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SR22 GTS: A New Perspective on Cirrus

# SR22 GTS: A NEW PERSPECTIVE ON CIRRUS

## GARMIN TAKES A BIGGER CHUNK OF THE CIRRUS PANEL

July 5, 2008

By Thomas B Haines

It must be the long winters in Duluth, Minnesota. Or maybe it's global warming that makes it just warm enough that the "snow machines" have to stay in the garage, leaving the Cirrus Design team with idle time on their hands. Whatever the cause, you can almost count on a big spring announcement from Cirrus—and then you know what they've been toiling on all winter.

Last year, they unveiled "the-jet," the company's first foray into the turbine world. This year, they turned to the top-of-the-line SR22 GTS, using a major European aviation show in May to unleash the new Cirrus Perspective by Garmin. The Perspective upgrade includes a Cirrus rendition of the ubiquitous Garmin G1000 as well as a number of enhancements to the already best-selling SR22.

While Garmin nav/coms have dominated the Cirrus has offered a fully integrated Garmin c

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es, Perspective is the first time ss cockpits to the masses in

2002, when it partnered with Avidyne to launch the FlightMax Entegra panel, which included a primary flight display and a multifunction display. Cirrus models since day one in 1999 have included a large MFD. Garmin soon followed the Entegra announcement with its G1000 cockpit, which integrates navigation, communication, and autopilot into one system.

The G1000 eventually dominated the piston market everywhere except at Cirrus and Piper.

The Avidyne setup relies on separate nav/coms—usually Garmins—to drive its PFD and MFD. A separate autopilot control panel is also required.

If you're buying a new Cirrus SR22, you now have a choice of panels. The Avidyne Entegra package is still standard across the Cirrus fleet. The Garmin Perspective panel is a \$48,000 option only on the top-of-the-line SR22 GTS and GTS Turbo models. Base price for the Turbo model with a Perspective panel is \$590,900. In addition to upping the entry price, the new panel and the associated enhancements also wick away at the useful load by upping the empty weight by 42 pounds. A typically equipped SR22 Turbo with Perspective can thus carry 962 pounds. Fill the tanks with the full 92 gallons of avgas and you're left with 410 pounds, or about two people and a couple of light bags. Stick with the standard Avidyne panel and you can carry an extra suitcase. Or offload fuel to provide more flexible loading.

## More than skin deep

To let your ramp neighbors know you've got something special, you can choose a unique Perspective paint scheme for an additional \$12,000. The Perspective scheme includes color on the tail, top of the cowling, and around the windows. The top is white, whereas some of the other recent Cirrus schemes also use colors on top of the fuselage.

Inside, the dual 10.4-inch Avidyne displays and radio stack are replaced with 12-inch Garmin displays—the largest PFD available in the piston fleet. Cirrus points out that the extra two inches on the diagonal represent a 35 percent increase in viewable real estate. Large alpha and numeric keyboards supplant the radio stack in the usual Cirrus configuration. Nearly all of the PFD, MFD, and autopilot functions can be managed from the keyboards, but none of them have to be if you prefer the knobs and softkeys around the display bezels. Among the nicest features are dedicated course, heading, and altitude knobs on the center stack, a convenient reach from the newly restyled throttle lever. The throttle lever also includes a new go-around button. Press it at the missed approach point or decision height and the autopilot shuts off, the flight director pops the command bars up to the proper climb attitude, and the missed approach waypoint is automatically selected. Add throttle, pitch up to the command bars, flaps up, touch the autopilot button and you're on your way. The GFC 700 autopilot will manage the rest, including flying

straight ahead before initiating the turn to the waypoint, if that is what the procedure calls for. The autopilot will level off at the correct altitude and, when you reach the missed approach waypoint, it will automatically enter the holding pattern as depicted. You have to pour the coffee yourself.

One new autopilot feature is a simple blue “LVL” button on the mode controller. It’s designed to help a pilot who is momentarily confused about what’s going on around him—perhaps from a wake turbulence upset or uncertainty about what the automation is doing. Whether the autopilot is on or off, the pilot can touch the LVL button and the autopilot will roll the wings level and hold the current altitude. The feature is designed to right the airplane from as much as a 50-degree pitch up or down and 75 degrees of roll—without over stressing the airplane. We tried it at numerous extreme attitudes and roll rates and found it smartly, yet gently, brought the airplane back to level flight. Engine control is still up to the pilot.

