

**Cirrus SR20-G3**

# Reaching maturity

New wing package elevates Cirrus SR20-G3

**BY PAUL J. RICHFIELD**

One hallmark of a maturing aircraft design is a plan for continual upgrade. This path appears firmly established for the Cirrus Design SR20, and the newly launched Generation Three (G3) variant of the 200-horsepower single reveals the manufacturer's growing confidence and responsiveness to customer input. And if the finished product lures potential buyers away from a flock of very capable rivals, such as the Diamond DA-40 and the Cessna 172/182, then so much the better.

As with its big brother, the flagship SR22-G3, the biggest change to the '20 is a new, longer wing built around a carbon fiber spar running from wing tip to wing tip. Considerably lighter than the uniweave fiberglass structure it replaced, this spar allows a three-foot wingspan extension resulting in improved climb performance but no loss of cruise speed. Thanks to the stability benefits of a one-degree increase in wing dihedral, the aileron-rudder interconnect system was eliminated, lightening control forces.

In addition, the G3's main landing gear was moved slightly inboard and the strut angle increased, raising the aircraft's propeller ground clearance by two inches. As subtle as these changes are, they become obvious when a G3 stands

PHOTOGRAPHY BY CHRIS ROSE





SR20 **CIRRUS**  
GENERATION THREE

N320

N350515





alongside an earlier model SR20. Combined, the new spar and landing gear changes prompted Cirrus to raise the G3's maximum gross weight to 3,050 pounds from 3,000, with a 50-pound increase in useful load.

Other elements of the G3 wing update package include light emitting diode (LED) recognition lights (a popular aftermarket mod), and relocation of the fresh air inlets from the wing leading edges to a single NACA scoop on the right side of the engine cowling. Wing root fairing and trailing edge aerodynamics are improved as well, and the stall warning port was relocated.

Paul Sallach, a Cirrus demo pilot who brought an SR20-G3 to AOPA headquarters in Frederick, Maryland, in January, said the taller stance was a specific request of training fleet operators seeking to reduce the potential for propeller and tail strikes during training, and in operations from grass runways. Flight schools are a major sales target for the SR20-G3, with previous versions already in service with Western Michigan University and the Delta Connection Academy in Florida, as well as primary training establishments in Malaysia, Thailand, Dubai,

and other locales. Still, there is no typical SR20 buyer, according to Sallach.

"There used to be a firm demographic—individuals interested in advanced technology with a need to travel, and the various airline pilot training centers—but now we're going after the pilot group as a whole," he said. "We're seeing a lot of success with people that are totally new to aviation. We're taking the airplane to car and boat shows, and other events, in an effort to show it to people who want and need to travel, but might not have considered a light aircraft until seeing a Cirrus."

#### **Easing the transition**

To tap in to this emerging market, the Duluth, Minnesota-based manufacturer is promoting the Cirrus Access program, which provides new buyers with the dedicated services of a Cirrus-trained CFI. This person serves mainly as an instructor, but also as a corporate pilot, aviation mentor, and aircraft manager. According to Sallach, the primary goal of this 12-month apprenticeship is to help the buyer obtain a private certificate and an instrument rating. About 30 customers have participated in the pro-

gram, which adds around \$70,000 to the price of the aircraft.

To further enhance the aircraft's appeal, Cirrus recently launched a maintenance program similar to those offered with luxury automobiles. This arrangement covers routine maintenance and upkeep on the aircraft for 600 hours or two years, whichever comes first.

New SR20s all have the G3 upgrade and come in three flavors; the VFR-only SRV is available for a base price of \$214,900, and the IFR-equipped SR20-G3 can be had for \$276,690. The all-options-included SR20-GTS costs \$366,900. Sallach said most SR20 buyers choose to finance their purchase through Cirrus; one option is a bridge loan that holds the new airplane—and the owner's used aircraft—as collateral. When the older airplane is sold, the proceeds go toward the new one.

