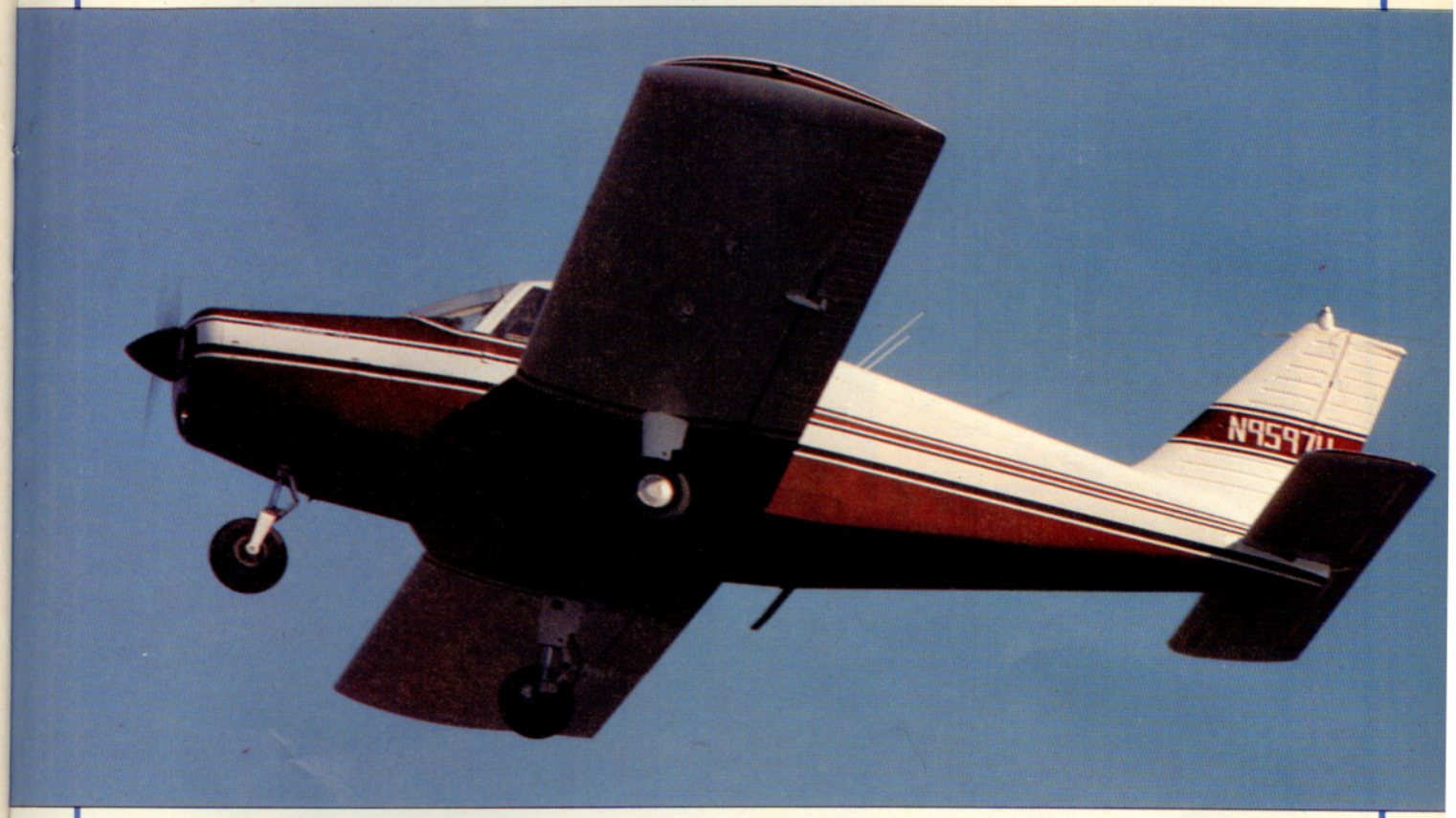
For Starters...



If funds are low and aspirations high, the Cherokee 140 is for you.

