Rugged construction, maintenance ease, cockpit visibility, and other pluses make these sporty little birds strong competitors in the 1973 market

Pilot Flight Check: GRUMMAN AMERICAN'S TR-2 AND TRAVELER

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The Traveler retains the bubble canopy and sleek appearance of the two-place Trainer series, but provides seats for four occupants. Rear seats can be folded down for additional storage space. Photo by the author

Though the 7 a.m. weather report had indicated VFR conditions for the morning I was to flight-check Grumman American Aviation Corporation's 1973 models, I arrived at Cleveland's Cuyahoga County Airport to find that the ceiling and visibility were only 500 and one.

Things got no better that morning, but the delay at least gave me an opportunity to meet the staff and get a good look at the manufacturing operation. Jody Miller, advertising manager, introduced me to Dave Lindsey, sales coordinator, who took me on an inspection trip.

Our tour started with the preparation and bonding process, which is a basic part of the aircraft construction. All metal parts to be bonded are degreased and thereafter handled with white gloves until forming and bonding have been completed.

The lower fuselage sections are honeycomb metal, and the completed product, with its rigid construction, takes on the formidable aspect of a tank. The wing consists of a single tubular spar, surrounded by ribs and a metal skin and connected to the fuselage through a center-section tubular spar. In the Trainer series, the wing spars are sealed to comprise the fuel cells. In the Traveler series, the fuel cells are the inboard sections of the wing itself, forming a wet-wing structure. The landing gear for both series is made up of 120 layers of phenolic, bonded and attached to sturdy fittings. It gives every appearance of being indestructible.

The instrument panel and radio equipment are made up prior to installation in the aircraft. The craftsmen install all radios on a shaker bench, running them for many hours to be certain that any failures occur during this time, rather than after delivery of the aircraft.

After lunch I talked with Bob Westphal, executive engineer, and Bob Hummel, chief engineering test pilot, both knowledgeable gentlemen determined to turn out a product whose structure and flight characteristics are as safe as it is humanly possible to make them.

There was still little or no VFR flying weather, so Dave Lindsey and I went to the parking area for a thorough ground check of the two-place Trainer. Dave proceeded with his customary preflight, and I followed through. The aircraft is very easily handled by one man and can be moved from place to place with a minimum of effort.

The preflight operation is simplicity itself: a tour around the plane checking hinges and surfaces; draining and checking fuel; checking the oil level and components within the engine compartment (the latter clearly visible when the sides of the very well-designed cowl are raised).

One enters the Trainer by wingwalk and by sliding the canopy back after loosening thumbscrews on either side. The canopy moves easily on its track when force is applied at its center. You step into the Trainer by placing one foot inside and raising the seat cushion with your heel to stand on the wing spar. After bringing the other foot inside, you slide down into a very comfortable adjustable seat with headroom for even a tall person.

The instrument panel is well laid out, with center stack radios easily accessible from either side. A unique "eyebrow" houses the panel lights and protects the windshield from glare.

Fuel checks on the walkaround tell one nothing unless the tanks are full; however, fuel quantity is easily checked by reference to the fuel gauges inside.

Preflight for the four-place Traveler is very similar to that for the Trainer, except for the fuel cells and the location of the drains. There is no small oil-check access door on the Traveler cowl, but my reaction to this is that the cowl should be opened on every preflight. I would like to see the small door on the Trainer cowl eliminated.

Entry is comparable to that for the Trainer, except that when the seat is raised, a plastic step area is exposed. The seat is comfortable.

The interior arrangements of the Traveler are also about the same as those of the Trainer, with the exception of an electric gas gauge for each tank. Sitting in the rear was just as comfortable as sitting in the front, with plenty of leg room available. The problem of getting luggage into the rear is solved by an ingenious system of folding seats. The storage area is adequate for luggage of four people on short trips.

In spite of the weather, we obtained a Special VFR clearance within the pattern and taxied out to the edge of the runway in the Trainer. Very early in the takeoff, I demonstrated a characteristic mentioned in the owner's manual, i.e., the effect of early rotation. Back pressure on the elevators at about 60 mph raised the nose much more rapidly than I had anticipated, so we were treated to the sound of the stall-warning horn as the plane left the ground.

I found the Trainer responsive to the controls and quickly confirmed my suspicion of an easy pilot-induced-oscillation characteristic. This was readily overcome by momentarily relaxing on the control wheel. With the low ceiling and visibility I did not get the feel of the aircraft, but did manage to get through a couple of landings.

