

Taken from a Performance

Both Cheetah and Tiger are at the head of the class in terms of speed. The Tiger has a book cruise speed of 139 knots (some owners say this is true, but most plan for 130 knots).

Aviation Consumer editors have flown side-by-side with a Piper Arrow (200-HP, retractable gear) and pulled away in the Tiger.

We've also watched a Piper Archer retreat outside the Tiger's window at about 15 knots. Running side-by-side, a Tiger will burn 20 percent less fuel and loaf along at about 60 percent power while the Archer is flat out.

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Grumman Tiger

With an earned reputation for respectable speed, lively handling and a sporty cockpit, the Tiger gets high scores from enthusiastic owners.

Ask a Grumman Tiger owner what they like about the airplane and you'll likely get an earful of energetic praise. Most owners gush over the Tiger's snappy handling, healthy climb performance and slide-back canopy that allows for open-air flight. There's arguably lots of appeal to these little cruisers. Non-Grumman enthusiasts (and even some mechanics) just won't understand. Some call them silly little airplanes.

The population of Tiger airplanes is an aged batch—born in 1975, so owners were enthusiastic when the airplane went back into production in 2000 as Tiger Aircraft, LLC. It was a rejuvenated remake with some later copies sporting ultra-modern Garmin G1000 glass cockpits. But that was a rocky return and it ended in 2007 with financial turmoil and ultimate bankruptcy. Since, there's been lots of buzz of the airplane coming back but nothing close to real production has resulted.

Early History

Flashback to the late 1960s when the model AA-1 Yankee designed by Jim Bede came on the scene. This was a two-seat airplane that was innocently targeted at student pilots, but that proved to be a bad idea. The airplane was a bit too hotrod-like for students who were still on page three of their logbook.

As one Yankee owner put it, "I learned early in my first hours flying the Yankee that the airspeeds are to be respected. There's no margin for error." The Yankee featured revolutionary construction, aluminum-honeycomb sandwich fuselage panels and bonded skins. The fuel tanks were housed within a tubular wing spar. "They are stubby, underpowered, delightful little machines and I wouldn't trade mine for anything," remarked one owner.

Following the Yankee was the four-seat AA-5 Traveler from American Aviation. It had 150 horses under the cowl and more traditional fuel tanks. Gone were those dangerous sight-gauge fuel gauges that held avgas inside of the cabin. It was a different airplane.

The Traveler tried to compete with so-called complex aircraft such as the Cessna 177 Cardinal and Piper's PA28R-series Arrow with little success. It wasn't until Grumman stepped in, threw its money on the table and involved the famous Roy LoPresti to work his aero magic on the design. The result: the AA-5B Tiger.

The inside and outside of the cowling saw some changes including a 180-HP O-360 Lycoming that runs hot. More on that wart later. There was more fuel capacity and a different elevator plus some signature LoPresti and slick airframe mods. Many of these smooth mods made their way to the Traveler to mold the model AA-5A Cheetah (the Cheetah retained the lesser 150-HP Lycoming). To this day, the Tiger is the preferred machine and clearly more desirable than the Cheetah to many buyers.

The airplane was a reasonably brisk seller until production ended in 1979 after Gulfstream bought the line, where the focus was on building biz jets. Clearly, Gulfstream is a success story with or without the little Tiger. Perhaps Gulfstream knew something Cessna didn't when it pulled the plug on the Tiger. The industry subsequently tanked and Cessna threw in the towel shortly thereafter on its single-engine line of pistons. It was an ugly climate—worse than today.



Rebirth

Flash forward to the late 1980s when the Tiger was born yet again at American General, who introduced the AG-5B around 1990. This lasted until 1994 when the company flat-lined. The parts inventories and rights were sold to Fletchair, one of the two main suppliers of Tiger support and a distributor for new factory parts.

Original production for the AA-5B was 1323 airplanes, while 900 AA-5As were built. A total of 834 AA-5 Travelers were produced, as well. American General built around 150 AG-5Bs before it folded. There were no major design changes during the Tiger's production run, although there were some refinements. In 1977, much-needed soundproofing was improved and windshield thickness doubled to a quarter-inch. Other changes included minor aerodynamic refinements, including rubber fairings on the landing gear, improved windshield sealing and the addition of a nose-strut shock absorber. In 1978, the iron-butt-inducing seats were improved, and U-strips were added to the trailing edges of the control surfaces to prevent delamination of the bonds.

No Frills

We wouldn't exactly call the Tiger luxurious. It's stark and has a relatively no-frills dwelling, but this adds to some of the appeal. As with most airplanes, anything goes in the avionics retrofit world. Grumman owners load oodles of electronics into the panel, including Aspen and Garmin glass displays, advanced autopilots and color engine monitors.

