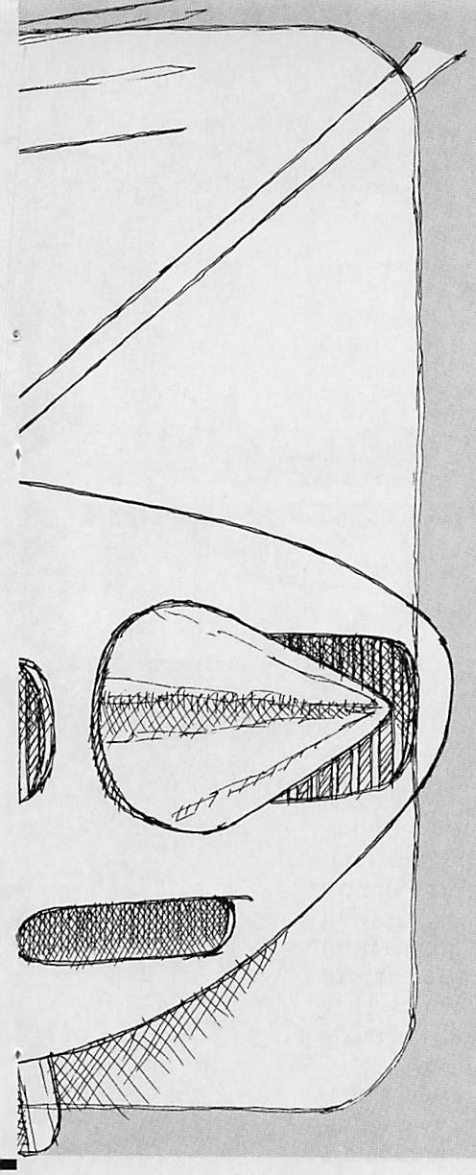


THE FIRST FLIGHT

We can all remember that maiden voyage into the sky; a montage of nervous excitement, fumbling embarrassment and ultimate exultation

By George Wilhelmsen
Illustration By Steve Curtis

pretty good, I'd been able to get the plane started without having anything go wrong.

That is when Don said, "Well, let's taxi out to the runway and go flying." Total elapsed time into lesson: 15 minutes. Total time, as felt by student: two weeks.

We taxied out to the active runway, and started on the final checks. These took another five minutes, as I went from point to point, careful not to miss anything. After some embarrassing questions, I was able to do the run-up and we were ready to take off.

"Use the radio to notify people in the area of what you are going to do," said Don, as if it was something I'd done before. While I stared at him for a moment, he went through a quick primer on proper radio procedure, and made the first call.

"Joliet Traffic, Cessna 5461 Bravo, departing three-zero Joliet." Don said this with authority and confidence. I wondered which direction we would be departing in; my taxi-ability had shown me the damage 10 years of steering with your hands can do and I was unable to figure out how I would keep it going down this tiny, 75-foot-wide runway.

Don again gave me a quick description of what we were going to do, and then told me to get to it. I put the throttle slowly to the firewall and felt the plane start to accelerate. Don sat calmly next to me and coached me through my first takeoff, saying nice things like "Okay, pull back slowly now. Feel the plane lifting off?"

I did feel the plane lift off, I also felt and heard the pilot-side door pop open as we rotated. I turned to Don and asked, "Uh, the door opened, what do I do?" As I was asking this question, I was picturing a fast return to the ever shortening runway for a quick repair. "Close it," Don said. I closed it. We flew on.

The first lesson was elementary, teaching coordination in turns, climbing, descending and my first stall. It took a bit of coaxing on Don's part to talk me into it. Everything you ever hear about stalls is bad. Plane stall equals plane crash in my book, that is until Don demonstrated what it was and how it worked. I was able to perform a few stalls myself, and we moved on.

