# WINNING WARRIOR

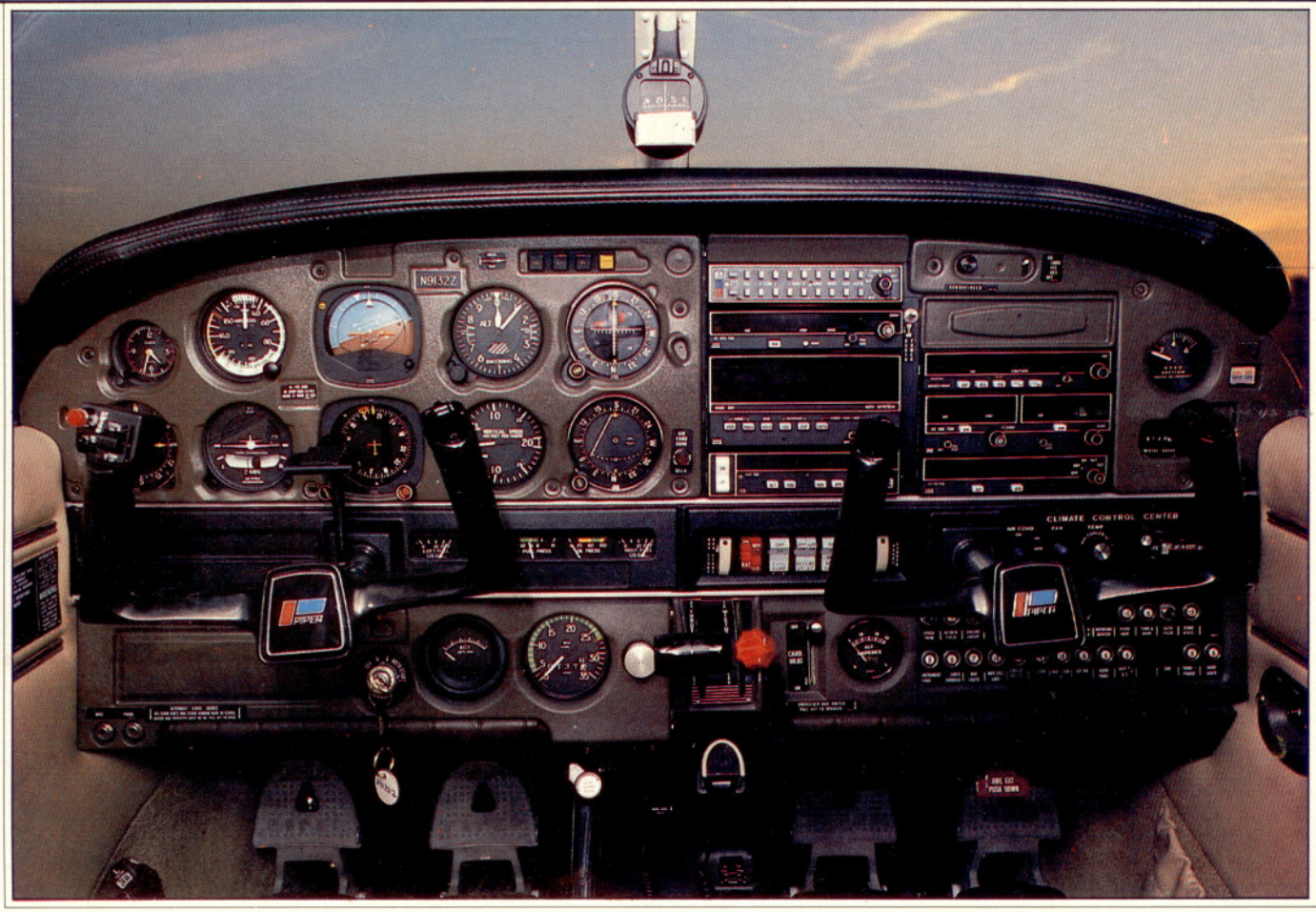
## *Piper's baby boomer becomes upwardly mobile.*