Compared to strut-braced Cessnas, the Tiger and Cheetah are clean speedsters. The Tiger has a published book cruise speed of 139 knots but owners generally plan on real-world speeds of 130 to 138 knots. This isn't chump speed, since the AA-5, by virtue of its slab-sided honeycomb panel fuselage, is hardly slick in the drag department. Hard chines run along the lower corner of the fuselage and the wing-fuselage junction has no fairing to smooth interference drag.

The saving grace here is the bonded construction with flush rivet heads. The Tiger is the fastest of the line, since the Cheetah makes 12 knots slower, with the Traveler bringing up the rear and slower yet, but will still blow away a 150-HP Cessna Skyhawk or older Warrior. Later 160-HP versions of the Warrior, with speed pants, can just about run with a Cheetah, however.

Where Skyhawks and Cherokees could have a slight edge is in climb. At sea level and standard temperatures, the Tiger moves out at 850 FPM, about on par with the competition. (With a climb prop, a Tiger may see 1000 FPM.) But throw in high density altitude and the Tiger's climb performance sags behind the Archer and Cessna's strutless Cardinal. The Cheetah, with 30 fewer horsepower, can be a dog in hot-weather climbs.

The Yankee is worse.

Some energetic and skilled Tiger owners tweak as much climb as possible from their airplanes—essentially ignoring the book procedures and climb with some flaps hanging out. If the takeoff includes clearing some obstacles on the other end of the runway, taking off with one-third flaps might get the job done less the pucker factor.

Load, Range, Handling

Gross weight of the Tiger is 2400 pounds and typical IFR aircraft run 1450 to 1500 pounds empty. That leaves a useful load of about 900 pounds for the 180-HP four-placers. That's enough for full fuel (51 gallons) and three adults, plus a little baggage. The Cheetah has an empty weight only slightly less and a gross of 2200 pounds with useful loads around 750 pounds. Since the Cheetah is a weak climber, loading full fuel into the optional 51-gallon fuel tanks makes it a two-place airplane.

But loading might not be a huge issue anyway since the Cheetah lacks any remarkable baggage space. Any heavy items like large golf bags or snowboards need to come into the cabin and be laid over the back seat. Center of gravity is normally not a problem in either the Cheetah or Tiger, which is a good thing.

The Tiger's 51-gallon fuel capacity yields about four hours of endurance with reserve—a pretty good fit for the aircraft.

Realistically, you'll need to plan on still-air range with full fuel in the tanks to be about 500-plus miles. The standard-tank Cheetah, by comparison, has shorter

When it comes to avionics upgrades, anything goes in a Tiger. There's plenty of room to work with. This panel sports an Aspen PFD, a big-screen MFD and IFR GPS, upper left photo. The fuel selector, bottom photo, is easy to access.



The sliding canopy adds to the Grumman's sporty cockpit and sports-car-like appeal. The price to be paid is a semi-awkward ingress. Pop the seat cushion off its pan to spare wear and tear of the upholstery, lower photo.



legs. The 38 gallons you pump into it is good for a bit less than four hours, with reserves. This equals about 450 miles. As a two-placer with the optional 51-gallon tanks full of fuel, the Cheetah will fly a lot longer than you'd be comfortable staying in it. As for handling, proud owners are spot on when they say the Tiger is a sports car of the skies. It's light and responsive with somewhat touchy controls, which really makes it an autopilot airplane for hard IFR. The popular autopilot for the airplane is of course the S-TEC 20 or 30 with altitude hold.

During taxi the Tiger's castering nosewheel can play with your emotions.

Landing is a reasonably easy affair in a Tiger (the Yankee, on the other hand, sinks like a flying manhole cover when the power is pulled off). Owners will say the airplane floats and adding insult to injury, coming in with extra speed in the airplane is a setup for the classic runway overrun—a common thread in the wreck reports.

These airplanes have a swiveling nosewheel (it doesn't caster all the way around) so taxi is accomplished with brakes. As with any castering nosewheel, this takes some skill. Experienced Grumman pilots know just the right amount of speed to make the rudder effective for most turns.

If you try to push a Grumman back into its tiedown without a tow bar to help, you'll risk both damaging the nosewheel and create a comedy show on the ramp. And when it comes time to chock the airplane, put the chocks under the mains and not under the nosewheel.

