

Budget Buys

Mister Ugly finds happiness

A Piper 180D is reborn, thanks to the Internet

BY ALTON K. MARSH

Once upon a time there was a 1969 Piper Cherokee 180D named *Mister Ugly* for its bad paint, and it was very sad. It had served a useful life teaching Philadelphia-area students to fly, but it was not a rich airplane, and it lived paycheck to paycheck. The grounding of aircraft following the terrorist attacks of September 11, 2001, started its downward spiral toward skid row. Then another blow assured hard times: A new crankshaft was needed. In all, *Mister Ugly* lost five months of income. Its prospects were close to drinking lunch from a bottle in a brown paper bag and begging for (an oil) change from behind the hangar. Would anyone rescue it?

In a town not far away, by GA aircraft standards, friends John Barrass and Dennis Boykin of Leesburg, Virginia, continued to talk about buying an airplane someday—but not right now. Boykin, who retired after an Army career and works as a computer consultant, had a good friend who was in the Pentagon on September 11 and was severely burned. During frequent visits

Boykin learned that to help cheer him his church had given him a long-coveted bass boat, but the skin grafts would prevent him from being in the sun. His dream of fishing from his own boat was no longer practical. The lesson hit home with Boykin—don't put off your dreams.

An Internet airplane

Boykin called Barrass and suggested they move ahead with an aircraft purchase—right now. Their airplane purchase became an Internet-guided adventure. Barrass got a *Trade-A-Plane* Internet subscription and found the aircraft almost immediately: The ad for their Piper 180 said, “\$36,000, as is.” The “as is” wording masked a variety of problems—the aircraft could have been named *Mister Inop*.

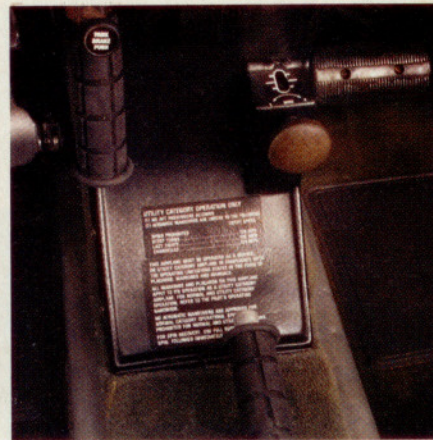
Financing, title and escrow services, and a partnership agreement were found using AOPA Online, and the two partners began an Internet search for avionics and modifications. A visit to the AOPA Fly-In and Open House exhibitor's tent in June 2002 allowed them



PHOTOGRAPHY BY MIKE FIZER



Ease of use and discounted prices played a role in upgrading avionics with mostly Honeywell Bendix/King equipment, including the KMD 150 display (left).



to compare the various avionics offerings available. They took manufacturers' pictures of avionics, sized them down on a computer to fit into an illustration of the 180's instrument panel, and began to experiment with panel layouts. Then they posted their ideas on the Internet to let other pilots vote on which was best.

Computer usage didn't stop there. The majority of the parts needed for restoration were purchased over the Internet. The two owners also sought advice from a Cherokee pilots group on Yahoo.com and the Cherokee Pilots' Association Web site (www.piperowner.com/pa32.htm). Boykin created four versions of a paint scheme and again had the owner groups vote. When it came time to begin the restoration, they took bids for the work via e-mail and Hagerstown Aircraft Services of Hagers-

town, Maryland, was the winner. Now, the pair update their owner's manuals for avionics over the Internet and place them in a binder that is kept with the aircraft. Finally, they keep the weight and balance calculations on a Microsoft Excel spreadsheet.

By the way, you'll find 15 Web addresses that the owners of this aircraft used on AOPA Online. See the black box at the end of this article to learn how to view them.

The lesson

Boykin and Barrass want you to know that when you set out to refurbish your dream airplane, you'll probably put more money into it than you'll ever recover when you sell it. They have a new interior, a new panel, new paint, new avionics, aerodynamic modifications, and custom-made aircraft covers. Was it all worth it? Absolutely. Now that they're done they not only have an aircraft they enjoy, but one that flies 13 knots faster than prior to refurbishment. Proper rig-

ging is the key to speed, Boykin said. He gets 145 to 150 mph (126 to 130 KTAS) at 75-percent power, and 125 to 135 mph (108 to 117 KTAS) at 65-percent power.