It was fast becoming dark, and we were heading for home. In the twilight of the setting sun, Don asked me an interesting question. "Okay, we're ready to go home. Where's the airport?" Looking across the horizon, I knew "where" the airport was, but I couldn't find it. My quickly darting eyes consistently missed that regular white and green flash of the airport beacon, as well as the regular outline of the runway lights. After three minutes of sweat, Don instructed me on how to properly scan the horizon, and we began our descent and entry into the pattern.

While he explained the mechanics of the left-based pattern, Don told me what I should be doing. Listen to the radio, drop the rpm, slow down, watch for traffic, lower the flaps 10 percent, and on through final and to landing.

The landing was smooth. I was busy checking my speed and approach, so busy that I wasn't able to figure out how much of the landing was actually done by me, and how much was done by Don. I was convinced that Don had done most of it, but I was also sure I made some contribution.

But never mind, I had just completed the first step of my exciting new hobby. I was charged up, ready to take on the world! I scheduled my next two appointments and was ready to start on the rest of the 40-plus hours it would take to get my ticket. *P&P*

TIGER BACK

When we heard the news in early 1990 that a small company in Mississippi planned to revive the beloved Grumman American Tiger, we were elated. We were also a little skeptical of the company's chances for success. We were elated because the Tiger was an airplane that didn't deserve to die. It was always a fast, efficient, sporty and relatively comfortable little machine that did itself proud in performance and sales back in the late '70s. During its short, five-year production run, it sold some 1300 copies and made more friends and influenced more pilots than it had any right to, considering the formidable fixed gear and retractable competition of the day.

We were skeptical because, as much as we hoped someone could breathe new life into the Tiger, the timing seemed all wrong. By January 1990, giant Cessna was out of the piston business altogether, a recently-revived Piper already was beginning to have a new set of serious problems, Beech and Mooney had scaled back production and the industry as a whole was selling less than 10 percent of what it sold in the late '70s.

I'm happy to report that as of September 20 when this issue of *PLANE & PILOT* was going to press, American General Aircraft Company of Greenville, Miss., had delivered its 77th new Tiger. Operating from a huge facility on the Greenville Airport hard by the banks of the Mississippi River, AGAC has defied the odds and succeeded in producing an upgraded version of the lovable Tiger. American General currently is producing new Tigers at the rate of 14 a month, and they're shooting for an eventual rate of 20 a month, about one airplane per work day.

While it's true that the sale of 77 airplanes does not a company make, it goes a long way toward proving that resurrections can work, especially if you have the right airplane. If nothing else, the Tiger's up-front success suggests there's still a reasonable market for a fixed-gear four-seater. With all Pipers and Cessna piston products out of production, only Maule builds a four-seat airplane with wheels in the wind.

The driving force behind the Tiger revival is James E. Cox, a man who began his rescue mission back in 1987. Cox almost singlehandedly negotiated the sale of type certificates, tooling and design drawings for the Gulfstream-American Tiger, Cheetah and Trainer singles and the Cougar twin from Allan Paulson. Then, he concluded a lease with the city of Greenville for a gigantic, ultra modern, former Boeing plant at the local airport. In total, Cox and company leased some 500,000 square feet of space at the airport.

In exchange for all his efforts, Cox got to watch the first new Tiger roll out on April 21, 1990, and the rest, as hardly anyone ever says anymore (thankfully), is history.

To his credit, Cox wisely chose not to attempt to reinvent the wing during the resurrection process. Instead, he elected to retain all that was good about the Tiger (and that was practically everything) and not try to fix what wasn't broken. In deciding what he should change, Cox elicited advice from the American Yankee Association, a group of fanatical Tiger/Cheetah/Trainer owners. They agreed the basic design was sound, but made several key suggestions.

Accordingly, the new Tiger is virtually identical to the original in aerodynamics and construction, blessed with bonded, rivetless wing skins, an aluminum honeycomb cockpit framework and the same 180 hp Lycoming O-360-A4K powerplant. For that reason, it's fair to assume the revised model will perform very close to the earlier Tiger. The new airplane still employs a main wing spar that's a three-inch diameter piece of steel tubing, a component that looks strong enough to support an 8000-pound Caravan rather than a 2400-pound Tiger.