When I returned three weeks later for a more thorough flight check, the weather was clear, with the temperature

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Grumman American's 1973 Models
Specifications And Performance

	Trainer	Tr-2	Traveler
Seating capacity	2	2	4
Engine	108-hp Lyc.	108-hp Lyc.	150-hp Lyc.
Gross weight (lb)	1,560	1,560	2,200
Fuel capacity (gal)	24	24	38
Oil capacity (qt)	6	6	8
Baggage capacity (lb)	100	100	120
Top speed (mph)	138*	144*	150**
Cruising speed (mph)	124* (75% power, 8,000 ft)	133* (75% power, 8,000 ft)	140** (75% power, 9,000 ft)
Optimum range (mi)	490	508	650
Cruising range (mi)	435 (75% power, 8,000 ft)	463 (75% power, 8,000 ft)	600 (75% power, 9,000 ft)
Service ceiling (ft)	12,750	11,550	12,650
Takeoff:			
Standard ground roll (ft)	810	890	880
Over 50-ft obstacle (ft)	1,550	1,590	1,600
Landing:			
Standard ground roll (ft)	410	410	380
Over 50-ft obstacle (ft)	1,100	1,100	1,100
Rate of climb (fpm, sea level)	705	660	660
Stall speed, flaps down (mph)	60	60	58
Base price	$9,575	$13,250	$14,450

* Equipped with cruise propeller (optional on Trainer, standard on Tr-2)
** Equipped with optional wheel fairings

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in the low 50s and a surface wind of 10 to 12 knots from 190 degrees across the active runway, 23.

Following Dave Lindsey through the preflight check of the Tr-2 (the deluxe version of the Trainer) was a pleasure, from the standpoint of his thoroughness and the simplicity of this operation. The 14 items of the checklist were quickly accomplished without going through physical contortions. The fuel drains are readily accessible; the engine cowl opens easily to provide complete access to a roomy engine compartment. One could check the airplane in a tuxedo without any problem, since it is truly well-designed for inspection and maintenance.

My only comment is that a visual estimate of fuel in the tubular spar is difficult if the tank is less than full. Fuel-quantity gauges on either side of the cabin are satisfactory, but the aircraft must be level to get an accurate reading.

Starting procedure for the Tr-2 is quite handy. The usual prime-if-necessary approach is used, with fuel pressure built up by the auxiliary pump.

A check of the electric flap control, which is easily accessible on the console, revealed that a quick release after extending the flaps may cause the switch to snap back to the "retract" position. This is no secret, since it is mentioned in the owner's manual, and is a minor item.

The carburetor heat and mixture controls are easily discernible, so there should be no confusion in their operation. The ram's-horn-type control wheel is so mounted that it does not obstruct any placards or instrument readings. The canopy is easily closed and locked from the pilot's seat.

After taxiing out to the runup area, we prepared for takeoff at a gross weight of 1,552 pounds (maximum allowable: 1,560 pounds).

I had imagined that using a nonsteerable nosewheel would create a problem, but taxiing with the use of brakes for steering was not difficult. A slight touch of the brake seemed to do the job without unusual wear on the braking system, even with a crosswind. Ground visibility was excellent.

After the throttle was opened for takeoff, the rudder became effective at about 20 mph. From that point on, the controls proved very effective, and acceleration was smooth.

Flaps are not required on the Tr-2 for either normal or obstacle-clearance takeoff. Rotation was at 60 mph and climbout at 95. This provided a 700-fpm rate of climb. The controls during takeoff were very sensitive and light; they are aerodynamically balanced.

Continuing the climb to 4,500 feet on top of the haze layer, we completed a series of stalls, power on and power off. The Tr-2 performed well, with no bad traits. It was quite responsive to the controls, up to and through the stalls, and recovered readily with the controls coordinated, showing no tendency to spin. At cruise power, pulling up to an approach to a stall, then releasing the wheel, provided a series of oscillations that dampened out to level flight in a short time.

In a 30-degree banked level turn, the Tr-2 showed no tendency toward overbanking in the smooth air. A check of airspeed at 4,500 feet at 70 percent power gave an indicated airspeed of 119 mph and a true airspeed of 126.