The drill for slipping the surlies in the airplane consists of riding the brakes a few seconds until the rudder comes alive after angling the airplane a bit right of centerline. Once engine torque starts kicking, the wheel straightens and it's off the brakes pretty quickly. Pilots new to the Grumman get all kinds of tense about that castering nosewheel, but there isn't really much to it.

Open Canopy

Talk about Grumman Tigers and the first thing that comes to mind is that fighter-jet-like sliding canopy. We've all seen the ads of pilots with both arms out the canopy in flight grinning like goats. This slick canopy makes getting in and out of the airplane a minor challenge if you have stiff muscles. Plus, you'll get wet in the rain, but rewarded with excellent ventilation on hot days during taxi (and in flight).

That show-off canopy, however, can take its toll in a crash situation. There's a chance pilots will get trapped in the aircraft if the fuselage bends or warps to the point where the canopy can't slide open. Keep a hammer in the aircraft to smash your way out if you wreck. Consider protecting the two pieces of the canopy lock to keep it from smashing and jamming.

The Tiger's interior and panel have stood the test of time, although many airplanes sport cracked interior pieces and broken instrument panel trim and overlays. This is true of most vintage airplanes, but there's lots of plastic in a Grumman. The fuel selector is idiot-proof, although without a "both" selection, it does require switching tanks. For the fuel-management challenged, the switch is intuitive with arrows pointing to the active tank. The selector is conveniently located and quite visible.

Working the electric flaps is accomplished with a toggle switch up on the center pedestal/console, but you'll need to look down at the indicator to see how much flaps are hanging. Experienced Tiger pilots tend to simply count to five for half flaps. A slight quirk of the switch is that if you hold it down to extend the flaps and let it go, it snaps back over center and retracts them again. Gotta watch this.

The Tiger/Cheetah interior is comfortable, and the panoramic visibility and canopy view makes it feel roomier than it really is. Linebackers will complain about lack of shoulder space. A unique and useful feature of the cabin is the fold-down rear seats, which provide a six-foot-long cargo compartment that will hold a couple of mountain bikes, several golf bags or ski equipment for those excursions to the mountains.

Maintenance

Mechanics access the engine through the split cowling and in general, the Grumman is designed to be easy to service. It's a simple airplane with no retractable gear, hydraulics or other complicated systems. As a result, owners boast of low operating costs and excellent dispatch records.

A wart in the design is the absence of cowl flaps and the tightly-cowled engine has been known to run hot. Caring for the engine baffling is a must and many owners advocate engine monitoring systems. These monitors have been known to register upwards of 450 degrees, a big number for a low-output four-cylinder engine.



Although it shouldn't be a problem for any current airplanes still flying, bond-line separation plagued a few early models. The culprit was an improper bonding sealant, American Cyanamid FM-123, known as "purple passion" among production

employees. The FM-123 was used in all Grumman American aircraft built between April 1974 and December, 1975—including Tigers up through about serial number 125.

At least one delamination occurred in flight in a 1975 Tiger, but no accident resulted. At least two Tigers, serial numbers 15 and 19, were virtually rebuilt from scratch because of bonding problems. According to a former production employee, 30 or 40 honeycomb fuselage test panels somehow found their way into production aircraft, possibly affecting Tigers with serial numbers below about 30.

A 1976 AD required rivets along bond lines and the problem has since receded. But any buyer of a 1975 or early 1976 Tiger should be aware of the potential for problems. You can check for the defective glue by pulling off the wingtip and inspecting the bonded seam at the spar-to-rib or rib-to-skin joint. If there's a purple line, you may have a problem.

The Tiger/Cheetah castering nosewheel can induce shimmy. Improper tensioning in the spring washers, sloppy torque tube struts, worn tires and loose axle nuts all contribute to nosewheel shimmy. If there's a single piece of hardware on the Grumman that requires attention and extra care, it's this nosewheel. Lube it and adjust it by the manual is the requirement. (Not many shops have the manual and readers tell us that improperly performed maintenance on used airplanes for sale is common.)

The 1977 and later models have a shock absorber in the nosewheel, which helps, but these make removal of the nose gear a pain in the shorts. If you have persistent shimmy problems, see a mechanic who specializes in Tigers. And this is a good time to mention something odd: We're not sure why, but some mechanics and shops in general shy away from Grummans—a snub of sorts. Several shops told us that some Grumman owners tend to bellyache about maintenance costs when they surface because they're caught up in the "little airplane" mentality. The Grumman may look like a little toy, but it's a real airplane that requires real maintenance. Don't expect a free ride from most mechanics when the airplane hits the shop.

Pre-1979 Tigers (s/n 1047 and below) had problems with cracking spinners, possibly related to propeller vibration. Virtually all Tigers in the field have been retrofitted with improved spinners, but check to make sure. One experienced Grumman mechanic who wrote to us says that even the new spinners have problems.

