever cannot be inadvertently advanced too far. Toe brakes are now standard on both sides, and Piper, before introducing the optional soundproofing, changed the model's engine mounts to kill noise transmitted through vibration.

The big changes in 10 years become apparent in flight. The new Pathfinder is a much more stable, less skittish airplane than the older model. Psychological pilot benefits include a control yoke shaft at least twice the diameter of that found on older Cherokees; one would swear the airplane feels more solid. Less ephemeral evidence of performance improvement comes from a much enlarged stabilator. It is almost a yard wider, and its favorable influence on flight is remarkable.

My 1964-vintage 235 takes generous amounts of trim at landing to offset the weight of the engine. The airplane also gave me fits holding an assigned altitude while I worked for my instrument rating under an instructor's critical eye. The wider stabilator has greatly steadied the 235's pitch axis. Slow-speed controllability is increased, and landings require less trim and effort.

Fuel management on the long cross-countries one takes in this aircraft is more important than in smaller Cherokees. The two 17-gallon fiberglass tip tanks Piper has retained, instead of opting for the sculptured wingtips installed on the other four-seat Vero Beach lines, are the main reason.

The book recommends starting out on one main tank, traveling an hour, then switching to the other tank until it is almost dry. Then you go back to the original main until it's nearly exhausted, before the tips come into use. Piper recommends a half-hour's running time for each tip until you land and refuel.

With 84 gallons (82 usable) sloshing around in the Pathfinder's wings, an autopilot is one of the best investments this airplane's purchaser can make. The order of tank switching varies with pilot preference. Some burn out the tips first, then go to the mains, but either way genuine effort is required to fly this bird manually on long trips. The autopilot puts the fun back into long-distance 235 flying.

It was a 75° day at Vero Beach Municipal, with 7-to-10-mph winds almost down the runway, when Piper schedule/delivery coordinator Chick Winship accompanied me on a check-ride. The sun warmed up the cabin so quickly that I was given cause to use another of this year's new options.

Piper will install a three-speed ventilating fan (mounted in the ram air duct in the rear fuselage) that blows a forceful stream through the overhead

'74 CHEROKEE PATHFINDER

Specifications		Performance	
Engine	Lycoming IO-540-B4B5	Top speed, sea level	161 mph
Propeller	Hartzell 80-inch, constant-speed	Cruise, 75% power, 6,500 ft	153 mph
Gross weight	3,000 lb	Range, 75% power, 6,500 ft	805 sm
Empty weight	1,549 lb	Range, 55% power, 11,800 ft	1,110 sm
Useful load	1,451 lb	Service ceiling	13,550 ft
Baggage	200 lb	Rate of climb, sea level	800 fpm
Fuel capacity	84 gal (82 usable)	Takeoff run, no flaps	850 ft
Length	24.1 ft	Over 50 ft, 25° flaps	1,260 ft
Height	7.5 ft	Landing roll	1,040 ft
Wing span	32 ft	Over 50 ft	1,740 ft
Wing area	170 sq ft	Power-off stall	
Base price	$24,390	Flaps up	73 mph
Basic IFR price w/Narco radios	$36,070	Flaps down	65 mph
Basic IFR price w/King radios	$36,785		

PATHFINDER continued

louvered vents. The fan is the best you can do on a hot day in a Pathfinder, which does not offer air conditioning. The blower system tousles hair on only one side of your head because of its positioning. An extension over the windows would help, but the fan does provide some relief, and I found myself using it every time we were on the ground.

The tower said taxi to Runway 11, and gingerly feeling out the aircraft, I eased the throttle forward perhaps a bit too fast. The plane jumped away from its tiedown, and when I clumped on the left rudder pedal to turn it away from a smiling Seneca dead ahead, I got very little response. That's when I learned about something else new this year.

Piper has discontinued the direct-linkage nosewheel steering for a system using bungee cords. My foot mushed into the pedal, and I became acutely aware of the value of toe brakes on each side when Chick came to my rescue.

