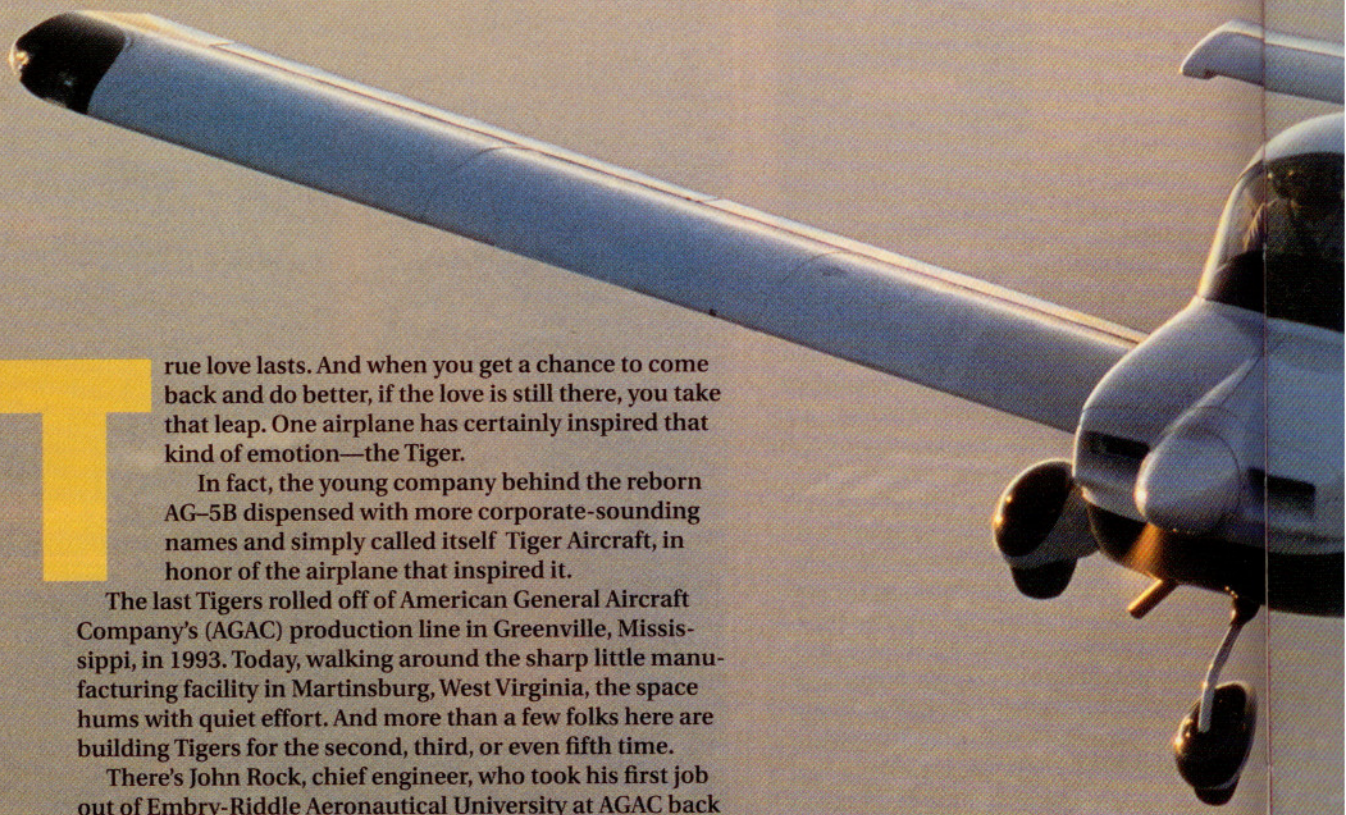
Tiger Aircraft AG–5B Tiger

Leaping back to Life

An old favorite is new again

BY JULIE K. BOATMAN



True love lasts. And when you get a chance to come back and do better, if the love is still there, you take that leap. One airplane has certainly inspired that kind of emotion—the Tiger.