For qualified and experienced pilots taking their first Cirrus, the company offers a three-day familiarization course comprised of five hours of ground school and around 15 hours of flying. Typically, this training is conducted at the factory with instructors from the University of North Dakota at Grand



Forks (a 1.5-hour Cirrus flight from Duluth), but it is transferable to the customer's home airport as well.

Both Cirrus models are different enough from conventional general aviation aircraft to warrant this heavy emphasis on transition training. For most buyers, their SR20-G3 represents their first contact with composite structures, sidesticks, glass cockpit avionics, the ballistic parachute, single-lever throttle-propeller controls, and other Cirrus attributes. Flying the G3 with Sallach was my first in a Cirrus, and if two hours in the airplane didn't make me a true believer, it certainly prompted an appreciation of why these airplanes are among GA's top sellers.

First impressions: It's big for a four-seater; with a very high build quality and an interior like a Lexus or a BMW, not like an airplane at all. The composite finish is smooth and, of course, devoid of rivet lines. It's got very long wings, so avoid cutting corners while taxiing. However, the free-castering nose wheel

allows very tight turns, and visibility out of the cabin is excellent.

### Glass up front

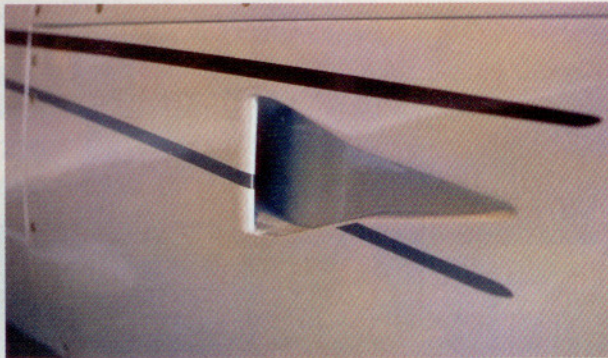
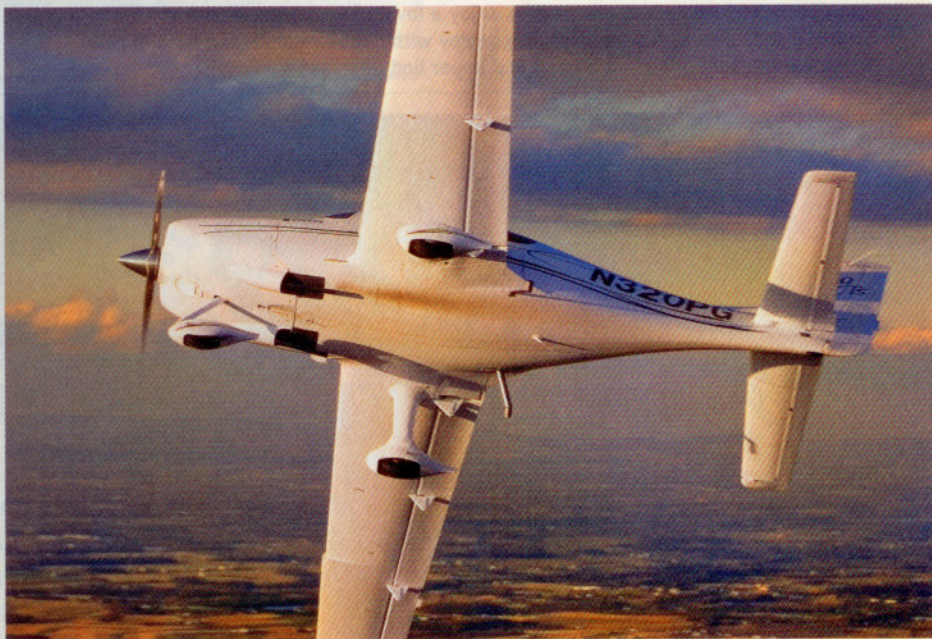
The Avidyne Entegra two-screen electronic flight information system (EFIS) is dazzling, providing a level of information comparable to a business jet's flat-panel LCD. As part of a new safety initiative, Cirrus has incorporated a series of advisory pages that appear on the multifunction display (MFD) during the start-up sequence. Among a number of thought-provoking questions, pilots are asked if they are truly ready for their planned flight and whatever challenges it may entail. While experienced pilots may find these warnings a little over the top, Cirrus is confident they will encourage quality decision making among the low-time pilots expected to form the bulk of the SR20-G3 customer base.