The Tiger was an early pioneer of the current trend toward castering nosewheels and that means brake pads wear quickly. Although savvy pilots learn to taxi with minimum braking, good brake maintenance is important. Several owners reported repeated breaking of the rudder springs and one owner told us he always carries a spare, just in case.

Just like Mooneys, Tigers have wet wings and it's not uncommon to smell leaking fuel. An AD addresses the fuel tank sealant.

The airplane is relatively AD-free but there are two significant inspections: one 200-hour inspection of the McCauley prop hub for cracks and a 100-hour inspection of the ailerons.

One potentially onerous AD cropped up in 1998: AD 98-2-8 calls for inspection of the hollow crankshafts bore for corrosion pits or cracks. It's a shotgun AD that applies to a number of airplanes with Lycoming engines. If nothing turns up, an anticorrosion treatment takes care of the AD once and for all. If cracks are found, the crank needs to be replaced, and if corrosion pits are found, the AD becomes a 100-hour repetitive inspection until a new crank is put in at overhaul.

Parts, Mods, Club

The Tiger is unusually well supported, in our view. Fletchair (800-329-4647 and www.fletchair.com) has long specialized in Grummans. When American General folded, Fletchair acquired the parts inventories and manufacturing rights. FletchAir, Inc. is known worldwide as the single largest manufacturer and distributor of parts for American, American General, Grumman-American and Gulfstream-American copies.

David Fletcher, president of FletchAir, has grown up with the Grumman family of aircraft and has been a stocking Grumman dealer since 1974.

Air Mods NW (www.airmodsnw.com) does wing repairs, refurbishments and upgrades, and has a number of STCs for the Tiger. Air Mods also sells oil coolers and a baffle modification that reduces oil temps by 25 to 40 degrees. This is a worthwhile mod in our view, given the heat these engines throw.

Air Mods can turn Travelers and Cheetahs into Tigers with a 180-HP conversion. They also can convert Travelers and Cheetahs to constant-speed props and install split nose and lower cowlings, plus wingtip and wing-skin embedded halogen landing lights and roller canopy tracks. They can also handle honeycomb and wing repairs as well as interior and engine work.

Fletchair has a split nose cowl STC, which eliminates the need to take off the spinner and prop to get at the starter, alternator and front engine baffles. This applies to the 1975 Traveler up through the 1979 Tiger. The AGAC Tiger already

has a split nosebow, as do the newer Tigers that came from Tiger Aircraft.

Another recommended mod is a Sensenich propeller in place of the AD-plagued McCauley. This also eliminates an annoying RPM restriction between 1850 and 2250 RPM in descending flight—right at the usual ILS approach speed. Unfortunately, installation is not intuitive and common installation errors have led to problems with the bulkhead and/or propeller attach bolts.

Other mods of note: Approach Aviation (www.approachaviation.com) has a ram air induction kit; Powerflow (www.powerflowsystems.com) has a tuned exhaust system.

There's AuCountry Aviation (www.aucountryaviation.com) and of course, LoPresti Speed Merchants with cowling modifications (www.speedmods.com).

Grumman owners enjoy one of the best owners groups around, the American Yankee Association. It has an excellent newsletter and serves as a pipeline to technical expertise. The group also has a special group insurance plan that may save you money and can direct you to approved instructors for Grummans. Contact www.aya.org. There's also The Grumman Gang (www.grumman.net).

Reader Feedback

I'm now over a few hundred hours in Grumman Tigers and they are a consistently dependable and simple aircraft to fly. Admittedly, learning to fly a Tiger after training for 70-plus hours in a Piper Warrior, my first reaction was that they were a bit touchy and difficult to control. Now (and after only a few hours with a Grumman-savvy instructor), I understand that they respond well to a light touch, are truly a sports car of the air and are safe when flown with an eye to some key numbers on approach. The agile handling and extreme ground maneuverability are a fine combination. These are fun, fast aircraft to fly.

The best safety recommendation I heard when learning to fly then was: "Don't land these aircraft too fast." Many C and P brand pilots don't have experience with aircraft with smooth skins, and are more used to the draggy flight characteristics of planes with rivets on the wings and fuselage.

The Tiger will glide better and will not bleed off speed as fast as some aircraft. Speedwise, 70 knots crossing the threshold is a good target, which generally equates to somewhere near 1500 RPM with full flaps on final. If you bring it in too fast, it will not just flop to the runway. Set up a controlled approach and manage airspeed for a highly predictable result.