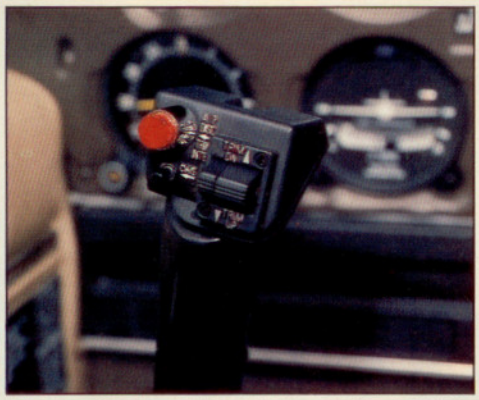
BY MARC E. COOK

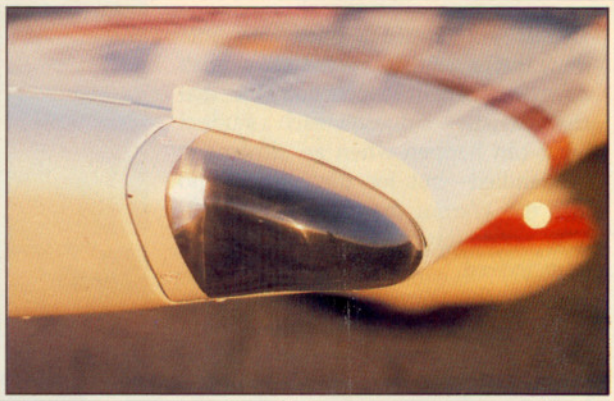
*Until recently, the Piper PA–28–161 Warrior had been facing something of an identity crisis. Finding its largest audience with flight schools and fixed-base operators seeking basic and IFR training aircraft, the Warrior, in the absence of new Cessna 152s, Tomahawks, and the like, was fast becoming the quintessential trainer. On the eve of its twenty-eighth birthday, the direct lineal descendant of the first Cherokee was on the verge of becoming the next aircraft*

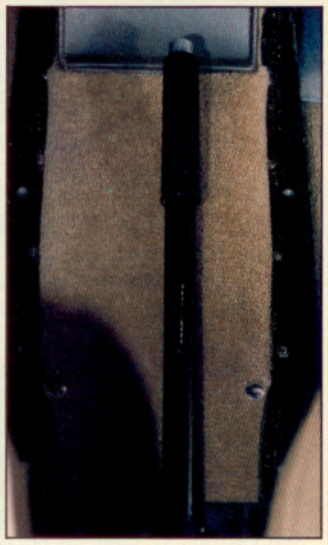
PHOTOGRAPHY BY MIKE FIZER AND ART DAVIS


N91327


N9132Z
CLIMATE CONTROL CENTER







iteration of the Volkswagen Beetle.

The Warrior was granted a reprieve from that title last year when Piper announced a stripped-down, ready-to-work PA–28 called the Cadet. Basically a Warrior in working-class clothes, the Cadet found immediate favor among the larger flight schools, whose high-time trainers had begun to show the effects of many instructional hours. With an IFR-equipped price close to that of a basic Warrior, the Cadet undercut its older brother considerably, but in doing so lost a number of features that are standard on the Warrior. The third side window and back seat and a raft of smaller items are left on the shelf as Cadets roll down Piper's Vero Beach, Florida, assembly line. So far, private owners have not stepped forward to order Cadets.

With the coming of the Cadet, the Warrior, with no other changes, immediately moves a notch up the social ladder. One look at N9132Z's panel will convince you that Piper expects new Warriors to be outfitted with all the finer things in life.

Included in this Warrior's extensive equipment list is a full complement of Bendix/King avionics (including a KNS-80 RNAV), air conditioning, two-axis autopilot, additional soundproofing, carburetor-ice detector, stand-by vacuum system, and high-line interior trim. About all that's missing is an HSI, an intercom, and a yoke-mounted push-to-talk switch, all of which can be had by checking the right box on the order form. In fact, one of the Warrior's strong points, a result of the commonality of the entire PA–28 line, is that most items available on more expensive Arrows and Dakotas are also on the Warrior's options list.

The Warrior demonstrator also sports tail and wing-tip strobes and forward-facing wing-tip recognition lights; with all the bulbs burning, this Warrior looks more like a 737 coming down the glideslope than a small single. One tower controller asked us to verify aircraft type because "I've never seen so many lights on a Warrior."

One look at the equipment and options list is enough to tell you how far the PA–28 platform has come since its Cherokee days. In fact, the Warrior, with its 160-horsepower engine, is about the most direct derivative of the original Cherokee there is. Along the way, the Cherokee both grew—getting 180-hp, 235-hp, and 200-hp retractable brethren since the early 1960s—and shrunk. The Cherokee 140, considered the trainer of its time, debuted with a derated O-320 of 140 hp; soon after, the engine was given a new propeller and higher redline, which gave 150 hp.

The Cherokee 140 continued on until 1974, when the Warrior debuted. The big news that year was the tapered wing that replaced the constant-chord Cherokee wing. By 1977, a 160-hp O-320 was installed in place of the 150-hp engine. The basic package remains essentially unchanged today, except for the length of the options page.