Still, there is nothing daunting about the Cirrus pilot workstation. EFIS symbology on the primary flight display is presented along traditional lines and

even beginning fliers should find it intuitive and easy to comprehend. When hand-flying the aircraft, all the pilot has to do is keep the flight director wedge snugly nestled into the inverted "v" where a pair of command bars join. Airspeed is indicated in tape format to the left of the flight director; altitude and vertical speed are depicted on the right. A horizontal situation indicator dominates the bottom half of the PFD; this comes complete with the standard course pointer, course deviation indicator, and heading bug.

The multifunction display is a storehouse of information, with selectable pages each focusing on different data streams. The EMax engine monitoring page, for example, shows CHT, EGT, fuel flow, and percent power, while a fuel totalizer computes miles per gallon and remaining fuel as each waypoint is reached. A lean-assist function helps with mixture adjustments, and automatically advises the pilot if the mixture is too rich or too lean. The dis-

Avidyne's Entegra electronic flight information system (opposite page) is retained on the Cirrus SR20-G3, providing a data stream comparable to a business jet's flat panel LCD. Dual Garmin GNS 430Ws provide redundancy, plus the ability to fly WAAS approaches. Refinements include a slightly taller landing gear (right), LED wing recognition lights (below, left), and relocation of the fresh air inlet to a single NACA scoop on the right side of the engine cowling.





play also helps the pilot configure the aircraft precisely for best-power or best-economy operations.

Subsequent pages help the pilot to avoid terrain, weather and traffic, and be better prepared for single-pilot IFR operations. Features include Stormscope lightning detection, XM satellite datalink weather and radio service, a Honeywell Terrain Awareness and Warning System,

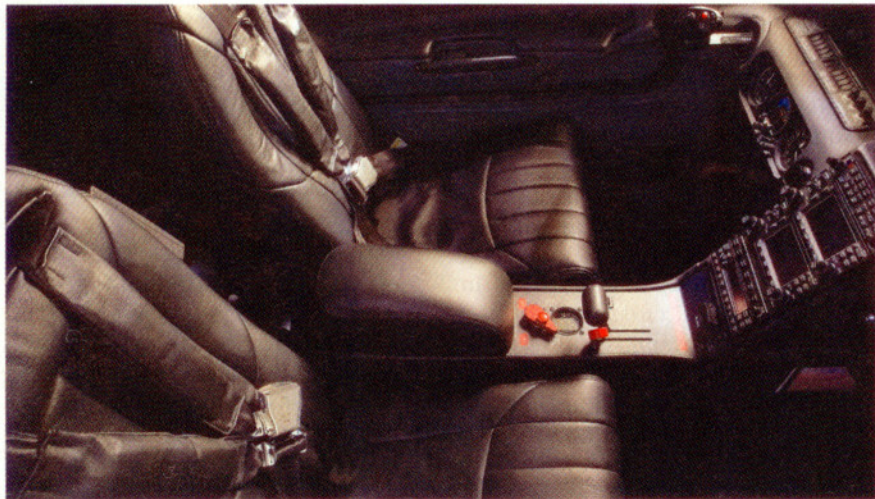
CMax electronic approach plates, and Skywatch—a transponder-based traffic awareness system. WAAS approaches are possible, thanks to a pair of Garmin GNS 430W GPS navcoms. While these drive the Avidyne displays, they also are able to work independently should any of the other systems fail. Automated checklists help to ensure that the aircraft is properly configured for each phase of flight.

### **Flying qualities**

Sidesticks? Great stuff, but they still take a little getting used to. Stick forces are reminiscent of larger aircraft and although the four-way electric trim works as advertised, I caught myself searching for a manual trim wheel for minor adjustments. The Cirrus doesn't have one, as a matter of principle. Aileron trim was around twice as sensitive as elevator trim, and a challenge to center, although this could have been a rigging issue or merely a reflection of my lack of finesse.