BY THOMAS A. HORNE

When I first started flying in the mid-1970s, the last thing I thought about was buying an airplane. With the money I already had put into training, the thought of yet another monthly payment seemed as realistic an option as my undertaking a voyage to Mars. But a pilot friend, who had owned several planes, always brought up the question: "When are you going to buy a plane?" And I would say, "as soon as the prices go under five digits."

"You turkey!" came the reply. "Get a friend and buy a used Cherokee 140. It will cost you $5,000. The down payment will be $1,000, which you split, and then you pay about $200 a month, which you also split.

He was right. I was spoiled by brand-new rental airplanes and kept throwing money into that black hole that pulsates just downwind of the renter's checking account. I should have bought a 140 back then. Now some of the more recent Cherokee 140s (the Cruiser and the Flite Liner) are selling used for as much as they did when new. And the average retail price of even the first 1964 Model 140s has crept to $7,900. But they are still a good buy today, and there are enough of the over 10,000 Cherokee 140s manufactured still around from which to choose.

It was competition—in the form of the Cessna 150—that made Piper discard the Colt as its trainer offering in favor of the Cherokee series.

The Cessna 150 first came out in 1959 and shortly afterwards Piper countered with the PA-22 Colt. Though it had 108 hp against the 150's 100 and cost $5,995 as opposed to the Cessna 150's $8,500 price tag, the Colt never caught on. There really was no competition.

Maybe it was the Colt's flapless wings that did it, or maybe the fabric skin, or its resemblance to the "flying milkstool"—the Tri-Pacer—that sealed its fate in the mind of a public looking for something new in a trainer aircraft. Whatever the reason, the Colt program endured an agonized life until 1963, when it was withdrawn from production. Cessna was selling massive quantities of 150s, leaving Piper faced with the challenge of coming up with a competitive trainer.

In Lock Haven changes had been coming ever since Piper introduced the Apache twins in 1954; by the early 1960s the Apache had been further refined and the 250-hp Aztec twins introduced. In 1958 the Comanche 180 and 250 models were brought out, putting Piper, for the first time, in the fast-complex-single business.

The modernizing process continued with another new design entry in

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1961—the now-famous Cherokee line. With a newly designed low wing, 150 hp, a fixed prop, fixed gear and four seats, the first Cherokees (the PA-28-160 and -150) achieved instant popularity by virtue of their simplicity and load-hauling capability.

Piper's trainer problem was solved by de-rating the Cherokee 150. Simple things like removing the 150's rear seats, changing the propeller pitch and horsepower from a climb (150 hp at 2,700 rpm) to a cruise (140 hp at 2,450 rpm) configuration and lowering the price from $13,700 to $11,000 came together to yield one of the world's most popular training and general-purpose airplanes. The Cherokee 140 was born.

The competitive forces of the marketplace had conspired to give us a needed counterpart to the Cessna 150. In a yin-yang style, the Cessna 150 and the Cherokee 140 complemented each other, and a comparison of the two points up some of the Cherokee's strong points.

To begin with, the Cherokee 140 is heavier than the Cessna 150. The first 140s had an empty weight of 1,213 pounds and a maximum gross weight of 1,950 pounds. Succeeding versions had their gross weights upped to 2,150 pounds with the addition of optional, rear seats. The

The Cherokee 140 was in production from 1964 to 1977.

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Cessna 150 has an empty weight of just over 1,000 pounds and a maximum gross weight of 1,600 pounds.

The implications of this weight difference carry over into a number of the 140's handling and performance characteristics. Its higher gross weight means you can take advantage of the rear seat option and, thus, convert your 140 into a passable cross-country machine for four, provided you leave some fuel behind.

The airplane has a much heavier feel through the controls, and a certain stability comes with that added weight also. In the landing phases, there is an especially great difference between the Cessna and the Cherokee. Control responsiveness is more sluggish in the 140, but at the same time its heavier weight and consequently higher stall speed (Vso is 47 knots for the 140, 42 for the Cessna 150) means that your approaches will be flown carrying 75 knots in the pattern and 60 knots over the fence. This gives a margin of stability in gusty crosswind conditions that is not there in the skittery, lightweight Cessna. Also, being a low-wing design, it will be difficult for a gust to lift a wing that has been lowered to counteract crosswind conditions.

