TRAVELER

Twelve years ago, the AA-5 was a radical promise of things to come in four-place simple singles. It still is. And now it may be a bargain.

BY MARK TWOMBLY

Blame it on the sliding canopy. One look at a pilot muscling the fiberglass shroud open, then leaving it that way for the propwash to play with his curls, and right away the new-in-1972 American Aviation Traveler was being described in civilian fighter terms. Of course, hostile forces had little to fear from a fighter that cruises at 121 knots and lands on a "Face Saver" gear.

Or did they?

The 150-hp Cessna Skyhawks and Piper Cherokees were targeted as the Traveler's combatants, and there was due cause for cringing in those camps. The Traveler is the fastest of the lot. The same Lycoming O-320 engine that powers all three delivers at least six to seven more knots in the Traveler. Beginning with the aerodynamically cleaner 1975 model, there is a good 13-knot advantage.

The Traveler's handling is more precise, thanks to long ailerons and a large elevator. The view from inside the cockpit is superb. And, there's that canopy. . . .

Warbird pretenses aside, the Traveler simply is more interesting as a used airplane buy than its rivals. If personality and speed aren't enough to turn the head of someone shopping for a used-150- to 160-hp four-place aircraft, perhaps price is. Travelers sell for about $10,000 to $14,000, depending on engine/airframe time, panel equipment and model year. That's certainly no more than the slower 150-hp Piper Warrior commands on the used market and a few thousand dollars less than the ubiquitous Skyhawks of the same vintage bring.

The AA-5 was an innovative airplane when it was introduced (see "Tales of the Traveler," p. 39). It still is, even though it has been out of production for nine years. The Traveler has features that marked American Aviation as a pioneer among lightplane builders of the day: heat-treated adhesive-bonded wings; a forward fuselage constructed of aluminum honeycomb panels sandwiched between layers of sheet metal; simple tubular wing spar; laminated fiberglass main gear struts; and a curved steel-tube nose strut and castoring nosewheel. The novel design and overall low parts count paid off in easier maintenance and repair and a more efficient production process than the costly and laborious ritual of riveting aluminum skins.

Flying the Traveler is a simple and enjoyable matter, as we discovered in our evaluation of N5414L, a 1973 model AA-5 owned by Frederick H. White Jr. of Jacksonville Beach, Florida. But before it could be flown, we had to learn the correct cockpit-entry procedure to preserve the drama of the sliding canopy.

A flimsy lock that would stop only the most languid of thieves must be opened, and the latching handle twisted a quarter-turn counterclockwise. Now, grasp the handle firmly and pull back—hard! Unless the canopy tracks have been lubricated recently, maneuvering the flexible structure with two hands instead of by handle alone will cause it to bind, much like opening an ill-fitting window.

It's bad form to plant a dirty shoe on a front seat cushion before wiggling down into the cockpit. Use a toe to lift the front edge of the cushion, then step down onto the plastic-covered seat frame. After you're strapped in, leave the canopy ajar for natural air conditioning. On warm days, the canopy can be left partially open during flight at speeds up to 113 knots.

The Traveler interior, particularly in 1974 and later models, has been described as sports car-like because of the bucket seats and center console. The console houses the simple three-position fuel selector handle—Right Tank, Left Tank, Off—electric flap switch, pitch trim wheel, smoker's station (ashtray and lighter) and microphone cradle and jack. On 1972 and 1973 Travelers, the mike jack is located at the rear of the console, lost among lapbelt shackles, candy bar wrappers and accumulated grime and beyond the reach of most headset cords. It was moved to the head of the console in 1974.

With age, the canopy seals deteriorate, interior noise levels increase, and leaks form. A *Pilot* staff member flew the Traveler through a rainshower without noticing any leaks. But when he lowered the nose of the airplane for the descent, water trickled down from the canopy seal onto the flap switch. One Grumman service center (American Aviation was acquired by Grumman, which later became Gulfstream) recommends that Traveler owners replace the flat seal on the canopy lip with the double bulb seal used on later model Grumman singles.

The noise level in N5414L was uncomfortable at cruise power settings. New canopy seals would help reduce slipstream noise, and a windshield retrofit might be in order. Early Travelers have one-eighth-inch-thick wind-

PHOTOGRAPHY BY ART DAVIS

continued

shields; beginning in 1978, the thickness was doubled. Foam-backed tape applied to the fire wall and the inside of the tailcone also helps cut noise by soaking up vibration.