In fact, the young company behind the reborn AG–5B dispensed with more corporate-sounding names and simply called itself Tiger Aircraft, in honor of the airplane that inspired it.

The last Tigers rolled off of American General Aircraft Company's (AGAC) production line in Greenville, Mississippi, in 1993. Today, walking around the sharp little manufacturing facility in Martinsburg, West Virginia, the space hums with quiet effort. And more than a few folks here are building Tigers for the second, third, or even fifth time.

There's John Rock, chief engineer, who took his first job out of Embry-Riddle Aeronautical University at AGAC back in 1990. And Loyd Montague, once director of research and development for AGAC, who ran an FBO in Greenville after that company closed its doors in January 1994. Montague is now a vice president at Tiger Aircraft, overseeing engineering and operations. And then there's Harry Eckert, who holds the distinction of having worked for each of the four companies that previously produced Tigers—American Aviation, Grumman American, Gulfstream American, and American General—and who test-flew some of the first

PHOTOGRAPHY BY MICHAEL P. COLLINS

Tigers in 1970. These engineers, technicians, and pilots came back for more because they want to see this airplane succeed.

"The best thing was the Tiger," says Montague. "I enjoyed being associated with that airplane." So when another returning Tiger fan called and asked him to come to Martinsburg, the chance to fly Tigers again brought Montague back. The loyal one who talked him into it? None other than Robert Crowley, CEO and acting president of Tiger Aircraft—and the former CEO of AGAC.

Dealers have returned to the model as well. Herb Hortman, owner of Hortman Aviation, based at the Northeast Philadelphia Airport, took delivery of the first new Tiger in December 2001. The Hortmans have sold the Tiger before: At another Tiger event at EAA AirVenture last summer, Hortman's mother recalled ferrying aircraft made by American Aviation from the plant in Ohio starting back in the late 1960s, eventually including the Tiger.

FletchAir distributed parts for used Grumman aircraft with Tiger stripes after American General left the business in 1994, and it will continue to do so under an agreement with Tiger Aircraft. However, it too is betting on the viability of the new machine: David Fletcher took delivery of new Tiger number two for his Tiger Aircraft dealership at Houston's William P. Hobby Airport.

The new players in the Tiger pack are from the Far East. Seventy percent of Tiger Aircraft is owned by Taiwanese investors, notably Tong Lung Metal (TLM), a manufacturing conglomerate that founded its aerospace division four years ago at a breakfast spent discussing the merits of resurrecting a U.S.-designed and-built aircraft. High-level contact between Sen. John D. Rockefeller (D-W.Va.) and the Taiwanese ministry of economic affairs was instrumental in the deal, which is expected to bring an estimated total of $30 million to the Martinsburg area this year.

A new panel (above) incorporates Garmin avionics and an S-Tec autopilot. No rivets mar the sleek wing (above left) or control surfaces.

From AGAC to present

It's difficult to talk about the new Tiger AG–5B without stories of the model upon which it is based, as virtually the same heart beats beneath those wings.

When AGAC took over the drawings for the AA–5B, the previous incarnation of the Tiger, it decided to make a few changes. First, the aircraft's electrical system was upgraded to 24 volts. Then the throttle and mixture controls morphed into a true throttle quadrant, and the instrument panel gained new avionics to reflect the state of the art in the early 1990s. There were changes to the environmental system and to the strobe—enough changes to warrant a new model designation and type certificate.

"My job was to make those changes," recalls Montague. Then he performed the first test flight of the Tiger at AGAC, and test-flying is a role he continues at Tiger Aircraft. "I'm looking at everything—the rigging to see that the cable tensions are right and the proper travels are set. I'm also gonna check the weight and balance. If the weight and balance is correct, anything else that happens—you can get the airplane back and recover." Montague has learned to focus on the little things, like checking the wind noise to ensure that the fit and finish is correct on the airframe.

All of his accumulated skill translates directly to his job today. He knows the Tiger and can tell quickly when a new airplane off the line deviates from the norm. Montague and John Rock also learned a lot about trying to bring an aircraft to market under pressure. Preparing for the rollout of the first Tiger at AGAC, Montague recalls working two days straight,

while Rock put 110 hours on the time clock that week. "We're not doing that again," says Rock. A more measured pace suits Rock much better. "We said to ourselves, 'Let's make sure we do everything that needs to be done.'"

