

CIRRUS

OFFERS SAFE AIRPLANES, BEAUTIFUL LINES, AND FAST SAILING SHIPS

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By Charles Chandler

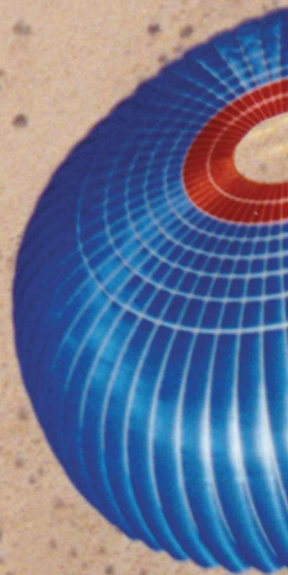
Last July at EAA AirVenture in Oshkosh we ducked into the Cirrus Aircraft pavilion to dodge one of the deluges that seem to plague the show. Looking at these airplanes sitting outside in the rain reminded me that much of our aviation terminology and jargon can be traced back to our naval heritage and culture.

The perception was that if a ship had beautiful lines and looked fast it usually was. It would be easy to imagine that back in 1984 the Cirrus Aircraft founders Alan and Dale Klapmeier were thinking about safety, comfort, and fast sailing ships as they designed their first homebuilt VK-30 kit aircraft in the basement of their family's barn in rural Baraboo, WI. The VK-30 was a sleek, fast, and "cool" aircraft that launched the Cirrus Aircraft Company.

We wanted to talk to the experts about the company's history, the unique CAPS system, why composite airplanes, and the new SF50 single-engine

jet, so Cirrus Marketing Communication Manager, Megan Timm arranged an interview with some of the senior staff.

President and COO Pat Waddick who has been with Cirrus for 27 years provided a brief overview of the general aviation (GA) industry in the '70s and '80s and why brothers Alan and Dale Klapmeier chose to develop composite home-built aircraft. According to Waddick, "After peak sales in the '70s and '80s production dropped significantly because GA aircraft designs had become stale, with little innovation and few reasons for potential customers to buy a new GA aircraft. At the same time the homebuilders were taking advantage of composites, better avionics, and innovative designs to produce very attractive, more efficient, comfortable, and safer aircraft that was a better value proposition for those GA customers."





EARLY CAPS testing in 1998 over the California desert near the Salton Sea.

Below a U.S. Air Force Academy Cirrus.

CIRRUS AIRCRAFT

In the mid-1980s the Klapmeiers entered the market with the VK-30 kit, a sleek, fast, five-place pusher aircraft followed in the '90s by the ST50 powered by the PT6-135 engine. After some success with the VK-30 and ST50 they needed to expand the business footprint and moved the company first to the Baraboo Airport and then to their present facilities in Duluth, MN, and Grand Forks, ND.

INDUSTRY MILESTONES

Ten years later they dropped those models and developed the Cirrus SR20. This aircraft was a significant GA industry milestone with automotive styling, better ergonomics, avionics with digital displays, fixed gear as fast as comparable retractable gear, built-in cabin roll bars, air bag seat belts for



both pilot and co-pilots, and the LATCH child seat restraint system. The SR series is the only aircraft equipped with Cirrus' proudest industry contribution — the Cirrus Airframe Parachute System (CAPS), a ballistic parachute that can be deployed from the back of the aircraft in emergencies that allows the *entire* airplane to descend safely.

To date 105 lives have been saved with this system and with the SR series fitted with the CAPS systems and Cirrus' pilot training programs, "We have one of the safest aircraft and flying records in the industry. Our accident rate today is 35 percent less than the GA average safety record and our fatal accident rate is 55 percent less," Waddick says. Cirrus provides formal CAPS training for both pilots and partners in command where you get assigned a factory instructor and two hours in the flight training device practicing multiple deployments of CAPS.

Tim Timmerman, director of engineering, discusses some technical and maintenance details for

WHILE NEW

aircraft assembly is done in Duluth, MN, Cirrus Aircraft has more than 200 authorized service centers to meet the needs of Cirrus SR series owners.

