## PILOT FLIGHT CHECK:

## Grumman American Cheetah

The Traveler wandered for three years, and has finally disappeared out of sight. For now there's a new cat in Grumman's cage

> Grumman American Aircraft Corp. is giving birth to a litter of cats. Last year, the company introduced a new single-engine craft and named it Tiger.

> This year, they've revised—and renamed—the Traveler. It is now a Cheetah.

> Probably next year, the Tr2 and the Trainer (both two-place planes) will get cat names, says company president Corwin Meyer.

> The only aircraft in the Grumman sand box to have any major revisions this year was the ex-Traveler, now Cheetah. This catbird has taken on the airframe of the Tiger, but has held on to the 150-hp Lycoming engine it traditionally had. So the Tiger and the Cheetah are, from the firewall back, exactly the same aircraft.

> This, company officials say, gives the Tiger's improvements to its lower-horse

powered brother. Improvements brought out last year on the Tiger included a wider, more stable tail; additional flap deflection; reduced cowl drag; and elimination of a ventral fin.

Additionally, it would seem that since only one airframe is required for the four-place models, things would be cheaper and simpler back at the factory.

Prices to the customer don't reflect any possible fabrication savings, however. All of Grumman's lightplanes are up an even 5% from last year. No-option prices for the planes are \$11,905 for the standard Trainer, \$16,080 for the Tr2, \$21,145 for the Cheetah, and \$25,845 for the Tiger. A further price rise can be expected in December or January.

The PILOT recently took a new Cheetah on a workout and found it to be a sporty and fast-for-its-horsepower airplane.

by BERL BRECHNER / AOPA 466558

Pilots who know the Grumman singles will be surprised at one change this year. The magnetic compass, which over the past several years was mounted in the panel, is now placed in the traditional position at the center top of the windshield. Other than that change, the interior of the Cheetah, and placement of its instruments and flight controls, has not changed.

The flight check of the Cheetah covered over 1,500 miles from Washington, D.C., to Florida and back, and involved both night and IFR flying, airwork and touch-and-goes, as well as the cross-country phase of the check.

Overall, the craft proved very comfortable, pleasantly sensitive and light on its controls, and quite fuel efficient. On cross-country portions of the flight, which included about 20 minutes of IFR radar vectors in the wrong direction, the Cheetah used 117.2 gallons to traverse 1,367 nautical miles. Time for that flying was 11 hours 50 minutes. The averages, then, came to 115.55 knots (about 133 mph), 11.66 nautical miles per gallon, and a 9.9 gallon-per-hour fuel consumption. Tachometer settings were generally at high cruise power, 2,600 to 2,700 rpm, which produced 75% or better power from the 150-hp Lycoming that powers the aircraft. Altitudes ranged from 8,000 feet down to 2,000, but across the length of the flight averaged around 4,500 feet.

Cruise checks in straight-and-level

flight at varying altitude and power settings proved the Cheetah met almost exactly its published performance figures.

At 2,500 feet, temperature 75 degrees, 2,200 rpm (52% power), the airspeed showed 110 mph, which corrected to 115. Book speed for that combination showed 113.

At the same altitude, but with 2,600 rpm (76% power), the book says a Cheetah will do 142 mph. My airspeed indicator showed 135, which corrected to—guess what?—142.

At 8,000 feet, with the throttle full forward and a temperature 50 degrees, the tachometer showed 2,700 rpm, indicating 75% power. Airspeed read 128 mph, which trued to 147 mph. The book says the plane should have been flying at 147.

Grumman is proud of the speed it gets out of its "simple" airplanes. The company says the Cheetah will do a maximum of 157 mph, or more than 1 mph per horsepower in a fixed-pitch, fixedgear aircraft that will carry four people.

At a recent Cleveland press introduction of its new models, the company did side-by-side comparison flights of its Cheetah and Tiger against higher-horsepower competitors.