Some might say that this is a negative feature in a trainer. The Cessna makes you work harder in a crosswind. Coming in at 55 or 60 knots, you get this kite-like effect that calls for a lot of correcting as the wind bats you around. The Cessna's fuselage can act as a keel, further complicating matters by its weathervaning action. Free of these vices, the 140 seems almost too docile and forgiving. To top it all off, the 140's landing gear are two feet three inches wider apart than the Cessna's. When a 140 gets on the ground, it stays there.

The 140 has a Lycoming O-320-E2A engine originally rated at 140 hp at 2,450 rpm. This was pushed up to 150 hp in the fall of 1965 by changing the propeller pitch. The O-320 enables the 140 to achieve 75 percent cruise speeds of 115 knots versus the 150's 105 knots. The Cherokee, though, will burn eight-and-a-half gallons an hour in accomplishing this feat—double the Cessna's fuel consumption at the same power setting.

Trim is another area where Cessna and Piper have differences. Cessna has its pitch trim-control wheel mounted on the center of the panel, below the carburetor heat control. Piper has an overhead crank that you always move the wrong way. Below the Cherokee's panel, you will find a rudder trim knob, something Cess-

In all, 5,082 of the laminar-flow wing- and stabilator-equipped airplanes were made.

na does not have at all in its trainer.

Other differences emerge when one puts down the flaps. Piper uses a manual system; Cessna went the electrical route. But when you put down the flaps in a Cessna 150, you have to trim the nose down. A lot. The Cherokee is just the opposite, requiring just small increments of nose-up trim after flap extension.

If you have been accustomed to a stall horn, then you will take note of its absence in the Cherokee. A red stall-warning light comes on four to eight knots before the actual stall break, which is conventional in all regards. The Cherokee 140 is certified in the utility category in its two-place configuration, permitting spins. It takes a conscious effort to spin one deliberately, though; and, once in the spin, any relaxation of control inputs results in the spin turning immediately into a spiral. As a four-seater the 140 is certified in the normal category, prohibiting spins.

Then there is the fact that the Cherokee 140 is a Piper. This means that, compared to the Cessna 150, the soundproofing is better and there is more applied technology—like the then-new Cherokee wing, a fat, stub-by-looking, laminar-flow developed by Fred Weick in a modification of the basic Ercoupe design.

The Cherokee's stabilator is another distinctive signature of its airframe. Some claim that it could have been made larger, thus giving it more stabilator authority when flaring. Seems that some student pilots run out of stabilator travel before a proper flare can be cultivated. Thanks to ground effect, the airplane continues flying right down to the runway, then strikes the pavement on all three wheels simultaneously. A bigger stabilator might have helped offset the weight of that 150-hp Lycoming up front and made the job of raising the nose a little easier.

But in all, this Cherokee is an exceptional airplane. Its stability, control feel and higher airspeeds make it especially suitable as an airplane for those who later will move up to a heavier, more complex airplane. Its utility as a trainer is amplified by its ease of handling in turbulent conditions, making it far and away a better medium for instrument work than the Cessna 150 ever could be.

If you have decided to look into a used 140, Flite Liner or Cruiser, then you should be willing to accept that it may have served as a trainer at some time in its past. That means hard use that could show up in the landing gear. Have a mechanic look

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over the torque links, oleos, steering system and brakes. You naturally will want to inspect the engine and airframe logbooks to see what kind of problems the airplane has experienced, but be critical. A damage history may be concealed by some innocuous-sounding phrase like "replaced right wing nav light and tip section." This could mean anything from replacing a bulb to a taxiing collision that may have caused damage deeper in the wing structure. Be especially wary if a recurrent pattern of repairs is indicated. The problem may not have been ironed out as yet, and would bear further checking.

The seats readily will show the type and extent of use to which the 140 has been put. Having a single door on the right side of the fuselage means that the front right seat will

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Competition—the Cessna 150—made Piper drop the Colt and use a Cherokee as a trainer.

reflect all those years of serving as a convenient stepping stone to the cabin's interior. If the stuffings are plainly visible, you better had count on a reupholstering job if you plan to keep it for a while and still get a reasonable return on your investment when you eventually sell it.