CIRRUS AIRCRAFT



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— Pat Waddick, President, Cirrus Aircraft



CAPS. “We have an annual visual inspection to see if everything is in place and that there has not been any water intrusion. There is a solid rocket motor with a chemical compound that has been reacting since the day it was made and we want to ensure that the rocket has enough energy to deploy the parachute. At the 10-year interval the rocket is replaced and the chute is sent back to the factory where it is inspected and repacked. On occasion we do get pilots who have deployed the chute drop by or call to tell us how much they appreciate having CAPS on board.” Cirrus has more than 50 authorized service centers worldwide qualified to service and perform the 10-year overhaul for the CAPS system.

Paul Brey, senior vice president of product development, highlights the advantages of using composite materials rather than metal in aircraft manufacturing. “With composites you can literally change a design

feature and test it the next day and then tool up for production inexpensively and quickly.

“There are other obvious and important production and maintenance reasons to use composites. Our SR series aircraft have only 23 parts in the fuselage and about 40 in the wing which helps us do most of our inspections visually without expensive NDT materials and equipment, and minimum paint removal. The composite structures are extremely durable and resistant to damage caused by towing, jacking, and stone or bird strikes.

“Strikes from huge birds like vultures will often only crack the skin, where a metal aircraft would have considerable damage. Other great reasons for using composites are there is no corrosion and very few fasteners on our aircraft. The SR series have been very crash worthy and helped the pilots and passengers survive.”



Cirrus has produced about 6,000 aircraft and flown 6 million hours and has not had an in-flight structural failure or issued service bulletin. “We offer OEM training for technicians to learn how to make composite repairs and our service centers are very capable of conducting inspections and making repairs,” Brey says.

Carrie Oakland, Service and Support executive director, adds, “When you do need field service or repairs for your SR series aircraft we have over 200 Cirrus authorized service centers with a menu of capabilities.

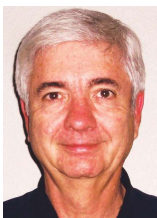
“We really focus on giving our customers that one-stop shop to handle all their service needs be it airframe avionics, structures, or engine. We provide recurrent training to our service centers staff so we have experienced technicians that customers trust with their maintenance and service.” In March Cirrus Aircraft announced that its Factory Service Center in Duluth, MN, was honored with the prestigious Diamond Award of Excellence by the U.S. Federal Aviation Administration (FAA) for Aviation Maintenance Technician (AMT) Training.

FUTURE GOALS

We asked Waddick to give us a status report on the next major milestone, the Vision SF50 jet, and discuss some future goals and challenges of the GA industry. “The type certification project for the Vision SF50 jet is going well at this point. We started the certifica-

tion project in 2012 with a goal to complete certification by 2015. We do expect to deliver a few aircraft to operational service this year. Currently we have three conforming aircraft flying and in various test programs. We completed the structural test and are in good shape, are tweaking the onboard systems with our vendors, and finalizing our production drawing package and getting that ready for production. We started fabricating and purchased our long lead parts and supplies for the production aircraft and have more than 500 positions reserved.

“As for our industry, collecting and analyzing large amounts of data is probably going to be the future of GA. Airframers like us do not know what is happening to our aircraft after the warranties are up. We must continue improving our aircraft but without good service data, this is a challenge so it is a big deal to us. We need this data to do predictive maintenance and save money for our customers. Additionally, we have seen the transition to composite airframe and the inclusion of modern avionics suites and now are waiting for a revolution with the power plants. We see some diesel engines that show promise and are hoping for a lightweight efficient turbine engine. As an aircraft manufacturer we feel that if we can keep our airplanes maintained and pilots using our Targeted Flight training, we can make our GA industry even safer.” **AMT**



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began his aviation career as a junior mechanic for American Airlines and retired after 27 years of service. Charles Chandler has a Master's of Science degree in adult and occupational education with a major in human resources development.