



When the sport pilot/light-sport aircraft (SP/LSA) final rule arrives on the aviation scene, this top-of-the-line model from the long-time Southern California ultralight manufacturer may well be one of the first available ready-to-fly light-sport aircraft (LSA). Quicksilver co-owner Carl von Hirsch has indicated the company will build the GT 500 as a ready-to-fly Special LSA. It will also offer the strut-braced MX Sport IIS as a LSA entry.

You might say the GT 500 is pre-approved; in 1993 the tandem, two-seat

aircraft received both a type and production certificate in the Primary Category (see sidebar). It's pretty safe to say that the design will quickly pass muster under the FAA-mandated LSA consensus standards under development by ASTM International.

You can buy a GT 500 right now, even ready-to-fly, but until SP/LSA is made law, you'll have to operate it with a minimum of a recreational pilot's certificate unless you're flying it under exemption as an ultralight trainer.

A Grand Tour of the GT 500

Tom Price and Dave Cronk, two of the ultralight/lightplane industry's most experienced engineers and designers, created the GT 500, and Quicksilver introduced it at the Sun 'n Fun EAA Fly-In in 1990. Dave was one of the original designers with Eipper Formance, the hang glider company that first marketed the foot-launched Quicksilver glider. The glider later evolved into the powered Quicksilver ultralight and gave birth to the company we know today as Quicksilver Aircraft Manufacturing.



QuickSilver's Qualifier

QuickSilver's GT 500 is ready for sport pilots

In the automotive world, GT stands for Grand Touring and that may be an appropriate comparison for the GT 500 from QuickSilver Aircraft Manufacturing. With the unlimited view from the front seat of this tandem two-seater, touring in the GT 500 is definitely a treat. **DAN JOHNSON**

The GT 500 followed on the success of Cronk and Price's single-place GT 400, which has sold more than a thousand units. After a couple of years of careful design deliberations, the duo followed with the GT 500. Since it came on the market more than a decade ago, the plane has retained its underlying design philosophy of being a higher-end "ultralight" while changing in subtle ways—for example, adding a zip-up full enclosure for those who enjoyed enclosed cockpit flying as opposed to open-air ultralight flying.

One obvious change is the presence of the 80-hp, four-cylinder, four-stroke Rotax 912 engine, though you can still order the machine with the 65-hp Rotax 582.

Bells and Whistles

The GT 500 is actually a light airplane ahead of its time. The aircraft offered for this evaluation flight sported a well-equipped full panel with tachometer, water temperature gauge, Hobbs hour meter, magnetic compass, altimeter, vertical speed indicator, front and rear airspeed indicators, plus oil temperature and pressure gauges. It had

the optional zip-up enclosure.

In the cockpit several levers allow you to optimize your flight. You'll find a trim lever to the left of the front yoke base, a hand brake on the right, plus throttles on the right in both front and rear seats. The front seat has a choke and primer plus electrical switches.

A mechanical flap handle on the floor to the right of the main boom tube is easier to operate for most pilots than the overhead lever used in some designs. Overhead levers demand an awkward motion; however, engaging the flaps in the GT 500 still requires moderate physical exer-



tion. Quicksilver's factory pilots will tell you to keep your hand on the flap lever as you retract it. Failure to observe this advice will cause air loads on the flaps to snap the lever forward aggressively.

In the GT 500 you can lean far back in the seat and look up into the wing root to see fuel quantity. Because airplane fuel gauges, including those in general aviation (GA) airplanes, seem to be notoriously inaccurate, it's nice to be able to perform this visual check.

The instrument panel in this GT 500 had a shiny, satin-finish aluminum. It looked high tech, but it produced a significant reflection in the windscreen when flying with the sun at my back. A dull black panel is often preferred exactly for this reason.

With its flexible plastic doors, this GT 500's noise level was tolerable. To prevent hearing loss, I wore a headset. But the 912 engine is less noisy than many two-stroke powerplants.

Getting in and out of the GT 500, especially the back seat, can require some contortions. Jon Thornburgh, who often instructs from the rear seat of a GT 500, refers to his technique for getting into the rear seat as his "snake entry." As he demonstrated, he worms his way around the aircraft's hefty structural tubing on either side of the aft seat. He uses the large tubes to ease his upper torso inside, working his way to the back of the seat. Then he draws his legs inside. It just doesn't work well to try to put one's feet in first. The front seat is considerably easier to enter because there are no tubes blocking the entrance.

Let's Go Flying!