A headset should be on the Traveler pilot's minimum equipment list. The radio speaker is located at the base of the windshield, rendering most communications unintelligible.

Learning to drive the Traveler on the ground is perhaps the most difficult part of the check-out procedure. The nosewheel swivels freely around a bearing at the base of the strut; it is not steerable. Differential braking is used to maneuver the airplane across the ramp. The Traveler can pivot into tight parking spaces unavailable to less agile aircraft, but crosswinds demand quick footwork to keep the airplane from darting off to the side of the runway.

Tapping the brakes keeps the nose pointed on the runway heading at the start of the takeoff roll. The rudder is useful at 13 to 17 knots or with bursts of power. With a little practice, steering becomes second nature.

The slip-ring parking brake is virtually useless. One staff member reported the parking brake got hung up on one wheel following a preflight engine check. The airplane pirouetted neatly around the locked wheel while the queue of pilots waiting in the runup area watched with amusement. The red-faced Traveler pilot was forced to shut down, climb out and free the brake with force. We soon gave up on the parking brake completely and relied solely on toe brakes.

First-time Traveler pilots will be surprised at the abbreviated travel of the long ailerons, especially compared to the vast sweep of the elevator and trim tab. It's the right combination: Roll response is crisp, and there is plenty of elevator in reserve at slow speeds and high angles of attack.

The nosewheel has a tendency to shimmy if the bearing retainer nut is not torqued properly. Also, a nosewheel-first touchdown can lead to porpoising, a situation best handled by going around. Those circumstances can be avoided by applying proper back pressure on the touchdown and landing roll to keep the nose off as long as possible. Close examination of a Traveler's dorsal fin most likely will turn up evidence of runway scraping, proof that the pilot suffered at least one attack of overenthusiasm in applying back pressure.

The AA-5's performance is adequate—better than other 150-hp airplanes of its era but less than could be and eventually was achieved in later versions. The 1975 Traveler and 1976 to 1979 AA-5A Cheetahs are better examples of the nearly one mile per hour per horsepower efficiency that can be expected from a 150-hp four-place aircraft. Earlier Travelers are more sedate. The pilot's operating handbook promises a maximum cruise speed of just under 122 knots at 9,000 feet and 75-percent power.

Our Traveler never seemed to live up to handbook performance expectations, until it was discovered the tachometer consistently read at least 100 rpm low. Flight notes were reviewed

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Smooth, bonded skins help early "blunt nose" Travelers coax respectable speed from 150 horses.

with that correction in mind, and the recorded speeds fell more in line with book performance. At 6,500 feet and 65-percent power, the true airspeed was 109 knots, matching the book value exactly.

The AA-5 carries only 38 gallons of fuel in its wing tanks (37 gallons usable), which restricts endurance to about three-and-a-half hours, plus reserves, at normal power settings. Three-and-a-half hours probably is maximum endurance for passengers as well, unless they wear headgears or earplugs.

There are no surprises in the Traveler's behavior in flight. Climb-out at the best rate of climb speed, 79 knots, affords a good view over the nose. The handbook recommends 82 knots for cruise climb, but at that speed the rate of ascent deteriorates and the visibility is not that much better. At 79 knots, the Traveler climbs at 660 fpm.

Stalls are docile and preceded by the blaring of a loud stall warning horn. In cruise, the short-coupled Traveler requires occasional adjustments to the sensitive pitch trim to maintain hands-off level flight, but the airplane is comfortably stable. Landing approaches call for planning and reasonable speed control to avoid overshooting the touchdown zone. The airplane is slippery, and the narrow flaps have little effect beyond pitching the nose down a few degrees.

FAA and NTSB accident and incident reports from 1978 to March 1984 show a preponderance of overshoots, hard landings, porpoising and crosswind related accidents involving Travelers. Short runways and high density altitude operations also figured in several accidents.

The Traveler is not a short-field performer. At gross weight in standard conditions, it will take 1,600 feet to clear a 50-foot obstacle, according to the handbook. On a hot summer day and at a density altitude of 2,000 feet, it will take 2,100 feet to take off and climb over the obstacle.