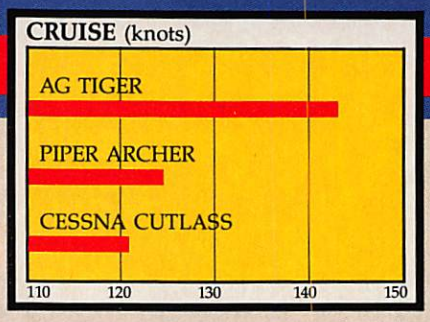
AGAC did make some changes to components and systems, however, all for the better. The original 75-inch McCauley prop has been replaced by a 76-inch Sensenich, deleting the McCauley's mandatory 200 hour inspections and the latter's yellow vibration arc between 1850 and 2200 rpm. The electrical system has been upgraded to 24 volt, the better to support an air conditioning system Cox hopes to offer at some future date. The red rotating beacon has been flushed to the top leading edge of the vertical stabilizer, and the single, cowl-mounted landing light has

With only 180 hp under the cowling and wheels permanently down and locked, the Tiger cruises quicker than some 200 hp retractables.

TIGER, FLIGHT

The return to manufacture of the lovable Tiger is good news all around: It's the same sporty, speedy, fun-flying four-seater as before —with some nice upgrades

By Bill Cox
Photography By James Lawrence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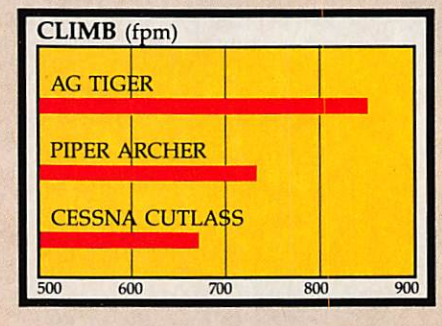
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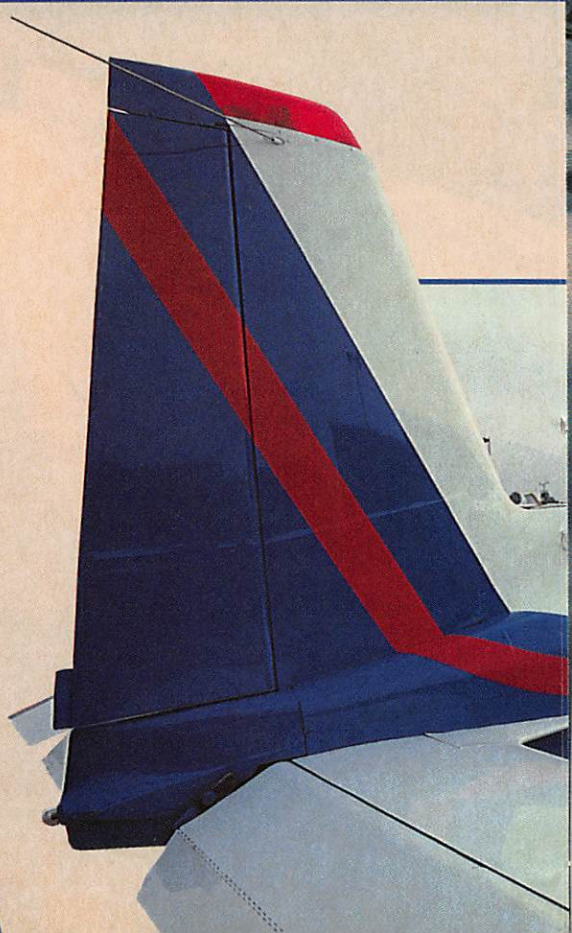

