

TCU students play key roles at Fort Worth helicopter company

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Phillip Gomez and Joseph McGee, engineering students at Texas Christian University, are getting a hands-on education and a head start on careers in the aerospace industry. And they're working on a cutting-edge defense project.

The 22-year-olds are among four TCU students who are paid interns of AVX Aircraft Co. They are deeply involved in the company's efforts to design a new type of helicopter for the U.S. Army.

AVX, founded a little more than two years ago by several retired Bell Helicopter engineers and managers, is one of four companies or teams awarded design contracts for a new generation of helicopters that the Army hopes to begin acquiring around 2025 or 2030.

The company has only about 30 employees, so the interns are playing important roles in the process. Gomez is studying how much the counter-rotating, coaxial rotor blades will move up and down in various flight conditions. McGee is defining how strong and how flexible the rotor shaft would have to be, what materials to use and whether it can be made lighter to save precious weight.

"I learned some of this in class, so now I get to use it," said McGee, who is from Amarillo.

McGee's early career aims didn't focus on aviation, although now he's hooked on the field. "I knew I wanted to do something in engineering: planes, helicopters, cars or trains. Things that go fast."

Gomez, who is from New Braunfels, always had flying things in mind. He wants to work on aerodynamics, the science -- and sometimes black art -- of why and how things fly, how air currents help keep a plane aloft or impede their progress.

Working with AVX "has been a lot to take in at once, but it's all been good," Gomez said. He would like to stay in the industry in Fort Worth but is also considering pursuing a master's degree at a top-flight engineering graduate school.

The two students put together a video demonstrating their work, which is on display this week at the AVX booth at the American Helicopter Society's annual meeting at the Fort Worth Convention Center.

In addition to Gomez and McGee, two TCU computer science students are working with the company writing simulation programs.

AVX President Troy Gaffey assigned the interns to work with the small company's vastly experienced senior engineers. "I believe in just throwing them in the pool and letting them learn to swim," he said.

Both the youths and their elders are gaining from the experience. The interns bring new ideas, question old ones and are much more comfortable with computerized design and analytical software tools that are now standard in the industry. Their counterparts learned their trade using slide rules.

"I'm hoping some of these guys, all of them even, that we'll get to hire them," Gaffey said. "I've encouraged them to go on to grad school, but if that's not what they do now I hope we can use them."

AVX's bid to compete with helicopter industry giants like Boeing, Bell and Sikorsky has gained additional credibility. The company said Wednesday that it has been granted a patent on its concept of combining two old aviation ideas into a more efficient and versatile helicopter propulsion and control system.

The company is pushing on multiple fronts to convince the Army that a helicopter using a coaxial rotor system combined with dual ducted fans, essentially propellers, can lift more, fly faster and be cheaper to operate than conventional helicopters.

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