The Lycoming O-320 engines used in the pre-1968 Cherokee 140s had the 7/16-inch exhaust valve stems, which make their time between overhaul (TBO) 1,200 hours. After 1968, all 140s came with the larger, half-inch valve stems, giving them a more reasonable 2,000-hour TBO. By this time most engines have had their valves changed to the larger size; but if the one you are checking out still has the small ones, you will be subject to a recurrent airworthiness directive. AD 63-23-2 requires periodic inspection and replacement of those valves, if necessary, every 500 hours.

For an airplane that has been around as long as the 140, there have been few major ADs. This speaks well of the quality of its construction. There were the usual number of inspection-type ADs that were in effect on a one-time-only basis, such as on the propeller attach bolts (cracks), the control column (cracks), fuel-gauge sender units (inaccuracy), control tube assemblies (corrosion), landing-gear torque links (cracks), stabilator balance-weight tubes (cracks) and fuel tanks (peeling sealant).

The only recurrent ADs that would

THE 140 PROGRESSION

Throughout its 13-year production history the 140 and its variants have undergone few real changes.

We have seen how the 140's horsepower was boosted to 150 hp and a conversion kit was made available to add back seats. That was the 140-4.

For the 1966 model year, the rear seats were made a factory option. The next major changes came in 1969, when the 140B was introduced. It came with an all-new instrument panel. Instead of the push-pull throttle and mixture controls, a multi-engine-style power quadrant was installed. Toggle switches were eliminated in favor of rocker switches, circuit breakers went in in place of fuses and a better ventilation system also was introduced.

The Cruiser package also was made available beginning in 1969. Cruisers came with rear seats as a standard fixture plus wheel fairings. This was the "luxury" 140, and a whole range of IFR avionics could be ordered to fit its reorganized panel area.

The 140C came next in 1970, adding larger dynafocal engine mounts for less noise and vibration, overhead air vents and six-way adjustable front seats.

In 1971 the 140D was introduced. This model came with a redesigned dorsal fin; headrests were added, as well as inertial-reel seat belts and harnesses; and a true airspeed indicator. And, for the first time, autopilots were made a factory option.

The Flite Liner joined the 140 series in 1971 as a low-cost trainer intended for distribution to the network of 400 Piper Flite Centers. This was the stripped-down two seater with only two possible options—a Genave 300 radio and/or a snazzy paint scheme. Though the Flite Liner came with only the two front seats as standard equipment, an optional rear-seat package could be installed. This dearth of options enabled Piper to give the Flite Liner a list price of $14,250, $2,290 under the price of a standard 140 and some $5,000 less than a Cruiser.

Piper recommended that the Flite Liner be operated at an "instructional cruise" power setting of 60 percent power. This, the company claimed, would give airspeeds of from 102 to 117 knots, while only burning 6.7 gallons of 80 octane fuel per hour.

Air conditioning was made available in 1972, and in the 1973 model year a new steering and brake system was made standard. This included dual toe brakes, absent in prior years.

Apart from the yearly ritual of paint scheme changes, the 140, the Cruiser and the Flite Liner remained virtually unchanged from 1973 until 1977, when the entire program was unceremoniously discarded. T-tail mania had set in at Lock Haven, and the 140 was replaced by the Tomahawk.

Presumably, the input of the 4,000 flight instructors that Piper surveyed was instrumental in developing the Tomahawk's design criteria. It was supposed to incorporate all those things that flight instructors always had hoped for in a trainer, but never got. But there are many flight instructors who curse the Tomahawk's behavior during the flare and yearn for a return of the more tractable 140, and wonder who those 4,000 CFIs might be.

In fact, though, 140 sales had been slipping for several years, and maintenance problems plagued those 140s that were operated in a flight training environment. In some cases, Piper Flite Centers were caught using Cessna 150s as their training vehicles.