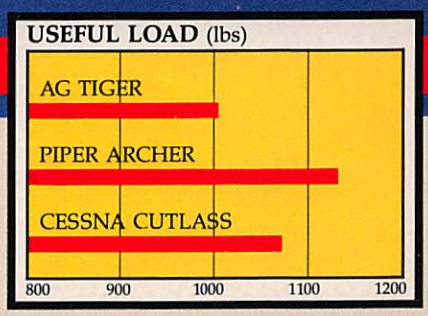

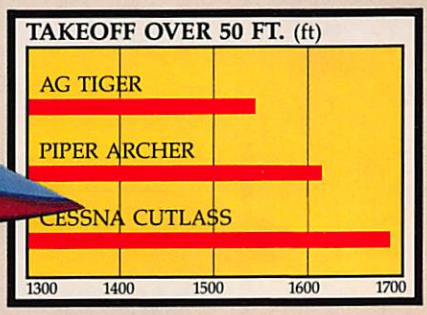

TOP: Trimmed and leaned at 8500 feet, our test Tiger pulled 144 knots on only about 10.7 gph. ABOVE: A non-steerable nosewheel directs the Tiger on the ground; asymmetric braking steers it. FAR LEFT: Still a fast, fun-flying plane for family vacations. LEFT: One of the new features is a faired-in rotating beacon at the top of the tail.

TOP: Flywriter Bill Cox says "It's unquestionably the most agile, non-aerobatic production airplane available in the United States and a sheer delight to fly." BOTTOM: For 1992, the Tiger's panel is all-metal and all-electric, a far cry from the original fiberglass panel of the '70s. The all-King stack includes KX 155 radios, transponder and ADF.

given way to two smaller ones on the wingtips, out of vibration's way.

American General also fitted the Tiger with a new cowling that features double-wing, split bowl, carbon fiber construction and can be entirely removed by pulling a dozen or so screws. The airplane's wheel fairings, its dorsal fin and all other formerly Royalite parts have been replaced with more durable fiberglass.

Inside the Tiger's cockpit, AGAC improved nearly everything in sight. The new panel is made of metal rather than fiberglass and it's been revised and rearranged with new, internally lit, electronic instruments, including the OAT. Power controls have been designed into a big-airplane-style quadrant. (One slight source of confusion—you'll see three levers on the power quadrant, an unusual number for a fixed pitch airplane. The left lever is carb heat, then comes throttle and finally mixture on the right.) There's also an electronic engine primer to replace the old plunger knob. The front seats are provided with five-point, competition-style harnesses, and the seats themselves have been totally redesigned to incorporate extra-padding and greater adjustment.

Two things you won't see in a Tiger are a cigarette lighter or ash trays. Jim Cox felt strongly that the front office of an airplane is no place for live fire, so he took away the incentive.

Other changes for the better that you can't readily see include a more efficient heat and ventilation system and weather proofing around the sliding canopy that's been improved to a more durable, higher quality material in an effort to keep out wind and water.

That's assuming you want to keep out the wind. If you'd like to fly a convertible, the Tiger may be flown with the canopy slid back about a foot at speeds up to 112 knots IAS. It's a trick best done with headsets, as the noise level with the canopy open is abusive, but it's loads of fun and certainly something you won't see repeated in Piper, Cessna, Beech or Mooney products.

To appreciate the rationale behind the revived Tiger, you have to understand that the original airplane, like the Yankee before it, was created more for fun than anything else. Certainly, that doesn't mean a Tiger can't be used effectively on business missions. Many serve very well in that capacity. Even a Pitts S1T could be applied to business flights if conditions were right. The whole concept of the Tiger, though, was as a fast, fun-flying airplane for family travel. The combination of fixed-gear reliability, fixed-pitch prop simplicity, a sliding hatch and quick handling for frustrated

TIGER, TIGER

fighter pilot types plus four seats to haul the spouse and kids made the Tiger the perfect fun/family traveling machine.

Danforth Aviation in Santa Monica, Calif., is the Tiger store in my neck of the sky, and Danforth sales manager Stan Snyder volunteered his demonstrator for *PLANE & PILOT'S* editorial scrutiny. Standard empty weight on the new Tiger is listed as 1398 pounds, but plan on at least another 100 pounds of avionics and options. This leaves about a 900 pound useful load and 594 pounds after adding full fuel. No, that's not four full-sized folks worth, but it's no worse than the payload of most other four-seaters, be they fixed-gear or retractable. The new Tiger makes a great two-couple airplane, possibly explaining why it remains so popular as a rental at FBOs across the country.