While squeezing such a substantial load of options and avionics into a Warrior might seem to some like displaying caviar in a plastic cooler, it makes sense in an owner-flown airplane. Consider that the Warrior, like most of the PA–28 line, is one of the more docile, forgiving aircraft flying. It has simple, proven systems, and its 28-year production run means that many, many pilots, mechanics, and instructors are thoroughly familiar with it.

It's of no small import that the Warrior is not demanding to fly. It is stable in pitch and roll, and attempts to stall the

aircraft will reward a pilot with little more than a gentle porpoise and a mush downward. Flight schools don't like that characteristic—it doesn't teach a student what can happen when an airplane is mishandled—but for the owner who flies the Warrior for pleasure or business, not education, those are endearing traits indeed.

What the Warrior's strong points mean to the owner/pilot is that he can equip the airplane to any level of capability. A pilot who flies only a few hours each year can have a fully loaded Warrior—one that can match microchip-for-microchip the avionics in many larger, more complex aircraft—without sacrificing the docility of a simple single. What's more, insurance expenses are reasonable, even for those whose logbooks aren't bulging at the seams with hours.

And the Warrior panel has plenty of room for those radios, too. Although not particularly generous in size, the PA–28 panel makes good use of space. Some pilots complain that the instrument vacuum gauge is stranded at the far right side of the panel, well out of a normal scan's range; an annunciator panel above the artificial horizon signals a loss of vacuum, as well as oil pressure or alternator woes. Even as well-equipped as it is, 32Z still has room in the right-hand radio stack and in a panel blank below and to the left of the pilot's yoke. And if you still have more gadgets in mind than holes in the panel, don't fear: The all-metal panel now being installed in the Cadets is slated for the PA–28 line in the near future.

Adding to the Warrior's electronic capability does put a dent in its load-hauling abilities. As delivered, 32Z carried 255 pounds of optional equipment, boosting empty weight to 1,649 pounds. With a 2,440-pound maximum gross weight, this Warrior can carry 503 pounds with its 48-gallon tanks full, making it essentially a three-person, no-baggage conveyance. By reducing fuel load (tabs in the tanks allow accurate filling to 34 gallons), the Warrior could haul those three persons' suitcases. In fairness, the air conditioning takes a 70-pound chunk out of the Warrior's useful load; the cost and weight penalty have to be measured against the intensity of your local summers.

The Warrior will carry those three people along at about 117 knots, burning 8.5 gph in cruise. Though not exactly the Jaguar of the sky, a Warrior's cruise

# ZULU TIME

## *Terms of endearment*

*If flying airplanes is an affair of the heart, then we must confess to having had more one-night stands than long-term relationships. Our flings with the aircraft we test are too short for our hearts; by the time evaluation flying is done, too often there's precious little time to enjoy the airplane for its own sake. Not so with Warrior N9132Z. Piper let its Eastern demonstrator stay in our hands when it wasn't showing its stuff to prospective buyers. In the more than 100 hours we have logged in it, the airplane has garnered praise and respect and inspired an occasional reverie of PA-28 affairs past.* —*MEC*

My first Cherokee outing was a ferry flight from Vero Beach, Florida, to Portland, Oregon. The year was 1962, the month May. The airplane was far from being as endowed as Warrior 32Z, sporting only a basic nav/com of the day and a low-frequency device that wasn't quite an ADF. First day was Vero to Tulsa; second Tulsa to Helena, Montana; third Helena to Portland. I was almost over gross leaving Helena because they were still using real silver dollars for money there and I loaded up. The weather wasn't so hot for the mountainous part of the trip, and I did a lot of stopping and consulting with the locals.

That trip might have been in the forerunner of today's Warrior, but there is a world, or at least 27 years' worth, of difference in the airplanes. Quieter, smoother, faster, more capable, and more attractive, Warrior 32Z is what a basic personal airplane should be. —*Richard L. Collins*

It was like a blind date. I happened to have been the first person Editor Collins saw after Piper called to say that 32Z would be in Georgia and to come pick it up. Two hours later, I walked down the transient line in Savannah looking for the new Piper, ducking this way and that like a bum peeking through the crack of a tavern door. Then, there it was, at the end of the line, resplendent in its Blanco over Clay paint scheme—its accent a brilliant Noir over Flame into Fanfare stripes, at least according to Piper literature. I calmed my excitement by telling myself *it's only a Warrior.*