While several Perspective features are unique to Cirrus for now, Cirrus is encouraging Garmin to make the LVL button available to other customers.

Another unique autopilot feature for Cirrus is the “IAS” button. Whereas other GFC 700 autopilots have a “FLC” button for flight level change, Cirrus management believed that the term was poorly understood by general aviation pilots—and probably correctly so. FLC allows the pilot to change altitudes while maintaining a set airspeed. To make it clearer, Cirrus labels it IAS for indicated airspeed. Select the IAS button, dial in an airspeed using the thumbwheel and the autopilot will climb or descend the airplane to the selected altitude at that speed.

A yaw damper is a \$7,500 Perspective option. The option adds a servo for rudder control, allowing the autopilot to automatically trim the yaw axis during climbs and descents.

## Seeing clearly

The Perspective PFD includes Garmin’s Synthetic Vision Technology (SVT) that we featured in the May issue (see “ [Avionics: Seeing Eye to Eye](#),” May *AOPA Pilot*). SVT combines traffic, terrain, obstacle, and highway-in-the-sky visual cues on the PFD to give a VFR view of the outside no matter the weather. Aural and color warnings advise you to climb if you get too close to terrain or obstacles. Traffic symbols move across the screen, tracking aircraft near your flight path. Finally, windows zipping by depict your flight path to the next waypoint or down the approach procedure. Keep the airplane inside the windows and you’ll always get there and always descend at the proper rate. A flight path marker shows where the airplane is going no matter where the nose is pointed. Keep the flight path marker on the runway numbers, for example, and you’ll never land short.

We flew the SVT on 10-inch displays at Garmin's flight test center last winter—you can watch the video on AOPA Online. As we reported, it was impressive. However, when we saw it on the Perspective 12-inch display in the SR22, it was even more impressive. The wider horizon and additional screen space allow an even bigger view of the synthetic world without appearing cluttered.

Among the other features on the PFD are a dedicated traffic window in the lower left corner that is configured in a heading up mode; north up on that window is not an option in Perspective because Cirrus felt a north-up presentation on a PFD could be confusing to the pilot.

Perspective also includes a higher level of system integration than ever before in a Cirrus. For example, the PFD includes alerting and advising on the status of various systems, such as oxygen level, brake temperature, alerting when pitot heat is off as outside air temperature drops to 5 degrees Celsius or below, TKS anti-icing fluid level, and carbon monoxide warnings.

Across the PFD and MFD, Cirrus had Garmin use a larger, sharper font for numeric displays, improving readability.

Over on the MFD, pilots can display topographic information and data-linked Nexrad images simultaneously—another first for Garmin systems. In the upper right-hand corner, where most G1000s have a redundant nav frequency display, Cirrus places time, fuel, bearing, and distance to destination—a handy feature that's often buried a screen away from where you want it.

As with other G1000 installations, Perspective places engine instruments down the left side of the MFD. The system provides a blue bar on the fuel flow indication to aid in leaning. Slide the mixture lever back until the pointer meets the blue bar and you're leaned for best-economy cruise. If you want to see the details, they're available on the dedicated engine page.

## Charge it

You might ask what good all this gee-whiz technology provides if the lights go out. To prevent you from ever finding out, Cirrus upgraded the electrical system on Perspective airplanes to increase redundancy and improve fault tolerance. Among the improvements is a 70-amp standby alternator instead of a 20-amp model. Should the primary 100-amp alternator fail, the standby alternator will power the entire airplane except the optional air conditioner.

Combine the two large alternators with the two batteries and an essential bus that can be powered from any of the four sources and you'll see that a pilot would have to work hard to be flying around in the dark.

Dual attitude heading reference systems and full reversionary modes between the PFD and the MFD also improve reliability. According to Cirrus, no one failure mode can force a Perspective pilot to go from a full glass cockpit with autopilot to flying by hand on standby instruments.

