



DONNA ABBOTT VLAHOS | THE BUSINESS REVIEW

VoiceFlight President Scott Merritt, center, demonstrates the company's technology with Software Quality Assurance Officer Neal Benoit, left, and Project Manager Duncan Pickard.

Can you hear me now? Troy company pioneers voice recognition technology

BY MIKE HENDRICKS
THE BUSINESS REVIEW

On Aug. 17, VoiceFlight Systems LLC won certification from the Federal Aviation Administration for its product to be installed in the cockpits of certain Cessna airplanes.

That certification was a milestone for the three-year-old company that was started because of a pilot's frustration with the tedious process pilots now go through filing their flight plans by punching buttons.

It was also the first time the federal agency gave its approval to a voice-entry navigation system. Others had tried, but VoiceFlight is the only company to succeed.

"It is huge. We are the only people who have been able to certify speech recognition products with the FAA," said Scott Merritt, president of the company housed in Rensselaer Polytechnic Institute's incubator.

Merritt is also the frustrated pilot who founded the company. He had done his master's thesis at Rensselaer on voice technology, and believed there had to be a better way.

Merritt put his computer skills to use to create the product which allows the pilot to verbally enter flight plans rather than go through the cumbersome ritual of punching in the code by hand, a task that is performed either while the plane is idling on the run-

Quick info

VoiceFlight Systems LLC

Achievement Award: Most Promising Company

Achievement: The first and only pilot voice recognition system certified by the Federal Aviation Administration

Founder: Scott Merritt

Location: 1223 Peoples Ave., Troy

Web site: www.voiceflight.com

VoiceFlight Systems

Most Promising Company

way, ready for takeoff or in flight.

"This was a classic case of a pilot being frustrated and thinking there has to be a better way," said Merritt. "I said, this is ridiculous turning all these knobs."

The VoiceFlight System technology can transform the way pilots file their flight plans from that complicated process to simply talking into a device.

A PASSION FOR FLYING

VoiceFlight has been developing its technology in the Rensselaer incubator, which has given such companies as video game maker Vicarious Visions, MapInfo Corp. and Albany Molecular Research Inc. their starts.

Merritt attended Rensselaer in the mid-1970s, leaving the Troy campus with bachelor's and master's degrees.

He helped found—and served as vice president and president of—CCA Capital Management and worked for several companies in California's Silicon Valley for 10 years. During those years he developed a passion for flying. As a pilot Merritt is instrument-rated to fly twin-engine planes and flew across the country and in the Caribbean. He stopped flying when he started the company because the demands of running a startup did not allow him time to get in the cockpit.

His educational background and experience as a pilot, combined with his business background, positioned Merritt well to tackle the challenges of bringing voice-recognition technology to airplane cockpits.

For Merritt, starting up VoiceFlight has meant working 80-hour weeks, selling his Piper Seneca, writing thousands of pages of documentation to

the U.S. Patent Office, NASA and the FAA, seeking financial backing and working with pilots in their planes as well as using his computer skills to build the prototype, the VFS101.

But the first big break for Merritt and VoiceFlight came in 2005 when NASA awarded a Small Business Innovation Research grant to the company. That NASA funding gave Merritt what he needed to produce a prototype, and once he had a prototype, he had what he needed to find investors.

Merritt then teamed with another Rensselaer grad, Duncan Pickard, to take his vision to the next level.

The technical challenge was to create the technology to recognize a pilot's voice in the noisy cockpit environment. His patented device is able to restrict flight plans to increments of 200 miles as the pilot goes through the process of filing the flight plan. That limited radius significantly increases the accuracy of the system. Merritt says the VoiceFlight system is accurate more than 99 percent of the time.

Getting the FAA certification was key. The FAA approval involved more than 2,000 pages detailing everything that could possibly go wrong and describing what you are going to do to surmount it.

He recorded 18 pilots making 46 flight plans on eight aircraft so he could create a system that responds to the way its users speak some 3,000 words. In addition to creating a system that could respond to a pilot's voice in the high-noise environment, Merritt found he had to come up with ways to compensate for the individual speaking patterns of the pilots. For example, creating a program that recognized when a pilot does not enunciate the letter "T" in the word "enter" significantly increased the system's accuracy.

While the recession has made it harder to raise money, Merritt says it is a good time for a company like his. Since VoiceFlight is just emerging

from the research and development phase, it's not reliant on selling products. Plus, hard economic times have kept bigger companies from investing in technology that could compete with VoiceFlight.

NOW WHAT?

His next goal is to expand the FAA certification to a wider range of aircraft and to get manufacturing approval from the agency.

The system will sell for \$3,000. He will sell to FAA-authorized installers. He knows there is demand. He fields frequent calls from companies and pilots eager to buy the product as soon as it is available.

The company has a handful of people working for it and works with a large number of consultants.

Merritt, 58, is determined to get the VFS101 to the market.

"I just can't fail," he said. "I've got all these people counting on me and I've got to make it work."

He places a prototype on a table and says it represents three years of work and a \$1 million investment.

He sees a big potential for voice recognition technology in aviation and beyond.

"It's fairly clear that eventually every plane will have speech recognition, cars too."

Advantage VoiceFlight



In some ways, the economic hard times may be working in VoiceFlight's favor, says founder Scott Merritt, whose company is emerging from the research phase.

The recession may have kept potential rivals, especially bigger companies, from investing in R&D to produce a competing product, he says.

"It's a good time not to have to depend on sales for revenue."