Just bringing the aircraft up to standards for normal flying was pricey. It required new coaxial cables, an antenna, a new encoder, an ELT (emergency locator transmitter), a compass, an outside air temperature gauge, and an EGT (exhaust gas temperature) gauge. The air-speed and attitude indicators were overhauled, and thanks to discrepancies the aircraft weight had to be recertified. Then the real fun began.

The new equipment

The owners went mostly with new Honeywell Bendix/King avionics because the discounts at the time were better. The aircraft now sports a KLN 94 GPS feeding a KMD 150 display. The display includes a plain-talk description of where the aircraft is—one that can be read quickly to controllers. For example, at the moment I looked at the display it

read, "Position: 0.2 nm southeast of Leesburg." (Sometimes GPS-equipped pilots tell controllers they are 150 miles north of their destination, and it drives controllers nuts.) Boykin and Barrass also added a KMA 28 audio panel. It isn't all King, however: The transponder is a Garmin GTX 327.

Also sitting in the panel is a nifty S-Tec System Twenty single-axis autopilot. It can track a VOR/GPS/localizer heading using a less precise "low track" setting for en route flight, or the more precise "high track" setting for approaches. Pitch changes and heading changes of greater than 10 degrees are made manually.

A Davtron M800 chronometer and timer was added as a dependable clock. Zip Tips for the wings from LoPresti Speed Merchants added recessed navigation and landing lights and extra speed. Aileron and stabilator gap seals from AMR&D added still more speed. Boykin wants to add flap gap seals from Knots 2U in the future. A streamlined dorsal fin from Isham added to directional stability.

From an aesthetic point of view, it is a comfortable, attractive, modern, and clean airplane.



The owners (far right), John Barrass (left) and Dennis Boykin, sought the opinions of the aircraft's future passengers in redoing the interior.



Windscreens were replaced with windows from Great Lakes Aero Products. The partners reviewed or purchased all of these products over the Web.

History, value, and safety

For good reason, there's a monument to the late engineer Fred Weick at The New Piper Aircraft plant at Vero Beach, Florida: Weick designed the Cherokee line. The idea was to make an aircraft as good as the Comanche but easier to produce, and Weick succeeded. The Cherokee uses half as many rivets as the Comanche and has fewer parts. There were 140-, 150-, and 160-horsepower models as well. Production on the 180-hp model began in 1961 with certification coming the following year. In 1967 the Cherokee 180 got a third window, but the aircraft didn't gain its present-day size (a 5-inch plug was added between the front and

rear seats) until 1972. The Cherokee Archer name was added in 1974. That is also the year when the tapered wing replaced the venerable Hershey float wings. By 1979 the Cherokee name was dropped and it was just the Archer.

A brochure on the Cherokee 180B published in the mid-1960s lacks modern political correctness. It shows a woman loaded into the baggage compartment as a demonstration of 19 "uncluttered cubic feet of space." And it calls the Piper 180 the "proud Big Chief of the Cherokee tribe." The brochure brags that the panel sports a combination low-frequency standard broadcast receiver and radio direction finder, and a 27-channel "transistorized" VHF radio and "OmniNavigation" receiver. A photograph showing a hammer smacking the vertical fin tip has this caption: "Tough fiberglass gives the all-metal Cherokee 180 the added protec-

tion of a resilient, dent-proof armor around such vulnerable extremities as nose cowl, wing tips, rudder, stabilator tips, and tail stinger." Piper's low wing, the brochure promises, provides the pilot a cushion of air and "makes every touch-down free from jolt or jounce." The most advanced feature that year was Piper AutoFlite—basically a wing leveler—that "holds headings and makes turns automatically." It consisted of a single knob near the top of the panel that could be turned to control bank angle. It, too, was "transistorized." The cost of a Piper 180 with AutoFlite was \$15,900.

The value of a used Piper 180 has increased, as is apparent since the last *Pilot* article on the aircraft in 1999 (see "Honest Cherokees," December 1999 *Pilot*). In 1999 the range for Piper 180 models from 1968 through 1973 ran from \$31,000 to \$44,000, according to *Vref*. This year *Vref* shows the prices for 1961 to 1975 Piper 180s ranging from \$36,500 to \$55,000. The FAA database indicates there are about 4,200 of the 180-hp Cherokees still flying, but that includes foreign-based aircraft and the Archer III model in production today.