In addition, the circuit breaker panel has been redesigned and labeled to make it easier to understand.

Another change with the Perspective upgrade is an improved environmental control system. All vent controls are now electrically actuated, more like your car. In the absence of air conditioning, improved fan controls help to keep air moving through additional outlets.

## Perspective in perspective

So, what you get for \$600,000 is a cutting-edge, turbocharged, four-place airplane capable of cruising at 211 knots in the flight levels for nearly 900 nm while carrying two people. With four on board, you can cruise at nearly 200 knots for more than 300 nm. Guiding you will be one of the most sophisticated panels available on any airplane of any size.

Cirrus officials believe most SR22 GTS customers will opt for the Perspective panel and its various upgrades. For now they aren't saying when, or if, the option will be made available to lower levels of SR22s or SR20s.

Of course, by now it's summer. Soon it will be fall. Then winter—and we'll all wonder what those guys are working on up there in Duluth. Only spring will tell.

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*The Perspective panel and especially the LVL button have [spawned quite a dialogue](#) among readers of my blog.*

## Spec Sheet



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## 2008 CIRRUS SR22 G3 TURBO PERSPECTIVE

**BASE PRICE: \$590,900**

**PRICE AS TESTED: \$643,000**

### SPECIFICATIONS

Powerplant	Tornado Alley turbonormalized TCM IO-550N, 310 hp @ 2,700 rpm
Recommended TBO	2,000 hr
Propeller	Hartzell ASC propeller, 3-blade
Length	26 ft
Height	8 ft 9 in
Wingspan	38 ft 4 in
Wing area	144.9 sq ft
Wing loading	23.46 lb/sq ft
Power loading	10.96 lb/hp
Seats	4

Cabin length	10 ft 10 in
Cabin width	4 ft 1 in
Cabin height	4 ft 2 in
Empty weight	2,438 lb
Useful load	962 lb
Payload w/full fuel	410 lb
Max gross weight	3,400 lb
Fuel capacity, std	92 gal usable 552 lb usable
Oil capacity	8 qt
Baggage capacity	130 lb
<b>PERFORMANCE</b>	
Takeoff distance, ground roll	1,028 ft
Takeoff distance over 50-ft obstacle	1,594 ft
Max demonstrated crosswind component	20 kt
Rate of climb, sea level	1,304 fpm
Max level speed, 25,000 ft	219 KTAS
Cruise speed/endurance w/45-min rsv, std fuel (fuel consumption)	
@ 85-percent power and 25,000 feet	211 KTAS/3.7 hr/886 nm (17.6 gph)

@ 75-percent power and 25,000 feet	202 KTAS/4.0 hr/925 nm (16 gph)
@ 55-percent power	191 KTAS/4.6 hr/992 nm (14 gph)
Max operating altitude	25,000 ft
Landing distance over 50-ft obstacle	2,344 ft
Landing distance, ground roll	1,141 ft

### LIMITING AND RECOMMENDED AIRSPEEDS

$V_X$ (best angle of climb)	80 KIAS
$V_Y$ (best rate of climb)	100 KIAS
$V_O$ (operating maneuvering) @3,400 lb	133 KIAS
$V_{FE}$ (max flap extended)	104 KIAS
$V_{NO}$ (max structural cruising)	177 KIAS
$V_{NE}$ (never exceed)	200 KIAS
$V_R$ (rotation)	73 KIAS
$V_{S1}$ (stall, clean)	66 KIAS
$V_{SO}$ (stall, in landing configuration)	62 KIAS
$V_{PD}$ (maximum parachute deployment speed)	133 KIAS

*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.*

For more information, contact Cirrus Design, 4515 Taylor Circle, Duluth, Minnesota 55811; telephone 888-750-9927; [www.cirrusdesign.com](http://www.cirrusdesign.com).



## Thomas B Haines

*Editor in Chief*

AOPA Editor in Chief Tom Haines joined AOPA in 1988. He owns and flies a Beechcraft A36 Bonanza. Since soloing at 16 and earning a private pilot certificate at 17, he has flown more than 100 models of general aviation

airplanes.

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