The Cessna 150 outlasted the Cherokee 140, and in light of the Tomahawk's faltering sales, its airworthiness directives and the current economic situation, it seems that Piper still is faced with overcoming the Cessna competition in the trainer market. —*TAH*

MEET MR. LUCKY

Wayne Campbell, AOPA 385353, really lucked out from beginning to end of his Cherokee 140 ownership. He bought his 1967 model 140, N9597W, in July of 1979 for $7,600. What made the deal sweet was that the seller agreed to perform the annual as part of the terms.

When Campbell finally took possession of the airplane, the engine had only 400 hours on its last overhaul, which included chroming of the cylinders. Everything seemed to work fine; but the seats and paint were totally shot, so he sank $2,500 into a paint and upholstering job.

During the time he owned 9597W, several airworthiness directives (ADs) cropped up, but none of them affected his Cherokee. The vacuum pump AD covered Airborne pumps, and he had an Edo-Aire. The magneto AD was for a series other than the one in his airplane. The one for the control column cracks turned up nothing after the inspection. And the last annual included replacement of the exhaust stacks and muffler, delaying any worries about their condition for some time to come.

The only repairs he had to make were on the automatic direction finder, which gave out one day and cost $50 to bring to life, and the brake discs. "That was my fault," Campbell said. "I let it sit outside too long one time and the discs got pitted by rust." That cost him $200. Another $50 and the oleos and steering were fixed up.

Apart from routine maintenance, those were the only expenses he incurred in the time he owned it.

In all, he flew it for a total of 185 hours. If you figure that it would have cost at least $4,700 to rent a comparable airplane for that number of hours, you can see that even with the monthly payments and the cost of the work he broke even against rental fees. And don't forget that the improvements increased its value in the market.

He would have kept it, but back in April, just two days after this writer first talked to him about his Cherokee, he got an offer he couldn't refuse. James Coffman, AOPA 714895, came forward with $11,000 and the deal was made. Campbell more than made his money back and promptly went out in search of a Cherokee Six. The best part of his 140 ownership? Campbell laughed. "You know, the whole time I owned it I never had to pay for an annual!" —*TAH*

affect a 140 these days would be the one on the small valves mentioned above; AD 62-26-6, which requires that the exhaust system piping be checked for cracks in welded joints and bends every 50 hours; AD 73-7-4, which calls for replacement of the coils and magnets used in the Bendix -20, -200, -600 and -1200 magnetos before 2,000 hours time in service is accumulated; and AD 78-9-7, which mandates inspection and replacement, if indicated, of the impulse couplings on Bendix -20, -200 and -2000 series magnetos every 1,000 hours. Also, if the 140 in question has the old Bendix ignition switch, then it will be subject to AD 76-7-12. This requires inspection of the switch every 100 hours until it is modified or completely replaced.

Prices for the used 140 will range anywhere from around $8,000 for a 1964 model up to $16,000 for a 1977 Cruiser. Those are average prices. It is still possible to find an early 140 for $5,000, but be prepared. It will have that seasoned look, and odds are that the panel is a little flukey and that the engine is nearly run out.

The big mitigating factors in determining the price a used 140 (or any single-engine airplane, for that matter) will go for are the engine and the panel. Assuming that everything else is in order, you can deduct one-half the cost of an overhaul from the average retail price of the airplane. Since an overhaul for the O-320 is running about $4,000 these days, you can subtract $2,000 from an airplane's blue-book price as reported by an appraisal source such as the *Aviation Price Digest*. (By the way, it works the other way, too. If an engine is newly overhauled that would make the airplane's value $2,000 more than the blue book's price.)

Checking this source you will see that as of this writing the average retail price of a 1964 Cherokee 140 is $7,900. Subtract the $2,000 for a high-time engine and you are down to $5,900. Subtract the devaluing effects of an unkempt appearance and an inoperative radio or two, and there you have your $5,000 Cherokee.