The "races," flown by Grumman pilots, included members of the aviation press in each of the planes to assure that the pilots used prescribed power settings and similar techniques. The 150-hp Cheetah



During night flight, red lighting under the glareshield gives fairly even viewing across the whole panel. Lights, rheostat controlled, were up to full brightness for the photograph. Photos by the author.

was put up against a 180-hp Cessna Cardinal and a Piper Cherokee Archer (180 hp). The Tiger competed against a Piper Arrow (200 hp, retractable) and a Cessna Skylane (235 hp).

In several cases the competition aircraft outclimbed Grumman American's birds, but in the side-by-side speed checks both the Cheetah and the Tiger matched, and in a couple of cases outran, the higher-horsepower competitors. It was an eye-opening demonstration.

One of the biggest hangups for the old Traveler was its somewhat limited range with a 38-gallon fuel capacity. The Cheetah offers optional tanks (\$250) that hold a total of 52.6 gallons. So now the plane can offer an endurance of six hours at higher power settings, and over eight hours at very low power. The flight to Florida from D.C. required only one fuel stop each way. With tailwinds and good VFR, the flight might have been completed without a fuel stop.

The new tail on the Cheetah, which adds 30% more surface area to its horizontal stabilizer, makes for lots of control on takeoff and landing. If a flare is attempted at too high a speed, in fact, a ballooning effect is almost certain.

Takeoff is generally accomplished at around 65 to 70 mph. Rotation slower than this will make for a longer takeoff run, poor initial climb, and a blaring stall horn.

I tried a takeoff in the Cheetah at its maximum gross weight. The craft had been loaded with full fuel (52.6 gallons) and carried four occupants: three men and a 7-year-old child. (Maximum gross is 2,200 pounds. The craft flown for The PILOT had a useful load of 807 pounds.)

Even at gross, the plane was sprightly. It got off the ground from Merritt Island, Fla. (sea level, temperature 85°, winds down the runway at 10 to 15 knots), in about 800 feet.

Climb checks later showed the Cheetah (now about 200 pounds under gross weight) would make an initial climb of 650 fpm (full throttle showed 2,400 rpm) at 90 mph. With the nose raised to 80 mph, a steeper angle of climb, the rate was about 700 fpm. With the aircraft passing through 2,500 feet and holding 105 mph, the climb rate stood at 500 fpm. And that rate could still be attained at 4,000 feet with 90 mph indicated.

Any time you're flying at 90 knots or more, visibility out of the airplane is fantastic. Even at these takeoff climb angles, the horizon could be clearly seen CHEETAH continued

over the nose (and I'm not tall). In a normal cruise attitude, the Cheetah appears from the cockpit almost to be diving. There is enough ground in front of the nose, even when you're up at 4,000 or 5,000 feet, to make VFR pilotage a simple task.

Stalls were routine. The break was slow to come, with considerable wallowing before anything happened. With controls neutralized, the craft tipped gently on its nose, not showing any wingover tendencies. Flaps up, the horn sounded at 69 mph, and the stall itself arrived at 62 mph. With full flaps, the horn sounded at 60 mph, and stall shudders began at 55 mph.

At Tico Airport in Titusville, Fla., I got clearance to drop in to the airport traffic area. I did just that. At 4,500 feet over the airport, I lowered full flaps, nosed over to 110 mph (max flap speed is 120), and dropped toward the traffic pattern at more than 2,000 fpm down (the maximum on the craft's vertical speed indicator).

On touchdown, with a 14-knot wind off the nose from 20 degrees to the right, landings to a full stop were feasible on a football-field-sized chunk of runway. Full flaps and 70 mph on approach, with a flare at 60, will give you this kind of short-field performance. More normal landings are approached at about 80 mph, reduced to 70 over the airport fence.

And a landing at Daytona Beach with

about a 60-degree crosswind from the left, gusting at 15 to 20, required just about full left aileron from the Cheetah, and hard right rudder. The bird handled it okay, and rolled to a stop only a few feet right of centerline.

Controls on the Grumman planes have almost a sports-car feel. The yoke rotates only about 30 degrees in either direction, and elevator control is light.