From the second you walk up to a Tiger, the airplane seems to exude fun. Climb up on either wing walk, slide the hatch back, step down into the cockpit and there's a definite feeling of wrapping yourself in an XKE roadster or a Lotus. The airplane has that kind of happy, carefree air about it, especially when you start the engine and go trundling down the ramp with the hatch slid full back, a configuration not dissimilar to a Porsche Targa.

Taxiing a Tiger with the nonsteerable, sprung steel nosewheel out front takes some getting used to if you've been raised in airplanes with the third wheel linked directly to the pedals. Pushing on the rudder pedals doesn't accomplish much on the ground, since there's no connection between the rudder and the nosewheel. Asymmetric brake application steers the airplane on the ground. Once you adjust to the difference in response rate, the free-swiveling nosegear provides more directional control than you can imagine, allowing the Tiger to spin around taildragger style in its own wingspan.

The Tiger's primary talent becomes obvious from the moment it takes to the air. It's unquestionably the most agile, nonaerobatic, production airplane available in the United States and a sheer delight to fly. Roll rate is a comparatively quick 70 degrees/second, pitch authority is well matched to the fast ailerons and the light rudder keeps things coordinated with a minimum of effort.

Back in the '70s, I flew with a factory pilot in an experimental Tiger that Grumman American was considering certifying in the aerobatic class. With the reassurance of parachutes and a quick release on the canopy, I flew rolls, loops, hammerheads and an Immelmann or two, basically the gamut of low G inside maneuvers. Sadly, Grumman American

American General Tiger

SPECIFICATIONS

Base Price: $94,250
Price as tested: $118,745
Engine make/model: Lycoming O-360-A4K
Horsepower @ rpm @ altitude: 180 @ 2700 @ SL
Horsepower for takeoff: 180
TBO hours: 2000
Fuel type: 100/100 LL
Propeller make/type: Sensenich 76-in. fixed pitch
Landing gear type: Tricycle
Max ramp weight (lbs): 2408
Gross weight (lbs): 2400
Max landing weight (lbs): 2400
Empty weight (std) (lbs): 1398
Equipped weight (as tested) (lbs): 1500
Useful load (std) (lbs): 1002
Useful load (equipped) (lbs): 900
Payload (full std fuel) (lbs): 594
Fuel capacity std (gals): 53
Usable fuel std (gals): 51
Oil capacity (qts): 8
Wingspan: 31 ft. 6 in.
Overall length: 22 ft.
Height: 8 ft.
Wing area (sq.ft.): 140
Wing loading (lbs/sq.ft.): 17.1
Power loading (lbs/hp): 13.3
Wheel base: 5 ft. 5 in.
Wheel track: 8 ft. 3 in.
Wheel size: 6.00×6
Seating capacity: 4
Cabin doors: 0
Cabin width: 42 in.
Cabin height: 45 in.
Baggage capacity (lbs): 120

PERFORMANCE

Max level speed (knots): 148

Cruise speed (knots):

	Altitude	Best Economy
75% power:	8,500	143
65% power:	10,000	138
55% power:	11,500	123

Max range (reserve) (nm):
75% power: 572
65% power: 622
55% power: 700

Fuel consumption (gph):
75% power: 10.7
65% power: 9.5
55% power: 8.8

Estimated endurance (65% power) (hrs): 4.5
Stall speed (flaps up) (knots): 53
Stall speed (flaps down) (knots): 56
Best rate of climb (fpm): 850
Rate of climb (8000 ft.) (fpm): 415
Service ceiling (ft.): 13,800
Takeoff ground roll (ft.): 865
Takeoff over 50 ft. (ft.): 1550
Landing ground roll (ft.): 410
Landing over 50 ft. (ft.): 1120

shut down the piston line shortly after my aerobatic flight, so there was nothing to write about, but the airplane was pure fun in all modes.