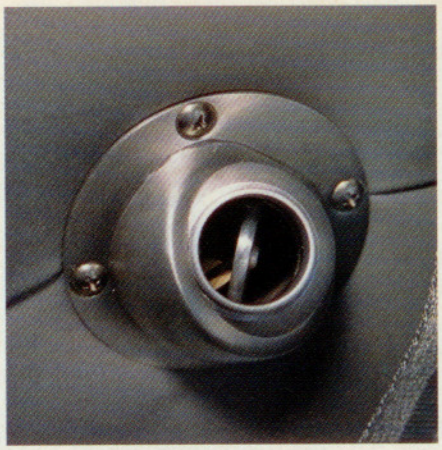
Another kind of expertise helped Tiger Aircraft in the physical setup of its assembly plant. When AGAC shut down its Greenville line, Harry Eckert was left in charge of the documents and tooling in storage. He also acted as a self-employed consultant to the state and legal entities during the shutdown, and he supplied copies of service letters and service kits to pilots of American General aircraft. He fulfills a similar role at the new company, taking care of the machine shop, tool room, and composite room. Eckert gained experience in composites during stints at Learjet, working on the Lear Fan and then the cabin and cockpit structures for the Piaggio Avanti in the 1980s.

Although now 68 and no longer flying, Eckert is clearly in his element. "It's kind of boring being retired, and I have a lot of information—and in some cases I'm the only one in the world left to trace the documentation for a part."

Moving the parts from Greenville took a lot of effort, but retaining the original tooling was important to the Tiger Aircraft plan. The Martinsburg location operates as an assembly plant, with suppliers across the country building parts for the aircraft. The wings of the Tiger are aluminum bonded to the wing ribs; this is not a riveted airplane. The bonded structures, including the wings, fuselage, and all control surfaces, are constructed by ChemFab in Hot Springs, Arkansas. And, as you may have guessed, ChemFab supplied these parts to AGAC from 1989 to 1994, according to Eckert.

Tiger Aircraft is still operating with the type certificate only—it should acquire a production certificate by this spring. In the meantime, each new Tiger off the line must be separately flown and approved by FAA MIDO (manufacturing inspection district office) representatives. There were seven aircraft on the line at the time this piece was written, with three awaiting delivery. We flew model number one, the primary test aircraft, before its departure to Hortman Aviation.

Changes to the airplane lie mostly in the panel and interior. The newly engineered panel boasts a mid-level Garmin stack, including a GMA 340 audio panel, twin GNS 430 GPS/coms, and a GTX 327 transponder. Replacing one of the 430s



The controls for the simple fuel system sit prominently in the center console.

with a 530 is one of the few options offered, as the company favors delivering a solid, IFR-equipped model with few modifications. An S-Tec System Thirty two-axis autopilot provides a reasonable backup to the vacuum system, as it replaces the turn coordinator and steers from rate-based information.

The updated interior follows the new, unwritten standard set for production four-seat airplanes, with its leather, luxury-car styling—even leather-wrapped yokes for added style and comfort.

Tiger kept other good updates made in the 1990s, such as the Sensenich prop, as well as hallmarks of the entire Cheetah/Tiger line: a simple fuel system, a canopy you can leave fully open during taxi and open partially in the air, and seats that fold down for cargo. Fuel and oil pressure information comes to the panel via transducers rather than direct lines, eliminating the hazard of a catastrophic fluid leak into the cabin.

The construction of the Tiger is straightforward and tough. A super-thick main wing spar carries through the fuselage for sturdiness. With the pilot and front-seat passenger riding on top of the spar, Eckert notes, "that's the safest place in the whole aircraft." He also mentions that "the bonded structure is four to six times stronger than a riveted structure," as each rivet would introduce some inherent weakness into the airframe.