The throttle, mixture, boost pump, and flap controls are positioned well, and the ability to push forward and go fast without manipulating a prop control is probably a crowd-pleaser. All that's needed now is a full authority digital engine control to finally relegate the red mixture knob to its honored place in aviation history.

In flight, the six-cylinder Continental IO-360-ES is smooth and quiet and, unlike some of the bigger injected sixes, requires no extreme gentleness or other special handling. Manifold pressure and rpm information is available on the primary flight display. Power is expressed as a percentage



**Cirrus SR20-G3 pilots and passengers enjoy a level of luxury equivalent to that of a high-end automobile. Airbag seatbelts deploy within milliseconds of a hard impact, shielding the seat occupant's head and upper body.**



## SPECSHEET

### Cirrus SR20-G3

Base price: \$276,690

#### Specifications

Powerplant .....	Continental IO-360-ES (200 hp)
Recommended TBO .....	2,000 hr
Propeller...Hartzell, 3-blade, constant speed	
Length .....	26 ft
Height .....	8 ft 11 in
Wingspan.....	38 ft 4 in
Wing area .....	144.9 sq ft
Wing loading .....	21 lb/sq ft
Power loading .....	15.25 lb/hp
Seats .....	4
Cabin width .....	49 in
Cabin height.....	50 in
Empty weight .....	2,080 lb
Max gross weight .....	3,050 lb
Useful load .....	970 lb
Fuel capacity .....	58.5 gal (56.0 gal usable) 351 lb (336 lb usable)
Oil capacity .....	8 qt
Baggage capacity .....	130 lb

#### Performance

Takeoff distance, ground roll .....	1,478 ft
Takeoff distance over 50-ft obstacle .....	2,221 ft
Max demonstrated crosswind component....	20 kt
Rate of climb, sea level .....	828 fpm
Maximum cruise speed (75% power) .....	156 KTAS

Cruise range with reserve .....	627 nm/ 75% power
Max range with reserve .....	666 nm/ 65% power
Max operating altitude .....	17,500 ft
Landing distance over 50-ft obstacle..	2,636 ft
Landing distance, ground roll .....	853 ft

#### Limiting and Recommended Airspeeds

$V_x$ (best angle of climb).....	83 KIAS
$V_y$ (best rate of climb) .....	96 KIAS
$V_A$ (design maneuvering) .....	130 KIAS
$V_{FE}$ (max 50% of flap extended) ....	119 KIAS
$V_{FE}$ (max 100% of flap extended) ..	104 KIAS
$V_{NO}$ (max structural cruising).....	163 KIAS
$V_{NE}$ (never exceed) .....	200 KIAS
$V_R$ (rotation) .....	66 KIAS
$V_{S1}$ (stall, clean) .....	69 KIAS
$V_{SO}$ (stall, in landing configuration)....	61 KIAS
$V_{pd}$ (max parachute deployment speed) .....	133 KIAS

For more information, contact Cirrus Design, 4515 Taylor Circle, Duluth, Minnesota, 55811; telephone 218-788-3443; [www.cirrusdesign.com](http://www.cirrusdesign.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.

of 100 like a turboprop or jet, a feature the pilot training centers are sure to appreciate.

Steep turns are crisp, stalls are docile, and with the S-Tec Fifty-Five X autopilot engaged, the pilot has little to do but survey the scenery and periodically check that all the critical engine parameters are still in the green.

Coupled approaches—such as the WAAS approach we flew into Frederick—are a procedural exercise, nothing more. The machine takes care of virtually everything except the power reductions and the landing, of course. Only a very slight nose-up attitude is required in the flare, and touchdowns are like any other nosewheel-type aircraft.

I would expect that the Cirrus really comes into its own on long cruising legs at optimum altitudes, where pilots of a technical bent can extract every bit of performance while ensconced in Mercedes-style comfort. Like its manufacturer, the SR20-G3 appears to be in this for the long haul.

ACPA

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