Climb should score about 850 fpm if you're doing everything right on a sea level standard day and flying at the Tiger's max gross weight of 2400 pounds. I only saw that figure once or twice, and then with two people up front during my flights. Density altitude was well above sea level, however. More normal climb rates were 750 to 800 fpm. The airplane scored about 350 to 400 fpm through 8000 feet on one trip to 10,500 feet for some tall cruise checks. In truth, the Tiger's short 31.5 foot wing doesn't make it a strong high altitude airplane (service ceiling is 13,800 feet), but the new Tiger does very well in the 5000 to 8000 foot range.

As it turned out, my first flight in the Tiger was an air-to-air formation photo session alongside photographer Jim Lawrence who shot the pictures that accompany this article. The photo ship was a Cessna Cutlass RG, and I had no trouble at all keeping up with the retractable Cessna during the shoot. In fact, on the way back to Van Nuys airport, "my" Tiger easily outran the Cutlass RG.

Later, I flew the Tiger in more normal mode on a short cross country with two people up front. Granted encouragement from only 75 percent of its 180 horses, the Tiger proved capable of meeting its book specs without even breathing hard. Probably because of the light load, I consistently managed to beat book figures several times. Down low at 4500 feet to stay under the Los Angeles TCA, I saw a true 140 knots on max cruise power. Later, up at 6500 feet (that yielded a density altitude of nearly 8000 feet), the top number was 144 knots. That's hustling right along for an airplane with fixed feet and a carbureted, 180-hp engine.

Efficiency was a primary goal on the Tiger, and there's never been any argument that it's the fastest fixed-gear production machine in the sky on so little horsepower. At max cruise, you can expect to burn about 10.7 gph in exchange for a quick 143 knots (164 mph). That works out to 15 smpg, certainly not as good as the family Mazda, but better than anything built in a factory that flies with wheels down and welded.

Unlike some other airplanes, Tiger economy doesn't seem to benefit much from lower power settings, just as well since it always has seemed a little dumb to buy a fast airplane to fly slow. Up high (11,500 feet) where 55 percent is about all there is, the Tiger will deliver 123

(Cont'd on page 75)

Six seats (the back two are better used for cargo) and a 420-shp turbine engine with 3500-hour TBO make the Turbo Maule a true short-field hauler.

THE ROCKET

Equipped with an Allison gas turbine to turn the fan, this STOL taildragger gives new meaning to the terms "climb rate" and "short-field operations"

Text And Photography By Phil Nowak

The Turbo Maule has a combination of three-bladed propeller, extra-long nose, large turbine exhaust tubes, fabric-covered fuselage and tailwheel that give it a distinctive look. But that's only where the story begins.

Maule Aircraft are well known for their short take-off and landing (STOL) characteristics. If you saw the movie "Air America" starring Mel Gibson and Robert Downey, Jr., you'll remember a scene in which Gibson lands a Turbo Helio Courier into a jungle landing strip that appears to be 200-feet long. Later, he turns the airplane around and takes off from the same strip. The Turbo Maule could easily have done the same thing.

Turbo Maules are made in Moultrie, Ga. Ray Maule, the son of company founder and president B.D. Maule, is a factory test pilot, a check pilot and a flight instructor. He also handles sales and public relations.

Our demonstration plane, N420TP, had been completely refurbished. Glistening in the late afternoon Georgia sunshine, N420TP had the look and smell of a new airplane. Doors on both sides provide easy entry. Our bird also had a large cargo door on the right side. While N420TP had six seats, there wasn't any legroom in the last row. This area is better used for cargo.

Once inside, you'll notice the long cowling leading out to the Hartzell constant-speed, full feathering reversible propeller. You can easily see over the nose while taxiing, even though it's a taildragger. The long nose houses an Allison gas turbine 250 B17C. This engine develops 420 shp. In the Turbo Maule, the engine is derated to 369 continuous horsepower. Unlike most taildraggers, N420TP has a control wheel instead of a stick.

