Cirrus Vision SF50 update

Cirrus Aircraft is entering the final stages of certification for the world’s first single-engine personal jet: The Cirrus Vision SF50. Targeting mid-2016 for certification and entry into service, this $1.96 million aircraft will establish a new category positioned neatly between the single-engine turboprop and light business jet.

Focusing on getting it done right, the manufacturer will deliver its first Vision aircraft this year without any operational restrictions. According to Matt Bergwall, Project Mgr for the Cirrus Vision SF50, “The aircraft will be fully capable at the time of first delivery to include certification for light into known icing conditions, a fully functional avionics system and a very high quality interior.”

“Cirrus Aircraft is encouraged on the initial market acceptance of our Vision Jet,” adds Bergwall. “Cirrus continues to have mature conversations with many different operators who are looking at how the Vision SF50 will fit their business needs and are anxiously awaiting certification.”

According to Cirrus, in anticipation of certification, production in Duluth is beginning to ramp up with 4 Vision SF50s on the final assembly line. Within the first 12 months of certification, Cirrus plans on delivering up to 50 of the new jets. And 18 to 24 months later, full production will peak out at over 100 aircraft per year.

An integrated digital aircraft

Cirrus Perspective Touch by Garmin was introduced in late 2015 as the new avionics system designed specifically for the Vision SF50. Based on the Garmin 3000 avionics suite, the Perspective Touch system features the latest turbine-class touchscreen-based flightdeck. This avionics suite for the Vision Jet includes dual over-sized widescreen flight displays with multi-pane capabilities.

Cirrus claims that personalization and ease of use are hallmarks of the Perspective Touch suite. This new flightdeck enables pilots to customize the layout of the primary flight display (PFD), multifunction flight display (MFD) and touchscreen controllers. The 3 Garmin touchscreen controllers increase the speed at which a wide range of aircraft systems and functions can be assessed, which is a great advantage as other manufacturers offer only 1 or 2 controllers. Bergwall adds, “The 3 landscape touchscreen controllers replace all keys around the avionics and keypad controllers. Every phys-
ical knob, switch or button had to earn its way into the cockpit.”

Standard or optional features may include synthetic vision, real-time weather radar, a digital automatic flight control system, electronic stability control (while hand flying), automatic pressurization scheduling, automated system alerts, graphical depictions of aircraft system status, integrated weight and balance, global datalink weather, satellite phone and texting, enhanced runway awareness and integrated backup instrument displays. All of these features, combined with the Williams International FJ33-5A full authority digital engine control (FADEC), result in a fully integrated digital flightdeck.

The perfect powerplant for the Vision SF50

The Williams FJ33-5A is a scaled down version of the widely popular FJ44 engine. According to Williams, over 5000 FJ44s are in service and have accumulated over 10 million flight hours. Legendary reliability, a superior thrust-to-weight ratio and world class customer service are some of the reasons why Cirrus selected the Williams FJ33 to power the Vision Jet.

The FJ33-5A (1800 lbs of thrust) is a twin-spool turbofan with many advanced features such as “blisks” (integral blades and disks), effusion-cooled combustors, low parts count and FADEC. All these factors contribute to a low cost of ownership and excellent performance. A modular design allows quick assembly, disassembly and maintenance.

For the FJ33-5A turbofan, Williams offers the TAP Blue maintenance program that covers all maintenance costs—both scheduled and unscheduled—for a fixed hourly rate. TAP Blue is the only engine maintenance program that covers FOD and lightning strike damage, and is included in Cirrus’ comprehensive aircraft maintenance program for the SF50.

Safety first

Cirrus Aircraft’s philosophy of a layered safety strategy on the Vision Jet begins with a well-trained pilot. On the Vision SF50, Cirrus offers a couple of very unique and high-tech safety systems such as the emergency descent mode and the Cirrus Airframe Parachute System (CAPS), and provides a number of innovative features such as the electronic stability protection, synthetic vision systems (SVS), stall protection system (stick shaker/pusher) and great low speed performance.

Cirrus and Garmin have worked together to create the Cirrus Perspective Touch avionics suite. Most system controls, navigation and communications are integrated in this state-of-the-art suite. Based on the Garmin G3000 series, Cirrus adds features that would be found on aircraft 10-times the price of its SF50 Vision.

Williams International is a perennial favorite in the Pro Pilot Powerplant Product Support Survey. Over the 18 years Williams has been included in the Survey, the company has outscored its nearest rival by 5%. The FJ33-5A is based on the same technologies as the larger FJ44 powerplant, which has a pedigree 2nd-to-none with over 5000 engines in service accumulating more than 10 million hours.
Emergency descent mode is triggered by a loss of pressurization, a feature similar to that available on newer Dassault Falcon bizjets. Once pressurization is lost, the automatic flight control system will safely fly the aircraft to a lower, more inhabitable altitude.