The compact cowling can create some cylinder overheating problems if the mixture is too lean or the baffles are in bad shape. Cowl mods are available from a number of sources that offer better cooling and lower drag than the square inlets native to Tigers.

It's important to keep cylinder temps under 400 degrees F in cruise to minimize coking on the valve guides and reduced cylinder life. Lean aggressively on the ground to avoid lead build-up on the lower plugs and use a lead scavenging run at the end of the flight (run up to 1800 RPM, lean, wait 30 seconds) to keep things clean.

Older aircraft typically do need parts to replace some of the original ABS plastics and I've replaced the horizontal stabilizer on two different aircraft with fiberglass.

Parts and support are very available, with great customer care from Fletchair and a cadre of talented A&Ps that can handle these birds is easily reachable through simply asking on The Grumman Gang (www.grumman.net).

Painting requires working with someone who knows how to handle the bonded wings, but there are many of those shops around.

These aircraft flight plan at 130 knots almost universally. They typically get 700 FPM climb at lower altitudes and 90 KIAS even in warm weather. My plane burns about 11 gallons per hour at 8000 feet, leaned out, has almost a four-hour cruise capability (maintaining reserves) on the 52-gallon tanks, of which only 50.5 are usable. Still, that's bladder-busting endurance.

I pay about \$1000 a year for insurance for a VFR pilot. Annuals run about 20 to 24 hours of time (I have a great A&P in Forest Hill, Maryland) and unless I'm installing a new tach or fuel flow or doing something else that's an upgrade, I can predict a reasonable annual expense.

Two full-sized bicycles fit well into the cargo bay (front wheel removed) when the rear seats are folded down or removed. Simple, fast and capable of hauling three 200-pounders even with full fuel (mine has a 930-pound useful load), this versatile aircraft is a great value and performer.

Peter Langlois
Leesburg, Virginia

After earning my private pilot license in 1997, I joined a flying club and flew a 1974 Cessna 172 and a newer Piper Archer II. After a year, I realized that we could make good use of an airplane if it were available on our schedule. I read about the Grumman Tiger and was impressed with owner comments and its speed relative to others in its class.

After a brief search, I found a 1977 Tiger that was in good condition but could use some avionics, paint and interior upgrades. I've continued to upgrade my Tiger since purchase, adding a Garmin GNS430W, an EGT/CHT gauge (which I consider a necessity), new paint and interior. My Tiger is IFR certified. It is a very competent instrument platform.

I've had my Tiger for 12 years now and have flown between 70 and 100 hours per year. Among the more lengthy trips my wife and I have taken were from Princeton, New Jersey, to Cody, Wyoming, Fredericksburg, Texas, and last year to Red Deer, Alberta. We did the return trip from Texas to New Jersey in one day—about 12 hours with two fuel stops.

Maintenance and annuals are pretty straightforward, with no more than the usual surprises. The simplicity of the design and lack of constant speed prop and retractable gear reduce maintenance costs and improve reliability. Even without that complexity, I routinely cruise at 135 knots and could wring another couple of knots out of it if I didn't mind wasting fuel.

The American Yankee Association, the club for all Grumman aircraft, is a great support group, with helpful experts willing to share their expertise. Plus, there's a great annual convention.

Larry Tatsch
Ringoos, New Jersey

I've been flying Grummans since 1978. I soloed in an AA1C and got my ticket in an AA5A. In fact, four out of the five planes I've owned have been Cheetahs or Tigers. I've flown over 3000 hours in all single-engine Grumman makes and models. I liked them so much, I quit my job as an F-16 propulsion engineer at Edwards AFB to start my own company (www.aucountryaviation.com) to maintain, repair, modify, service and sell only Cheetahs and Tigers.

In 2009, my STC for a completely new fiberglass cowling was approved. To date, 16 have been sold and 14 of them are flying. The prototype plane was 8 knots TAS faster with the new cowling and the flight test plane was 6 knots TAS faster with the new cowling. Both planes showed a significant decrease—up to 30 degrees in CHT—over the stock cowling. I'm currently making small changes to try and squeeze another knot or two.

I'm installing an IO360-B1G6 into my Tiger to become an STC that allows the use of a constant-speed prop. Unlike the IO-360-C1C6 200-HP angle-valve engine, the parallel-valve B1G6 uses all of the existing baffles, engine mount, airbox and most of the plumbing and cables. I'm in the final stages of obtaining PMA for aluminum instrument panel overlays and a fiberglass eyebrow kit.

Gary L. Vogt
AuCountry Aviation

Gruman/American General Tiger
Tiger Prangs: Engines, Creativity

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