Looking at the panel, there are several differences from aircraft with similar engines. Throttle, mixture and propeller controls are absent. Instead there's a power lever and a condition lever where you'd expect the throttle and mixture controls to be. There are two rpm gauges; one for the propeller, the other showing engine rpm in percentages. There's a turbine outlet temperature (TOT) gauge and a torque meter. The rest of the panel is similar to those in most aircraft.

TIGER, TIGER

(Cont'd from page 39)

Aircraft Comparison Chart

Aircraft make/model:	1992 AG Tiger	1991 Piper Archer	1984 Cessna Cutlass
Price:	$118,745	$118,205	$56,000*
Max level (knots):	148	129	123
Cruise (knots):	143	125	121
Stall (knots):	53	49	48
Fuel 65% (gph):	9.5	9.5	9.5
Rate of climb (fpm):	850	735	680
Service ceiling (ft):	13,800	13,650	17,000
Takeoff over 50-ft obstacle:	1550	1625	1690
Landing over 50-ft obstacle:	1120	1390	1335
Useful load (lbs):	1002	1134	1070
Power loading (lbs/hp):	13.3	14.1	14.1
Wing loading (lbs/sq.ft.):	17.1	15.8	14.4
Engine horsepower:	180	180	180
Propeller type:	Fixed	Fixed	Fixed
Landing gear type:	Tri	Tri	Tri
Fuel capacity (gals):	51	48	54
Seating capacity:	4	4	4

*Used 1984 model

knots (141 mph) on 8.7 gph, only 16 smpg. In other words, you might as well run it at 75 percent all the time, since there's no significant advantage to flying slower in hopes of saving fuel.

With 51 gallons in the tanks, you can plan your flights for 3.5 hours plus reserve, enough to let you trek almost 500 nm down the road at a single sitting. Three-and-a-half hours is about as long as most people are willing to sit in one spot anyway, so two of those legs means you can manage a fairly easy 1000 nm a day.

Stalls proved to be about as harmless as it's possible to make them. Ease the power off, lower the flaps and pull the yoke full back in your lap and the Tiger eventually will settle wings level through the horizon, then bob its nose innocuously up and down waiting for its pilot to stop fooling around. Put your feet flat on the floor, and you can keep the wings level with ailerons alone, even with the yoke held full back in a deep stall. I tried a half-dozen stalls in a variety of configurations and never succeeded in getting the Tiger mad at me. Forgive me, but the Tiger refused to bite.

The airplane also is one of those rare machines that resist really bad landings unless you commit the unpardonable sin of landing on the nosewheel. The fiberglass main gear legs absorb amateurish touchdowns and the S-shaped sprung steel nosegear tolerates all but the most hamhanded abuse. Hold 70 knots down final, and the elevator retains excellent authority for the flare.

In view of the current dearth of fixed-gear singles, Jim Cox knew there might be a market for his airplane at the major flight schools, and he was right. Florida Institute of Technology ordered 15 Tigers right out of the starting gates, Vincennes University of Indiana purchased 12 and Cox recently concluded a contract with Cleveland, Mississippi's own Delta State University for five more airplanes. To date, American General has enlisted the support of 34 domestic dealers and seven more international dealers.

Like anyone who's willing to risk making a small fortune by starting with a large one, Cox is cautious about future plans. He intends to let the Tiger make its own success before launching new projects, but if first year sales are any indication, American General Aircraft Company soon may become a name to be reckoned with in general aviation. Base priced at $94,250 and out the door at around $110,000, the Tiger already has generated some $12 million in sales.

In the spirit of *glasnost*, however, Cox currently is negotiating with the Russians on a possible joint venture to build the Cougar in a former MIG plant. The Cheetah and Trainer are still shelved, but who knows what might happen in a year or two? For the nonce, the Tiger is here and now, and it's great to have it back. *P&P*

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