Weight and balance also should be carefully considered. Fully loaded with four 170-pound adults and 222 pounds of fuel, a standard 1,271-pound Traveler could accommodate only 12 pounds of baggage before exceeding maximum allowable weight and balance. Our evaluation airplane weighed 1,332.65 pounds empty, which meant it could not carry four adult passengers and full fuel, much less baggage.

The AOPA Air Safety Foundation's Flight and Technology Laboratory conducted a study of Grumman AA-5 series airplanes in 1982 and reported that owners and potential purchasers should be aware of a few items peculiar to the breed. Close scrutiny should be paid to the tire and brake system. Proper-tire pressure and equal brake drag coefficient are important in maintaining braking balance and achieving long wear. Prolonged dragging of the brakes can cause the pads to overheat and glaze, reducing the aircraft's braking effectiveness.

The nosewheel swivels around a bearing that, on most AA-5s, is protected by a rubber seal on top of the nosewheel fairing. A cracked or deteriorating seal will allow water to drain onto the bearing, causing friction, poor steering and excessive brake wear.

As with all stressed steel struts, the Traveler nosewheel strut must be kept free of rust and corrosion. Chips should be touched up and the strut periodically stripped and repainted.

Grumman singles suffer from a control surface rigging problem caused by normal stretching of cables, according to the ASF laboratory. Every Grumman inspected by the lab had out-of-rig ai-

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lerons, rudder, elevator or flaps.

Flight control hinges on the Grumman rotate inside thin bronze-impregnated Teflon bearings. If the bearings are not lubricated properly and wear through, the hinges will ride on the support brackets. Bearing inserts and repair kits are available from service centers.

One Grumman inspected by the lab had excessive wear in the pitch trim tab arm, which showed up as excessive play in the trailing edge of the tab, limiting the effectiveness of the tab. Grumman service manuals describe a procedure for checking trim tab play.

The metal-to-metal bonding technique used on the AA-5 was the subject of an airworthiness directive issued in 1976. From the spring of 1974 to the end of 1975, Grumman American used different combinations of epoxy adhesive and primer in the bonding process, and several aircraft experienced delaminations. AD 76-17-3 mandated inspections of bonded skins to detect and correct delaminations and prevent further delaminations. A Grumman American service bulletin called for installation of pop rivets in the corners of the wings, tail and flight control surfaces to prevent separation of the bonded skins.

At the height of production and sales, there were about 175 Grumman American lightplane dealers and service centers in the United States. There still are 70 to 75 service centers—on paper. Of those, fewer than half actively service Grumman airplanes Gulfstream Aerospace still stocks and sends replacement parts to service centers. When supplies run low, the tooling is brought out of storage and a batch of the needed parts is fabricated.

As attrition slowly claims the fleet of Grumman singles, the network of service centers inevitably will shrink, unless someone steps in and begins to build the airplanes again. Properly equipped repair shops easily can handle Grumman service and repair, but the ASF lab recommends that owners ensure that the shop has the proper tools and service manuals and access to Gulfstream American for parts before the aircraft is released for maintenance.

The Traveler we flew last went into the shop in late January for an annual inspection, and the stay was prolonged. After 11 years and 2,500 hours of flying, N5414L is showing its age: cracks in the paint, scarred Plexiglas, aluminum and epoxy patches scattered about the airframe and fairings and tired avionics. But the time we spent with it provided hours of trouble-free, fun flying.

N5414L probably is typical of what might catch the eye of the budget-minded pilot shopping the classifieds. If so, our experience suggests it would be unwise to skip on and continue reading. □

American Aviation AA-5 Traveler

Base price $17,450 (1973)
Current market value $11,750 (average)

Specifications

Powerplant	Lycoming O-320-E2G 150 hp
Recommended TBO	2,000 hr
Propeller	McCauley fixed-pitch 7359
Length	22 ft
Height	8 ft
Wingspan	31 ft 5 in
Wing area	140 sq ft
Wing loading	15.71 lb/sq ft
Power loading	14.67 lb/hp
Seats	4
Empty weight	1,200 lb
Empty weight, as tested	1,332 lb
Gross weight	2,200 lb
Useful load	1,000 lb
Useful load, as tested	868 lb
Payload w/full fuel	778 lb
Payload w/full fuel, as tested	646 lb
Fuel capacity, std	228 lb (222 lb usable) 38 gal (37 gal usable)
Oil capacity, ea engine	8 qt
Baggage capacity	120 lb