The marked difference in steering response was surprising, but easy to catch on to after a few more turns. The Pathfinder's brakes will be used much more than those on my Cherokee 235. Also important to ground handling is strut inflation. Cherokees will pull in the direction of a low strut, as ours did during the checkride.

With the Lycoming roaring, we edged up to the 65-mph takeoff speed in a few seconds and broke ground within 700 feet. (With N56952's optional equipment, two adults, and about 75 gallons of fuel aboard, we were 500 pounds under gross.)

After takeoff, the manifold pressure came back to 25 inches and the rpm to 2,500. If the airspeed indicator remains glued at the Pathfinder's best-rate-of-climb speed, 100 mph, the rate-of-climb indicator will show 1,000+ fpm through several thousand feet. Even at gross weight, the aircraft has plenty of climbing power.

Lycoming recommends a 75% power cruise for all its engines. In the sound-proofed Pathfinder, that much power is not excessively punishing to the eardrums. In my 235 it is, but I fly it at 75% anyway. The fuel shortage may change attitudes on performance, but the engine sounds and feels good at 24 inches and 2,400 rpm.

The factory is conservative in its book cruise figures for the Pathfinder. At 2,000 feet over the Florida coastline, only slight trimming at 75% power got the book's 153 mph indicated cruise. On the step, the airplane showed a consistent 160–163 mph indicated cruise, at the same power setting, all the way back to Indianapolis. Most of that trip was above 8,000 feet, where the engine could be leaned to book optimum.

The Pathfinder's stall with flaps up came at 55 mph, with ample warning at an airspeed a couple of miles an hour faster. Flaps down, the indicated stall speed was down to 49. The book says the full-flap stall comes at 65 mph —clean at 73 mph—but, remember, we were 500 pounds under gross.

The ship flew comfortably at 60 mph, flaps down, with lots of control in any direction. But the effect of fuel shifting around at this speed is quite evident. An airspeed of 90 mph with 25 degrees of flaps gives a solid feel on final, dropping to an 80- or 85-mph short final, depending on the load.

Returning from the checkride, we backed off to 80 mph on final to Vero Beach Municipal, while a Lake Amphibian made a short approach in front of us. At this speed, the extra stabilator size was readily apparent in improved control.

Heading north the next day, we put the AutoControl III to use. The VOR coupler tracked well enough as long as the station was far enough away to allow plenty of lock-on time. VOR scalloping brought on a long series of S-turns in Florida locations, but by the time we crossed the Georgia border, the distracting motions had ceased. The autopilot provides a graceful and pronounced wing dip at station passage, guaranteed to awaken any dozing pilot.

We had to penetrate the usual cold front west of Macon, Ga., on the return trip. Weaving through holes in the dissipating line, we broke out and climbed to 8,500 feet to get on top. The outside air temperature gauge showed we had flown into an arctic air mass.

The Pathfinder's cabin heat at this altitude, with the OAT showing +5°C, was quite adequate and even fogged the windows until the airstream was switched to "defrost." But as we flew deeper and higher into the mass to avoid rising cloud tops, the heater performed much less satisfactorily. At 11,500 feet, and −10°C, it was quite chilly in the cabin. Gloves and a heavier jacket would have been nice.

Part of the problem came from leaking outside air vents. The aperture controls were fully closed on all vents, but frigid air was still whistling inside. Perhaps the headliner seal was not well enough made. Notations of this discrepancy, and a loose clutch on the Piper optional Truespeed indicator, were made to Aircraft Distributors of Muncie, Ind., which was in a hurry for this ship as the first delivery to a new dealer.

Traveling our weather-avoidance route, the 1,056-mile trip from Vero Beach to Indianapolis was accomplished in a respectable 7 hours 30 minutes of flying time. The average ground speed was 140 mph. We burned 15.7 gallons per hour average.

With noted exceptions, the Pathfinder impressed this Cherokee 235 owner with its added stability, solidarity, increased performance at cruise speed (I have never been able to do better than 150 indicated at 75% power), and a quieter, more comfortable cabin. For many pilots, the 1974 Pathfinder will be the perfect airplane compromise. □