Three-Two-Zulu and I hit it off right away. Once above a scattered cloud layer at 7,500 feet, in cool, smooth air, I let the superb Bendix/King KAP-150 autopilot do its thing. As it thrummed along, I thought back to the first Warrior I'd flown, a beaten, high-time airplane with a single nav/com and paint flaking off the yokes. When 46-hour-old 32Z touched down on Frederick's runway, the realization sunk in that the shiny, pretty little airplane wasn't mine, and wasn't going to be unless I could bribe Ed McMahon. Oh, but to live the fantasy. —*MEC*

One of the nicest things about flying a new airplane is . . . well, flying a new airplane. The fit and finish (including the snazzy paint job, whatever Cook says about *that*) of 32Z are excellent, and this provides a psychological boost to pilot and passengers. The pride you feel in ushering friends and colleagues into a shiny new airplane sets a positive tone for the entire flight, and the admiring comments you receive from line service personnel and ground controllers alike reinforce that pride. I've also discovered that a well-equipped panel and a well-appointed cabin have a certain calming effect on nervous fliers. The sophisticated avionics offer the pilot an opportunity to become familiar with equipment seldom found in the rental fleet—the KNS-80 RNAV comes to mind. For myself, too, knowing that the mean-time-between-failure number for any given component is still many hours away nudges up my confidence, especially in busy terminal areas, and makes flying a generally more enjoyable experience. —*Seth B. Golbey*

Piloting Warrior N9132Z is an adventure in electron manipulation. Before 32Z, my experience in flying a well-equipped aircraft was even more limited than my Piper time. I at least had 2.5 hours in a worn Cherokee 140, though that was nearly a decade ago.

Like many low-time pilots, my logbook entries all referred to Cessna 150s and 152s, with an occasional excursion in a 172, which was considered by most to be elaborately equipped for those days. It had two nav/coms, an ADF, and a DME whose display was like the readout on an old gasoline pump with the numbers slowly spinning past. We dreamed of RNAVs and autopilots.

Flying the new Warrior is a treat, indeed, but I learned early in 32Z that automation and gadgets are no replacement for careful piloting. On a VFR cross country I called up New York Center for flight following while over central Pennsylvania enroute back to Frederick. The controller called back, "Radar contact, 12 miles north of Philipsburg VOR." I thought it strange that he would reference Philipsburg when I was navigating to Tyrone VOR, a few miles southwest of Philipsburg. After studying the panel for a few minutes I discovered my error. The KNS-80 was in the RNAV mode instead of the VOR mode, and I was being led to some mysterious waypoint.

I now treat the avionics with a bit more suspicion, and with every frequency change I check to make sure the navigation system and I are operating in the same mode. —*Thomas B. Haines*

Whenever I fly 32Z, I am faced with an insignificant yet vexing problem. Do I make my radio call as "*Cherokee* Three-Two-Zulu," or "*Warrior* Three-Two-Zulu," or even "*Piper* Three-Two-Zulu?"

My preference is choice number two. It lets other Cherokee drivers on the frequency know that I am piloting the latest version of the basic PA-28, and therefore stand slightly farther up in the pecking order. It also gives me some identity, as "Cherokee" is virtually a generic term, covering everything from the 1964 two-seat, 140-hp Cherokee trainer to the venerable six-seat, 300-hp PA-32-300 Cherokee Six.

The radio call issue was not a problem when I was learning to fly in Wellsville, New York. I trained in Cherokees, pure and simple. A pair of them—N6385W and N9987W—both new, exciting, and even a bit intimidating. The trim wheel was a hand crank on the ceiling. Like most other student pilots, I could not remember which way to turn the crank for the proper pitch trim. So, I always turned it counterclockwise first because that is a more natural movement when reaching up with the right hand. If that gave me nose-up trim when I wanted nose down (I still can't remember), I reversed directions.

I have no trouble trimming 32Z. Simply push the yoke-mounted split-switch forward for nose down, pull it back for nose up. The fixed-pitch propeller, welded-in-place gear, and O-320 engine no longer intimidate me. But I will confess to being impressed by its smooth handling and the classiness and sophistication of the interior and panel. This is no Cherokee. This is "*Warrior* Three-Two-Zulu." —*Mark R. Twombly*

numbers are respectable. (In fact, its bigger brother, the 180-hp Archer, manages only five knots faster cruise for its 20 additional horsepower, and at the expense of greater fuel burn.) With the tanks full, the Warrior's still-air range works out to just over 500 nm.