Performance

Takeoff distance, ground roll	880 ft
Takeoff distance over 50-ft obst	1,600 ft
Rate of climb, sea level	660 fpm
Max level speed, sea level	131 kt
Max level speed, 9,000 ft	122 kt
Cruise speed/Range w/45-min rsv, std fuel	
@75% power, best economy 9,000 ft	122 kt/435 nm (52 pph/8.6 gph)
@65% power, best economy 9,000 ft	112 kt/475 nm (44 pph/7.4 gph)
Max operating altitude	12,650 ft
Landing distance over 50-ft obst	1,100 ft
Landing distance, ground roll	380 ft

Limiting and Recommended Airspeeds

Vx (Best angle of climb)	68 KIAS
Vy (Best rate of climb)	79 KIAS
Va (Design maneuvering)	106 KIAS
Vfe (Max flap extended)	104 KIAS
Vne (Never exceed)	166 KIAS
V_{S1} (Stall clean)	54 KIAS
Vso (Stall in landing configuration)	51 KIAS

All specifications are based on manufacturer's calculations. All performance figures are based on standard day, standard atmosphere, at sea level and gross weight, unless otherwise noted.

TALES OF THE TRAVELER

For sale: One lightplane line. Price $7 million. Inquire at Gulfstream Aerospace.

The Traveler was American Aviation's first four-place production airplane, but it was not what the company originally intended to build.

American Aviation was formed in 1967 when investors took over the assets of the Bede Aircraft Corporation and the rights to James Bede's BD-1 design. The BD-1 was to have been a low-price, low-horsepower sportplane with foldable wings for trailering between home and airport.

But, in the hands of American Aviation the design underwent about 40 changes and emerged as the AA-1 Yankee, a 108-hp two-seater that quickly became popular as a trainer and sportplane.

Nearly 400 Yankees were sold in the first 18 months of production, which began in the summer of 1968. American Aviation hoped to repeat that success with its new four-seat design, the AA-2 Patriot. Although it bore a cursory resemblance to the Yankee, the Patriot was a unique design intended to have a more businesslike image than the sporty Yankee.

The Patriot was powered by a 180-hp Lycoming O-360-A1H and had a large left-side door for cabin entry instead of the Yankee-style sliding canopy. Gone also was the Yankee's swiveling nosewheel and tubular S-shaped strut; in its place was a conventional steerable nosewheel and oleo strut.

A prototype was built and flown early in 1970, but the design never was certified or produced. The Patriot was conceived just as the economy entered an inflationary period during which interest rates rose and aircraft sales fell. American Aviation concluded it could not afford to certify and tool up for production of an all-new aircraft.

The company did a complete turnaround in its four-seat-model thinking. Instead of an all-new 180-hp design, it decided to build a 150-hp stretched version of the Yankee. The new emphasis was on similarity of design and commonality of parts—80-percent commonality was the goal—to keep development, tooling and production costs to a minimum.

Eual M. Conditt, chief engineer for the four-place project (now director of product support for Mooney Aircraft), recalls that one night of sawing and pop-riveting produced a mock-up of what was to become the AA-5 Traveler. The basic AA-1A (a Yankee with a slightly modified wing) was stretched by adding a couple of feet to the forward fuselage, the wings were lengthened three-and-a-half feet on each side, and the empennage was enlarged by adding trip extensions to the vertical and horizontal stabilizors. Large ventral and dorsal fins also were added to improve longitudinal stability, but they only compounded the jury-rigged appearance of the tail feathers.

A flying prototype was constructed in 30 days, and 13 months later the AA-5 received an FAA type certificate. The Traveler was one of the first general aviation aircraft to be certificated according to a new amendment in FAR Part 23 that required fatigue testing of the wings and lightning-strike protection for the airframe.

American Aviation built 154 AA-5s in the first year of production. In standard trim, they sold for $15,850 each. The first small changes in the design were made in the 1974 model. A small baggage door was added and the baggage area enlarged slightly, the rear windows were lengthened 12 inches, and an oil dipstick access hatch was cut in the engine cowl. The dorsal fin also was extended to improve the airplane's profile.