For all its strength, there are a few Tiger quirks. On the ground, the 90-degree castering nosewheel allows for tight turns once mastered—it's not that hard—and in the air, light aileron forces ask for some adjustment in technique if you're used to piloting more truck-like training airplanes. During a venture in the wake of our photo ship while shooting the air-to-airs for this piece, we liked those control forces for their responsiveness—as well as the rather high wing loading for an aircraft of its class.

Configuration for takeoff included the first increment of flaps (15 degrees) and a rotation speed of around 60 knots. Our ground roll was less than 1,000 feet, at slightly above standard conditions (20 degrees Celsius and an airport elevation of 557 feet msl). The Tiger climbed out at 600 to 800 fpm until 9,000 feet and then slowly settled to 400 fpm by 10,500 feet, where we stopped to do our cruise speed assessments.

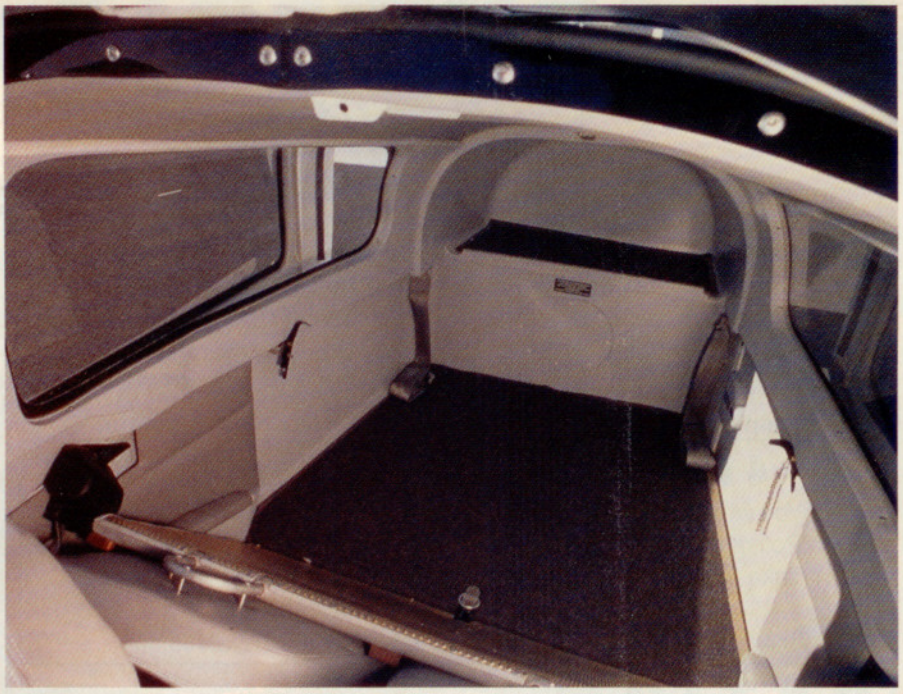
At that altitude, with the outside temperature hovering around zero degrees C, we saw an indicated airspeed of 109 kt, with 132 kt true. Full throttle at this altitude translates into about 65-percent power. Back down at 8,500 feet, an indicated airspeed of 114 knots gave us 132 kt true, at roughly 70-percent power. Tiger claims a top speed of 148 kt true and cruise speeds around 143 kt at 8,500 feet using 75-percent power. Fuel flows at 75-percent power hover at a little less than 11 gallons per hour. Redline on the Lycoming O-360-A4K is set at 2,700 rpm, at 180 horsepower.

An approach-to-landing stall during our testing broke straight ahead at 53 kt, and even a slightly anemic recovery procedure on our part led to less than 100 feet of altitude loss. While the wing is fairly fast, it doesn't produce bank-vault descent rates when the engine quits. Best-glide speed is 70 kt, and we saw a corresponding altitude loss of 650 to 700 fpm. Slips are approved with full

flaps in the Tiger, and we did a few for fun. They're worth practicing, because you don't want to carry a lot of extra speed on short final, as we found out during our landing tests.