The view from GT 500's front seat is wide open in every direction. Todd Ellefson, Quicksilver sales director, had this demonstrator GT 500 fitted with a skylight that expanded the view even further. I felt confident that the runway

was traffic-free before takeoff.

As I've often found on light aircraft, the 80-hp Rotax 912 engine is more power than needed. I understand the desire for four-stroke engines, but even so it offers excess thrust on many light machines. After the first takeoff, I subsequently launched with less than full power just to keep the climb angle better for forward vision.

The GT 500's wide-open visibility is valuable on landing approaches, too. You'll enjoy good side visibility regardless of which way the airport pattern works. In this regard, its tandem seating is superior to side-by-side seating.

Speaking of landing, with engine power reduced, I made my approaches at the common ultralight "50-is-nifty" speed. At idle thrust, 20 degrees of flaps produced a significantly low nose, which is great for forward landing visibility, and this flap angle restrains speed well too.

The flaps on the GT 500 are dynamic control surfaces with plenty of power. With flaps lowered two notches, I was delighted to fly low and slow in a relaxed and enjoyable manner. Unfortunately, at level slow cruise with the yoke held back slightly, reaching forward to the flaps is a stretch. I could barely touch them without moving the yoke forward slightly to accommodate the action. Overall, the collection of several levers in the cockpit makes for a busy space.

This particular GT 500's trim lever didn't seem to have much effect, though that may have been caused by a rigging error or adjustment problem. However, the brakes fitted to this GT 500 were quite effective, but you must let go of the throttle to use the hand brake, as both are mounted on the right side of the yoke.

This demonstrator GT 500 had one of my favorite fail-safe instruments—a yaw string. However, I was frustrated in my attempt to keep it perfectly centered in my Dutch roll coordination exercises. A yaw string is highly sensitive if the string is light enough, and most pilots will find they like it even better than the turn-and-bank ball.

This GT 500's yaw string showed a



JIM RAEDER

Jon Thornburgh and Carol Carpenter taxi out for an air-to-air photo mission in the Quicksilver GT 500. Note the BRS chute canister exiting the side of the aircraft. Zipped-down doors provide cool air while taxiing.



JIM RAEDER

A black panel just below the windshield reduces glare off the nose of the aircraft.

Unlike the shiny panel in the GT 500 Dan flew for this pilot report, this GT 500's panel was painted a dull gray, reducing glare and making it easier for the pilot to read the instruments.



JIM RAEDER



JIM RAEDER

Tandem seating gives pilot and passenger an equal-opportunity view of the same sights. Dual controls make the GT 500 valuable as a trainer, though the back-seat pilot must look over the front-seat occupant's shoulders to check instruments. The zippered doors can also be removed completely when open-air flying is desired.

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SPECIFICATIONS

Quicksilver Aircraft Manufacturing GT 500 with Rotax 912

(Note: All specs and performance figures provided by factory. Figures are *unverified* except as otherwise stated in article.)

Dimensions

- Wingspan—30 feet
- Wing area—155 square feet
- Length—20.5 feet
- Height—6.5 feet
- Seating—2, tandem
- Empty weight—638 pounds
- Gross weight—1,100 pounds*
- Useful load—462 pounds
- Payload (with full fuel)—366 pounds
- Fuel—16 gallons
- Wing loading—7.1 pounds/square feet
- Power loading—13.8 pounds/hp.
- Powerplant—80 hp.

*With the Rotax 582, gross weight is limited as 1,000 pounds.

Performance

- Max level speed—91 mph**
- Cruise speed (75% power)—83 mph
- Stall speed—42 mph
- Rate of climb—650 fpm
- Takeoff distance—245 feet
- Landing distance—390 feet
- Cruise range (65% power)—295 miles
- Fuel consumption (65% power)—about 4.3 gph

**With doors installed; 88 mph with doors removed

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certain momentum when moving the rudder. I believe the problem centered on the rudder pedal action. The pedals on this GT 500 were heavier in relative feel than the ailerons, and the rudders were rather lethargic. This left me unsure if I was lagging or leading with rudder in attempting to precisely coordinate the controls. However, according to my in-flight notes, the rudder action felt better than it looked. But yaw strings cannot lie. I suppose that the curved windscreen of the GT 500 caused the string to seem more sensitive; once it got off center, it tended to go farther off with little provocation.

Conventionally trained pilots accustomed to general aviation aircraft will probably feel right at home with the GT 500's yoke. I've long preferred a control stick in a sport aircraft, but I must admit that a yoke offers good leverage and perhaps the chance for finer control motion, especially in comparison with a side-mounted joystick. Like all components in this airplane, the yoke arrangement in the GT 500 was well executed.