More so in the Warrior than in faster aircraft, that number is highly variable. This fact was borne out by a short late-autumn hop from our base in Frederick, Maryland, to Latrobe, Pennsylvania, a distance of 107 nm. The direction of flight placed the Piper's nose square to the wind, resulting in groundspeeds ranging from 60 to 80 knots; the trip took 2 hours 25 minutes outbound. The return leg, with the RNAV showing a groundspeed peak of 172 knots, ran just more than an hour, which included considerable maneuvering and a prolonged climb to smooth air.

During its tenure with us, the Warrior has been put to the task of instrument training. For this purpose, it could hardly be faulted. It is stable and relatively simple to fly on instruments. And the full load of avionics offers versatility both enroute and in the type of approaches available.

For the time the Warrior has spent with us, it has been virtually bulletproof. The Textron Lycoming O-320-D3G under the cowl hasn't missed a beat, burns little oil, and helps the Warrior meet or beat book figures on every trip. The fit and finish of 32Z is equally impressive. Construction quality is excellent; together with an effective sound-deadening package, it helps make the Warrior quiet even at high power settings.

More times than not, it's the human factor that determines an airplane's capability. With the Warrior, a recreational pilot can benefit from an instrument panel full of electronic helpers—most of which make life easier when the weather won't cooperate—and reap the added rewards of owning and flying a simple airplane.

It might sound like reverse snobbery, but at a time when insurance rates can be onerous to low-time pilots, the simple airplane seems to be the smart way to go. In any case, the evergreen Warrior is far from having a midlife crisis—in fact, with the Piper factory steadily turning out new airplanes, its boom years might be ahead of it. Breeding will tell.□

**Piper PA-28-161 Warrior II**
Base price: $62,900
AOPA Pilot Operations/Equipment Category*:
IFR: $117,182

**Specifications**

| | |
|---|---|
| Powerplant | Textron Lycoming O-320-D3G |
| Recommended TBO | 2,000 hr |
| Propeller | Sensenich 74DM6-0-60 |
| Recommended TBO | 2,000 hr |
| Length | 23.83 ft |
| Height | 7.33 ft |
| Wingspan | 35 ft |
| Wing area | 170 sq ft |
| Wing loading | 14.4 lb/sq ft |
| Power loading | 15.3 lb/hp |
| Seats | 4 |
| Cabin length | 8.08 ft |
| Cabin width | 3.5 ft |
| Cabin height | 4.08 ft |
| Empty weight, as tested | 1,649 lb |
| Max ramp weight | 2,447 lb |
| Max takeoff weight | 2,440 lb |
| Useful load, as tested | 791 lb |
| Payload w/full fuel, as tested | 503 lb |
| Max takeoff weight | 2,440 lb |
| Max landing weight | 2,440 lb |
| Fuel capacity, std | 50 gal (48 gal usable) |
| | 300 lb (288 lb usable) |
| Oil capacity, ea engine | 8 qt |
| Baggage capacity | 200 lb, 24 cu ft |

**Performance**

| | |
|---|---|
| Takeoff distance, ground roll | 725 ft |
| Takeoff distance over 50-ft obstacle | 1,300 ft |
| Max demonstrated crosswind component | 17 kt |
| Rate of climb, sea level | 644 fpm |
| Max level speed, sea level | 127 kt |
| Cruise speed/range w/45-min rsv, std fuel (fuel consumption, ea engine) | |
| @ 75% power, best economy | 123 kt/602 nm |
| 9,000 ft | (51.0 pph/8.5 gph) |
| @ 65% power, best economy | 116 kt/655 nm |
| 12,000 ft | (45 pph/7.5 gph) |
| @ 55% power, best economy | 105 kt/684 nm |
| 12,500 ft | (39.6 pph/6.6 gph) |
| Service ceiling | 11,000 ft |
| Landing distance over 50-ft obstacle | 1,160 ft |
| Landing distance, ground roll | 625 ft |

**Limiting and Recommended Airspeeds**

| | |
|---|---|
| Vx (best angle of climb) | 63 KIAS |
| Vy (best rate of climb) | 79 KIAS |
| Va (design maneuvering) | 111 KIAS |
| Vfe (max flap extended) | 103 KIAS |
| Vno (max structural cruising) | 126 KIAS |
| Vne (never exceed) | 160 KIAS |
| Vr (rotation) | 50 KIAS |
| Vs1 (stall, clean) | 50 KIAS |
| Vso (stall, in landing configuration) | 44 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.*

**Operations/Equipment Categories are defined in the June 1987 AOPA Pilot, p. 98. The prices reflect the costs for equipment recommended to operate in the listed categories.* □