There are few serious airworthiness directives (ADs) on the Cherokee models. There was, of course, that famous AD in May 1987 following a fatal wing-separation accident involving a high-time Piper low-wing aircraft that had been flown for years in turbulent conditions doing pipeline inspections. Few problems were found in any of the aircraft. (Owners were then urged to add



level and on heading for the rest of the flight. It was controllable and stable during slow flight at the edge of a stall at 48 mph with flaps down, and 59 mph with flaps up. Boykin used that capability, made possible by several of the modifications to the aircraft, in making a short-field landing before our flight. He approached at 55 mph and stopped in the first 750 feet of runway. I tried it and stopped in 830 feet. But of course, the real test is speed, or at least the success of converting dollars to modifications that yield speed. Our true airspeed calculations showed that on the day of our test flight, the aircraft would cruise at 123 KTAS (142 mph) at 75-percent power at 3,000 ft, proving that a 34-year-old Cherokee 180

keeps up well with the newer Archer.

When the work was done, friends asked why the aircraft still carried its moniker of *Mister Ugly*. After all, the beast had now become a beauty. So

the name was changed to *Mister Clean* and it lived happily ever after. The end. **AOPA**

i Links to additional information about Piper PA-28-180s may be found on AOPA Online (www.aopa.org/pilot/links.shtml).

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SPECSHEET

1969 Piper Cherokee 180D

Vref value: \$44,000 to \$67,000

Price as tested: \$88,000

Specifications

Powerplant	.....180-hp Lycoming O-360-A4A
Recommended TBO	.....2,000 hr
Propeller	.....Sensenich fixed-pitch, 2 blade, 76-in dia
Length	.....23 ft 6 in
Height	.....7 ft 4 in
Wingspan	.....30 ft
Wing area	.....160 sq ft
Wing loading	.....15 lb/sq ft
Power loading	.....13.3 lb/hp
Seats	.....4
Cabin length	.....7 ft 4 in
Cabin width	.....3 ft 8 in
Cabin height	.....4 ft
Standard empty weight	.....1,384 lb
Empty weight, as tested	.....1,471 lb
Max gross weight	.....2,400 lb
Max useful load	.....1,066 lb
Max useful load, as tested	.....929 lb
Max payload w/full fuel	.....778 lb
Max payload w/full fuel, as tested	.....629 lb
Fuel capacity, std	.....50 gal (48 gal usable) 300 lb (288 lb usable)
Baggage capacity	.....200 lb, 17 cu ft

Performance

Takeoff distance, ground roll	.....720 ft
Takeoff distance over 50-ft obstacle	.....1,625 ft
Max demonstrated crosswind component	.....17 kt

Rate of climb, sea level	.....750 fpm
Max level speed, 2,000 ft	.....128 kt
Cruise speed/endurance w/45-min rsv, std fuel (fuel consumption) 7,000 ft @ 75% power, best economy	.....125 kt/4.1 hr (50 pph/8.4 gph)
Service ceiling	.....13,000 ft
Landing distance over 50-ft obstacle	.....1,150 ft
Landing distance, ground roll	.....600 ft

Limiting and Recommended Airspeeds

V _R (rotation)	.....50 KIAS
V _X (best angle of climb)	.....64 KIAS
V _Y (best rate of climb)	.....74 KIAS
V _A (design maneuvering)	.....112 KIAS
V _{NO} (max structural cruising)	.....122 KIAS
V _{NE} (never exceed)	.....149 KIAS
V _{FE} (max flap extended)	.....100 KIAS
V _{S1} (stall, clean)	.....58 KIAS
V _{SO} (stall, in landing configuration)	.....50 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.

inspection holes to permit inspection of the aft spar fittings.)

The AOPA Air Safety Foundation published a Safety Review on the Piper Cherokee and Arrow, available for \$22.95 from Sporty's Pilot Shop (www.sportys.com). It shows that, overall, the Cherokee has an excellent safety record when compared to comparable models made by other manufacturers.

The test flight

The two owners spent \$40,000 or more on top of the purchase price to clean up *Mister Ugly*. Was it worth it? Yes, on several counts. From an aesthetic point of view, it is a comfortable, attractive, modern, and clean airplane. Their nonpilot wives enjoy flying in it, especially since they had a say in the interior design.

Aerodynamically the aircraft proved as stable as though it were flying on autopilot. Boykin said once it is trimmed for level cruise flight, it pretty much stays