Visibility from the Tr-2 in the air is certainly outstanding, giving an extra margin of safety that unfortunately is not present in many training aircraft.

Returning to the airport, we reentered the pattern and slowed to approach speed. The first approach was for normal landing with carburetor heat and full flaps, trimmed to 75 mph. A crab to the fence and transition to a slip for a crosswind landing proved no problem. After flaring to full stall, landing touchdown was under the 60-mph mark on the airspeed indicator. Rollout in the crosswind presented no difficulty. Braking was excellent.

On the next trip around, we rotated at 60-mph indicated and climbed at 75 mph, the best-angle-of-climb speed. The vertical velocity indicator was showing 650 fpm. The next approach was at 72 mph, which is given as best obstacle-clearance speed, of course with full flaps. Again, control response was good and the touchdown and rollout with a 30-degree crosswind (12 to 14 knots) was no problem. Visibility in the glide was excellent.

There was no tendency toward pilot-induced oscillation at any stage of the flight, now that I had the feel of the aircraft.

My experience with the Traveler was almost a carbon copy of that with the Tr-2. Ground inspection was simplicity itself; however, visual inspection of fuel quantity was much more satisfactory, since the tanks are integral with the wing panel just outboard of the center section.

The interior of the four-place Traveler is quite roomy, with the general cockpit layout identical with that of the Tr-2. It is great to find such standardization. Ground visibility could hardly be improved. Ground handling was easy, despite the absence of the steerable nosewheel.

Upon completion of the pretakeoff checklist, we taxied out with a 30-degree left crosswind of 10 to 12 knots. Gross weight of the aircraft was 1,916 pounds, maximum allowable weight being 2,200.

Directional control was established with rudder almost as soon as the throttle was fully opened. Acceleration was smooth and rapid, as with the Tr-2.

Commencing rotation at 55 mph and airborne at just over 60, we climbed out at the recommended 100 mph. Rate of climb was just over 600 fpm. This time we climbed to 6,500 feet for a

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series of stalls and for flight at minimum controllable airspeeds.

The stability and handling characteristics of the Traveler were excellent, and it showed no tendency to spin. Visibility in all flight attitudes was, by all standards, outstanding.

Seventy percent power at 6,500 feet produced an indicated airspeed of 118 mph and a true airspeed of 130, certainly quite acceptable for family cross-country trips.

The first approach for landing was made with full flaps, trimmed to 80 mph. As with the Tr-2, the full-stall touchdown was at just 60 mph. Directional control and braking on rollout were excellent.

On our next trip around the pattern, we climbed out at best-angle-of-climb speed, 78 mph. The controls were very responsive, and visibility over the nose was good at this steep angle.

A short-field approach speed of 70 mph was good, despite a bit of chop in the air. Flare at this approach speed was comfortable, and the aircraft showed no real tendency to float.

Our third trip around, with best-rate-of-climb speed of 91 mph, produced a reading of 700 fpm on the vertical velocity indicator. It is obvious that if one goes by the book on recommended rotation and speeds, the Traveler and Trainer are good short-field airplanes.

I was most favorably impressed by the overall design and quality of construction of Grumman American's 1973 models. I found in these airplanes the fun of flying that I experience with sailplanes and my own home-built aircraft, as well as the ability to travel comfortably, at reasonable cross-country speeds.

The only shortcoming I noted was the rather limited fuel capacity, which in the case of the Tr-2 would produce short cross-country legs of perhaps 250 to 300 miles with reserve. A three-hour leg with reserve would be possible with the Traveler, just a little on the tight side for comfortable cross-country instrument flight.

On the other hand, the rugged construction, ease of maintenance, safety features such as shoulder harness on all models, outstanding visibility on the ground and in the air, and many other features make Grumman American's Trainer and Traveler series truly competitive in today's market. □

Acro Sport Plans Available

The Paul Poberezny-designed Acro Sport homebuilt.

■■ The Acro Sport, a single-seat aerobatic aircraft designed by Paul Poberezny (AOPA 117957), can be fitted with either a Teledyne Continental O-200 100-hp engine for sport flying or a Lycoming O-360-A2A 200-hp powerplant for unlimited competition. Poberezny, president of the Experimental Aircraft Association, says over 140 of the planes are now under construction by amateur builders. Drawings of the Acro Sport are available for the amateur builder from EAA, P.O. Box 229P, Hales Corners, Wis. 53130. □