However, I tended to bury the yoke into my leg whenever turning to the right in steep turns. The tendency was much less so to the left, no doubt because of P-factor influences. I'm near the FAA's average 170-pound pilot, so if I bumped my leg, a larger pilot might feel space is cramped when making full-stop control actions with the yoke.

Discounting coordination qualities and stick motion, steep turns and all other turn maneuvers went well in the GT 500. Despite some control force disharmony and the ergonomic issues, the GT 500 is remarkably precise in handling. Turns to headings and fine adjustments on final approach showed strong control authority.

Many aircraft I've flown offer more fluid control motions than the GT 500, though that can translate to faster control response that does not please everyone. Oftentimes, aircraft with lighter handling gain this quality by flying faster, yet many ultralight enthusiasts relish flying slowly over fields, an activity which the GT 500 does extremely well.

The GT 500 was well behaved at high cruising speeds also. At 90 mph

The Primary Category

FAA established the Primary Category in 1992 at the request of EAA and other general aviation groups, to allow for the manufacture of ready-to-fly airplanes or kit aircraft that could be built under a manufacturer-supervised program. Primary Category aircraft are limited to a gross weight of 3,000 pounds, or less, and must be powered by a certificated engine and propeller. They can be used for training or recreational flying.

A sub-category of the Primary Category is called Sportplanes; a sportplane is defined as any single or two-place aircraft with a maximum takeoff weight of 1,200 pounds, or less, and a maximum stall speed of 45 knots. They are limited to day VFR, normal category operation. Currently, two aircraft—the Quicksilver GT 500 and the RANS S-7C—have been certified under this category.

A minimum of a Recreational pilot's certificate (or student endorsement) is required to operate such aircraft.

indicated, the aircraft felt solid. Nonetheless, in this evaluation aircraft with the power set at 4200 rpm yielding 50-55 mph, I experienced almost a continuous shudder that seemed to come from the tail. It wasn't disturbing, but I could not ignore it.

At 4400 rpm, I cruised 60 mph in level flight, which turned out to be a pleasant flying speed. Noise and vibration were low, plus fuel consumption was quite miserly.

When flying at 55 mph, deploying 10 degrees of flaps hardly changed the attitude and flight characteristics. But with flaps deployed 20 degrees, I saw a decrease of about 5 mph. At full flaps, or 30 degrees, speed in the GT 500 dropped down another 5 mph to 45 mph.

In the highly engineered GT 500, power-off and power-on stalls broke forward in every single trial. The break was clearly noted, but all were gentle. If you lower the GT 500's nose ever so slightly you recover almost instantly.

After doing steep turns at 45 degrees of bank, I performed accelerated stalls

that were noticeable only by a faint bubbling when the air separated the wing. I'd observe that my ability to note this subtle quality of handling after flying the aircraft for just 45 minutes tells you something about how quickly you can become comfortable in the GT 500.

How Much?

Currently, the GT 500 can be flown as an ultralight trainer, as a 51-percent amateur-built aircraft, or as a Primary Category aircraft. Bought as a complete kit, the GT 500 is priced at about \$34,000 for the 912-powered model, but it is quite well equipped for that price. Comparable aircraft from other American suppliers may seem lower priced, but you must compare them with the same equipment.

Still \$34,000 is hardly pocket change to most of us. If that figure seems too high, you can knock it down by \$7,000, to about \$27,000, by going with the two-stroke Rotax 582 engine that has proven itself for years on this design. A 582-powered GT 500 also weighs 63 pounds less; therefore, it can climb at the same rate even with 15 less horsepower. Quicksilver lowers the gross weight to 1,000 pounds with the 582 but payload remains within 37 pounds of the more powerful model. Of course, fuel consumption will actually rise with the smaller engine, one of the facts of four-stroke efficiency.

A factory-built, Rotax 582-powered GT 500 sells for about \$33,000. For a ready-to-fly price on the R-912 version, Quicksilver advises you contact one of their many dealers, but you can come in under \$40,000, I suspect. Before comparing purchase prices with other aircraft, you should check with a local dealer, as Rotax engine prices alone can affect the final price significantly. With the euro's 20-percent increase against the dollar in recent years, the Austrian-based engine manufacturer has been forced to raise prices. Naturally, this is true for any airframe brand using imported components.

As one of America's most likely early entrants for LSA and as a model that has earned a loyal following, GT 500 deserves your close look. 