Despite this sensitivity, the craft proved itself very comfortable in IFR conditions. It found and held altitude with minimum fighting of the controls and remained on a heading when placed there. As fuel burned out of a tank, the Cheetah would show a bit of roll tendency. However, I drained a tank an hour at a time and found balance problems minimal.

GRUMMAN AM	ERICAN CHEETAH
Specifications	
Engine	Lycoming 0-320-E2G,
Propeller	McCauley fixed-pitch
Seats	4
Height	7 ft 8 in
Wingspan	31 ft 6 in
Wing loading	15.7 lb/sq ft
Gross weight	2,200 lb
Fuel canacity:	120 10
Standard	38 gal
Optional	52.6 gal
Oil capacity	8 qt
Performance	
Max speed, sea level	157 mph
75% power. 8.500 ft	147 mph
65% power, 8,500 ft	136 mph
Range, 37 gal, no reserv	e:
75% power, 8,500 ft	638 mi
Range 51 gal no reserv	074 IIII e.
75% power, 8,500 ft	879 mi
65% power, 8,500 ft	930 mi
Takeoff:	990 4
Over 50-ft obstacle	1 600 ft
Landing:	1,000 11
Ground roll	380 ft
Over 50-ft obstacle	1,100 ft
Kate of climb, sea level	660 fpm 12 650 ft
Base price	\$21.145
	+





trimmed out with nary a move of the hand. By the way, another new feature on the Cheetah is added flap angle. Now max "down" flap is 45 degrees, 15 more than last year. Flaps on this airplane

Placement of flight controls is quite

sensible. Trim wheel and electric flap

control are adjacent to each other on a between-the-seats console. A slight pitch

up with dropping of the flaps can be

now mean something. Fuel selector and gauges are prominently placed at the head of the center console, making mismanagement almost impossible.

Optional sunvisors (tinted plexiglass, \$50 for two) did not stay in place and instead flopped about as sunvisors are inclined to do.

Flaps on the Cheetah angle down an extra 15 degrees—a total of 45 degrees—adding slow-flight stability.

The Cheetah (photographed at Merritt Island, Fla.) has a new, wider horizontal stabilizer, and retains the sliding canopy for entry to the four-seat cabin.



The flight-check Cheetah was equipped with a number of other options, and Narco radios (less ADF and encoding altimeter), bringing its list price to \$29,145. Options included a map light (a gooseneck-type thing that proved very handy but costs \$50), an oil-access door (\$17), two steps (\$49 each), an oil quick-drain (\$17), and rear seat vents (\$100). And more.

Also, an Edo-Air Mitchell Century 1 autopilot with tracker was installed, and costs \$827.

A small baggage door adds a bit of hassle in loading the 120-pound baggage area behind the seats. But a bit of good design—rear seats that fold flat—allows loading of particularly unwieldy items through the slide-back canopy.

Extremely tight gas caps (they were found tight on several Cheetahs and Tigers) made for broken fingernails and brought a bunch of grumbles from various airport line crews.

Grumman's singles are sold with a six-month warranty. Bob Nelson, Grumman marketing administrator, said there was "never any reason" to make it longer, and added, "If there's a particular problem, we can talk about it."

If you're considering buying, keep a close eye on the factory-installed avionics prices. Some of the factory prices are 30% and more higher than the list prices as reported by the avionics manufacturers. Nelson explained that Grumman must work the costs of "installation and overhead" into these avionics prices.

Grumman American is moving its single-engine plant from Cleveland to Savannah, Ga., so it faces several more months of limited production. The company produced 600 singles last year and hopes for an increase this year, but isn't certain that this can be accomplished with the move in progress. Final changeover to Savannah is expected in May.

Last year Grumman introduced a twin, the Cougar, with a lot of fanfare. Development has apparently slowed, however, and Grumman American President Meyer said that delivery of the new twin would not begin before the first quarter of 1977.

Nevertheless, company officers wore smiles. Their sales had increased 27% over those of the previous year, and they were taking an ever larger share of the business away from their more established competitors.

A flight in the Cheetah made it easy to see why Grumman American is growing.