Over 15 years ago, Cirrus certified CAPS on the SR20 series aircraft. Since that time, 129 lives have been saved by deploying the whole airframe parachute system. Cirrus is committed to CAPS and will install it on the Vision SF50. CAPS on the SF50 differs from the SR20 series system in a number of ways. The SR20 CAPS deploys from the top of the passenger cabin, but the SF50 CAPS will deploy from the nose of the aircraft. Unique to the SF50, its CAPS is integrated with the avionics software and provides an extra layer of protection. In the event that a pilot deploys the SF50 CAPS, the avionics will automatically maneuver the aircraft to ensure that the parachute is released within its operating envelope—a speed ranging from 67 to 160 KCAS.

**SF50 operators will receive Southern hospitality at the Vision Center**

In Nov 2015, Cirrus broke ground on its new $15 million customer experience center at TYS (McGhee Tyson Airport, Knoxville TN). Called the Vision Center, the new campus will include all Cirrus pilot, owner and customer activities to include training, sales, delivery, maintenance, support and FBO.

At the groundbreaking ceremony, Cirrus Aircraft Cofounder and CEO Dale Klapmeier said, “Our mission to deliver an aviation experience that is the pinnacle of innovation, quality and safety is taking a giant leap forward with our expansion here in Tennessee. Cirrus Aircraft’s story is one of growth and expansion—first to Duluth, then Grand Forks and now Knoxville. The Vision Center embodies our mission to deliver a world class aviation experience.” 

In Mar 2016, Cirrus and Klapmeier backed those words by announcing the addition of Vision Center VP & GM Stephen Deuker to lead Cirrus.
SF50 Vision offers several modular seating options to improve comfort and flexibility. There are 5 different layout configurations available ranging from a 3+2 to a 5+2 design, pictured above.

Aircraft’s world class customer experiences. Deuker brings more than 25 years of leadership and hospitality experience from The Ritz Carlton Hotel Company. Based in Knoxville, Deuker will be responsible for delivering an unparalleled brand experience to customers that take delivery, receive training and other services at the flagship Vision Center. Cirrus promises to raise the customer experience to a level not seen before in general aviation.

As the first building in Knoxville opens in June 2016, Cirrus will split its customer delivery and service work from the assembly and design operations in Duluth. Composite manufacturing will remain in Grand Forks. Near the end of 2016, the 2nd building housing the Vision full-motion simulator will open at the new Vision Center in Knoxville.

Training

Like any other jet aircraft, Cirrus Vision pilots will be required to obtain a type rating through the manufacturer’s in-house program. According to Bergwall, “Cirrus has been making investments to ensure a training experience as revolutionary as the jet itself.” The cornerstone of the factory-direct initial and recurrent training is a full-motion, high-fidelity Level D simulator developed by CAE. Level D simulators are sophisticated enough to allow the full type rating to be completed without ever flying the actual aircraft.

Accordingly, “Through the strategic use of technology, simulation, distance learning and professional flight instruction, the Cirrus Vision training program will truly be one-of-a-kind experience,” explains Bergwall. A tenet of all Cirrus training programs, from the SR series through the SF50, is that a well-trained pilot is a key element required to maximize the aircraft’s utility in the safest manner possible. Throughout the comprehensive training program, pilots will build confidence, skills and judgement.

Each phase of training is tailored to meet the needs of the student, whether the Vision is their first jet or they are a seasoned professional pilot. Upon completion of the type rating, Cirrus instructors are available to provide pilot mentoring services while the newly minted Vision pilot gains operational experience in the aircraft. Likewise, each year, Vision pilots must return to the Knoxville Vision Center for annual recurrent training.

Get it done right – the first time

The Cirrus guiding principal of getting it done right the first time may be a reference to a past manufacturer’s rush to gain early certification on a “revolutionary new concept,” an effort that came up short leaving early customers with a performance-limited very light jet (VLJ) unable to fly into icing conditions with a less-than-optimal avionics package. In that case, it took the company several months, a bankruptcy and new ownership to lift all of the operational restrictions to allow owners to take full advantage of their new VLJs.

Fast forward 10 years and it’s obvious that Cirrus Aircraft is now laying the foundation for a successful introduction into service of an innovative new little jet that will ultimately create a new category of aircraft: The single engine personal jet.

It’s no accident that the Vision Center has been established in Knoxville. Located within 2 hours flight time of over 1000 owner-flown SR20 and SR22 aircraft (and a tank of gas nets another 1000 owners), this new location adds tremendous value to the Cirrus ownership equation, plus the winters in Knoxville are much more pleasant than those in Duluth.

Conclusion

Safety first! Again, that is by design. Over the past 18 years, Cirrus has continuously engineered various safety systems into its aircraft, from CAPS to digital avionics to advanced aflight systems to integral roll cages, to name a few. These features make flying more enjoyable and increase the chances of survival in an accident.

Lastly, Cirrus has provided great support to its customers for nearly 20 years. That loyalty is now paying dividends with an order book of nearly 600 new Cirrus Vision SF50 aircraft—many of those orders come from existing Cirrus Aircraft owners. Clearly, if Cirrus builds it, they will come.

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