Beginning in 1964 at $7,900, the blue-book prices climb at the rate of $250 per year up to 1968, when they start going up by $500 per year. With the 1974 models the prices rise at $1,000 per year, topping out at

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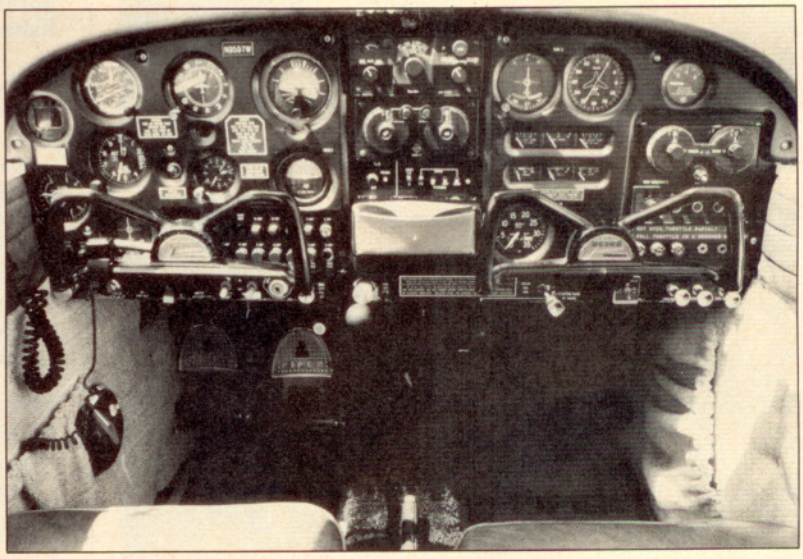
$15,750 for the 1977 Cruiser. Generally speaking, the Flite Liners can be had for $600 less than the blue-book price of a stock 140, and the Cruisers for $600 more. Any additional panel options, such as an autopilot, distance measuring equipment or a second nav-com, push up the price, as will a paint job (particularly if it's Imron) or any interior work.

You should assume that with few exceptions you will be faced with putting at least $2,000 worth of improvements into any pre-1974 Model 140. This will assure its presentability and take care of any glitches that may have accumulated over the years.

In spite of the expenses you may encounter in fixing up a 140, you will find that there is no more practical airplane for someone with a low budget and future aspirations. For around $10,000 or less, you can have an airplane that will be good for learning in, pursuing your instrument rating, going on real-world cross-countries with passengers and preparing for your transition to complex singles.

Weighed against what you would have spent in renting airplanes to accomplish these same goals and taking into consideration the return on your investment when you sell the airplane, the 140 may be the wisest way to fly inexpensively and experience the advantages of ownership. □



Cherokee 140
Piper PA 28-140 Cherokee
Price new $11,600 (1967)
Current average retail price $9,000

Specifications

Engine	Lycoming O-320-E2A, 150 hp @ 2,700 rpm
TBO	7/16 in valves, 1,200 hours; ½ in valves, 2,000 hours
Propeller	Sensenich M74DM, 74 in
Wing span	30 ft
Length	23 ft 6 in
Height	7 ft 3½ in
Wing section	NACA 65_2-415
Wing area	160 sq ft
Wing loading	13.4 lb/sq ft
Power loading	14.3 lb/hp
Passengers and crew	4
Empty weight	1,213 lb
Useful load	937 lb
Payload with full fuel	637 lb
Gross weight	2,150 lb
Fuel capacity (standard)	36 gals (34 usable)
(full tanks)	50 gals (48 usable)
Oil capacity	8 qt
Baggage capacity	200 lb (22 cu ft)

Performance

Takeoff distance (ground roll)	800 ft
Rate of climb (gross weight)	631 fpm
Maximum level speed (sea level)	20 kt, 123 kt w/wheel fairings
Cruise speed (75% power, 7,000 ft, 8.4 gph)	115 kt, 118 kt w/wheel fairings
Cruise speed (60% power, 4,000 ft, 7.5 gph)	100 kts, 103 kt w/wheel fairings
Instructional cruise speed	89 kt, 92 kt w/wheel fairings
(60% power, 4,000 ft, 6.7 gph)	89 kt, 92 kt w/wheel fairings
Range at 75% cruise (no reserve)	780 sm
Range at 60% cruise (no reserve)	850 sm
Service ceiling	10,950 ft
Absolute ceiling	13,000 ft
Vsi (stall speed, clean)	55 kt
Vso (stall speed, landing config.)	47 kt
Vx (best angle-of-climb speed)	68 kt
Vy (best rate-of-climb speed)	77 kt
Landing distance (ground roll)	535 ft