A normal approach was made at 80 kt, slowing to a speed of 60 kt over the runway. Any extra speed at this point translates into a lot of float, according to Bill Crum, demo pilot and sales manager for Tiger. The landing roll was a good deal shorter than the takeoff roll, although the touchdown was a little firm. Note to future Tiger owners: Hold the nose off even after you feel like you've lost elevator authority. You still have some, and if you don't the nose comes down as if a linebacker hopped on the cowl.

Changes to panel and interior have added a little more than 100 pounds to basic empty weight, which now stands at 1,500 pounds. The max gross weight remains at 2,400 pounds, for a useful load of 900 pounds—or full tanks, three people, and 84 pounds of bags. That said, the ample cargo area may lead you to use the Tiger as a two-person-plus-serious-recreation-equipment machine instead.



A large cargo area grows in size when the rear seats are folded forward (top). The new facility (bottom) in Martinsburg is clean and bright and filled with memories in the form of tooling from the AGAC production line.

With 1990 to 1993 models going for between $70,000 and $115,000, depending on equipment and condition, the price on a new Tiger that is 10 or more years younger looks pretty competitive at $219,500—especially when you factor in that the price includes factory training through the private certificate, if you're not already a pilot, or to complete instrument training for those already certified. The warranty covers maintenance for one year, including the first annual, and the airframe for three years (extended warranties on the engine, avionics, and other components are through those manufacturers).

Tiger Aircraft is banking on the fact that loyal aficionados of the line will leap at the chance to fly a new Tiger. But will the company follow through where others have stumbled? That depends on a lot of factors. But those bringing the airplane back to market have already won, in a

i Links to additional information about the AG-5B Tiger may be found on AOPA Online (www.aopa.org/pilot/links.shtml).

sense. "Almost anyone who flies the Tiger falls in love with it," says Eckert. He knows. He's one of many who have found that love all over again. AOPA

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SPECSHEET

Tiger Aircraft AG–5B Tiger

Base price: $219,500
Price as tested: $219,500

Specifications

Powerplant	Lycoming O-360-A4K, 180 hp @ 2,700 rpm
Recommended TBO	2,000 hr
Propeller	Sensenich, 2-blade, 76-in dia
Length	22 ft
Height	8 ft
Wingspan	31 ft 6 in
Wing area	140 sq ft
Wing loading	17.1 lb/sq ft
Power loading	13.3 lb/hp
Seats	4
Cabin length	50 in
Cabin width	40 in
Cabin height	46 in
Empty weight, as tested	1,500 lb
Maximum gross weight	2,400 lb
Useful load, as tested	900 lb
Payload w/full fuel, as tested	594 lb
Fuel capacity, std	52.6 gal (51 gal usable) 315.6 lb (306 lb usable)
Oil capacity	8 qt
Baggage capacity	120 lb, 17.6 cu ft

Performance

Takeoff distance, ground roll	865 ft
Takeoff distance over 50-ft obstacle	1,550 ft
Max dem crosswind component	15 kt
Rate of climb, sea level	850 fpm
Maximum level speed, sea level	148 kt
Cruise speed/endurance w/45-min rsv, std fuel @ 75% power, best economy (fuel consumption), 8,500 ft	143 kt/4 hr (10.7 gph)
Service ceiling	13,800 ft
Landing distance over 50-ft obstacle	1,120 ft
Landing distance, ground roll	410 ft

Limiting and Recommended Airspeeds

V_X (best angle of climb)	80 KIAS
V_Y (best rate of climb)	90 KIAS
V_A (design maneuvering)	112 KIAS
V_{FE} (max flap extended)	103 KIAS
V_{NO} (max structural cruising)	142 KIAS
V_{NE} (never exceed)	172 KIAS
V_R (rotation)	55-60 KIAS
V_{S1} (stall, clean)	56 KIAS
V_{SO} (stall, in landing configuration)	53 KIAS

For more information, contact Tiger Aircraft LLC, 226 Pilot Way, Martinsburg, West Virginia 25402; telephone 877/306-8100 or 304/267-1000; fax 304/262-0069; or visit the Web site (www.tigeraircraft.com).

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