The Traveler's cruise speed increased about six knots in 1975 with the introduction of a new streamlined cowl and improved landing-gear and wheelpant fairings. The following year the AA-5 Traveler became the AA-5A Cheetah. Externally, the Cheetah is identical to the 180-hp AA-5B Tiger, also introduced in 1976.

The Traveler's stubby horizontal stabilizer and elevator were discarded in

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The potential for speed, simplicity and economy were realized more fully in the Cheetah and 180-hp Tiger.

1976 in favor of a longer span, shorter chord stabilizer and elevator. The elevator on 1972 through 1975 model Travelers has a large overhang extending beyond the tips of the horizontal stabilizer. The overhang acts as an effective aerodynamic balance to the main elevator, which makes for very light pitch forces in Travelers. The Cheetah's longer-span elevator, which has less of an overhang, gives pilots more pitch feel through the yoke.

The AA-5 series was in production for eight years. During that time, three separate companies owned the type and production certificates. In September 1973, American Aviation agreed to merge with the Grumman Corporation of Bethpage, Long Island. At the time, Grumman was building military aircraft, including the F-111 and the Rolls Royce Spey-powered Gulfstream II business jet. The merger resulted in the formation of a new company, Grumman American Aviation Corporation, which had the distinction of producing the largest general aviation aircraft, the GII, and the smallest, the AA-1B, TR-2 and AA-5.

Shortly after Grumman acquired American Aviation, an engineer who had been working on the lunar module program at the John F. Kennedy Space Center became interested in his company's new lightplane activities, and in January 1973 L.A. (Roy) Lopresti was named chief engineer of the Cleveland facility. One of his first tasks was to pass judgment on "Fat Albert," an AA-5 modified with a 230-hp Continental O-470 and a large cowling (hence the nickname). The airplane also had tapered inboard wing sections in preparation for changeover to a retractable landing gear.

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Lopresti flew Fat Albert and found that it certainly could climb well, but the extra horsepower could not be converted into miles per hour because of the parasitic drag from the big cowling. He also believed the tapered inboard wing sections would be difficult to bond. Fat Albert was laid to rest.

In a repeat of the overnight session that produced the original AA-5 mockup, Lopresti and some associates grabbed tin snips and began operating on a Traveler. They concentrated on streamlining the cowling and cleaning up the fairings and the horizontal tail.

The operation produced a set of fraternal twins, the AA-5A Cheetah and, with the installation of a 180-hp Lycoming O-360, the AA-5B Tiger. The Traveler, less ferocious than this new breed of singles, was retired.

In the two years following the merger of American Aviation and the Grumman Corporation, production of Grumman American lightplanes slowly was transferred from the former American Aviation facilities at the Cuyahoga County Airport near Cleveland, to Savannah, Georgia, where the GII was built. The move was completed in 1976. Most thought it was a production mismatch that did not bode well for the lightplane line.

Concern about the future of the little Grummans heightened in September 1978 when Grumman American sold the entire Savannah operation to Allen E. Paulson, who owned American Jet Industries in Van Nuys, California. Paulson's primary interest was in the GII and in finding a home for his Hustler project, a hybrid business aircraft design that was to be powered by a nose-mounted turboprop engine and a turbofan buried in the aft fuselage. To no one's surprise, production of the Grumman two-seaters soon was halted, followed in December 1979 by the Cheetah, Tiger and Cougar twin. Tooling for the lightplane line was put in storage and the *For Sale* sign posted.

Gulfstream Aerospace (Paulson changed Grumman American to Gulfstream American and, later, to Gulfstream Aerospace) was close to completing the sale of the lightplane line to a European heavy equipment manufacturing firm that planned to set up a production facility in Northern Ireland. However, the deal fell through. Mooney Aircraft also negotiated for purchase of the Grummans; but when Mooney's parent company, Republic Steel, began to suffer large losses, the talks ended.

Most recently, interest in the lightplane line has come from Austria. Officials from the province of Styria said they wanted to buy and build the Grummans. But the interest waned when Austrian politics intervened. Now, Gulfstream officials are communicating with Austrian national leaders about purchase of the lightplane line, but no contracts have been signed.

Gulfstream wants to sell all the lightplane tooling, engineering, design and manufacturing rights, and dealer goodwill. The asking price: $7 million. —*MT*