



In Arizona's Desert, Partnerships Make CTE Aviation Training Soar

By CeCe Todd



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Now is the time for schools to develop career and technical education (CTE) aviation programs. For students in the East Valley Institute of Technology (EVIT)'s aviation program, the dream starts with a passion for planes and a desire to fly. Then partnerships with higher education and industry fuel those dreams to take flight.

At EVIT, a public CTE school in Mesa, Arizona, students take their first steps toward a range of aviation careers: aircraft mechanic, flight instructor, air traffic controller, pilot. After two years in the program, most have earned college credits and a pilot license while still in high school. These courses rely heavily on expensive equipment and guidance from industry to ensure training meets current needs and standards. And the aviation industry has a strong motivation to help.

In its 2017 "Pilot and Technician Outlook," Boeing estimates that over the next 20 years the aviation industry will need more than two million new employees to fly, maintain and assist in the operation of thousands of new commercial jetliners: an additional 637,000 commercial airline pilots, 648,000 maintenance technicians and 839,000 cabin crew. The report states: "Educational outreach and career pipeline programs will be essential to inspiring the next generation of pilots, technicians and cabin crew" ("Pilot and Technician," 2017).

CTE, with its emphasis on relevant hands-on learning, is positioned well to fill this need by harnessing students' natural interest in flight and transforming that interest into skills needed to fill these in-demand jobs.

Dr. Sally Downey, superintendent of the EVIT Joint Technical Education District — a partnership of 10 school districts in the suburbs east of Phoenix — was determined to start a CTE aviation program. With Arizona being home to the Barry Goldwater Air Force Range, Luke Air Force Base, and numerous airports and defense contractors, Downey knew there was a market need for people to go into aviation careers. From her experience as an educator and a mom, she also knew that aviation would be a good fit as a CTE program for high school students. Her son, Rob, grew up fascinated by the world of flight and went into the Air Force Academy.

"For some kids, all they want to do is fly, fly, fly," she said.

Aviation Program Takes Off

Chandler-Gilbert Community College (CGCC) provided the EVIT program with a home until the EVIT East Campus opened in 2011, the second of two central EVIT campuses where high school students spend a half-day in career training. EVIT East is located at the old Williams Air Force Base in east Mesa next to Phoenix-Mesa Gateway Airport, Arizona State University (ASU) Polytechnic, and a host of flight training schools and aviation businesses. EVIT's continuing partnership with the community college allows students to earn up to 24 college credits toward an associate degree in CGCC's aviation program and automatic accep-

tance as a junior at the University of North Dakota (UND), which operates a flight school at Gateway airport. EVIT students also have the option of continuing their aviation training at ASU Polytechnic or Embry-Riddle Aeronautical University.

On a typical day, you can find students creating airfoils to test in a wind tunnel or taking apart, and putting back together power plant systems. The wind tunnel and engines were donated by ASU. In the air traffic control lab, students experience the perspectives of pilots and controllers. Other students are taking off, flying, landing — and sometimes crashing — in flight simulators donated by ASU and UND, while other classmates fly drones in another lab. Everyone is enjoying what they're doing, but they are also focused on the task or concept at hand. A good attitude is strictly enforced because, as the students' shirts say, "Your attitude determines your altitude."

"I love this program, the fact that you can start so early and they give you a perfectly laid-out route to follow," said Ryan Lundgreen, 15, a sophomore in his first year in the program. "Everyone here wants you to succeed."

First-year student Trey Lines, 16, wants to become a commercial pilot. But first, he plans to go into the Navy or the Air Force and then on to college. "The best way to go into aviation is to surround yourself in it. EVIT is a great way to get to know the basics and other people in the field," he said. "It makes school unbelievably enjoyable because it's something I'm choosing to do."

The aviation experience for EVIT students also includes field trips, such as a tour of the Pima Air and Space Museum in Tucson. And on Saturdays, students have the option of coming to the East Campus to build an airplane from a SONEX project kit donated by a local Experimental Aircraft Association (EAA) chapter. The plane, which was started three years ago, now has wings and the beginnings of a fuselage, and students are starting to work on the cockpit. Even some EVIT alumni have returned on Saturdays to help complete construction of the plane they started building as high school students.

Students study advanced aircraft systems and aviation meteorology in the

first semester of their second year of the program. They prep for their final semester by studying advanced flight planning, combining flight and air control scenarios, and reviewing ground school basics. In the second semester, they begin flight training for their Private Plane Single Engine Land, a U.S. Federal Aviation Administration (FAA) pilot license. Based on their class performance and an interview, they may also be selected for internship opportunities in maintenance and repair, and in airport operations.

Unmanned aircraft systems (UAS) are the newest addition to EVIT Aviation. Instructor Jim McRae said the UAS industry and its employment opportunities are growing rapidly.

Josiah Plant, 17, is looking forward to earning his pilot license by the end of the 2017–18 school year. He is already earning college credit through the community college partnership and plans to continue at CGCC after he graduates from high school. After he gets his associate degree, Plant plans to enroll at the University of North Dakota with the goal of becoming a commercial pilot and then later, a corporate pilot. He is likely to be successful: 88 percent of EVIT aviation students earn their FAA Private Pilot license or FAA UAS Remote Pilot certificate, and 79 percent go on to college or other post-secondary training ("Certification," 2017), many of them having earned college credits while they were still at EVIT. All of that, Plant said, "definitely helps you prepare for this career."

Fueled by Industry Support

Higher education opportunities are only one part of the partnership equation that equals a successful CTE aviation program. EVIT aviation also has been built on strong support from Arizona's aviation industry, which has a vested interest in ensuring a constant pipeline of trained workers. According to the Arizona Department of Transportation, the state's aviation industry generates \$58 billion annually, with nearly 409,000 jobs directly or indirectly related to aviation. Tourism and aerospace manufacturing are just two of many Arizona industries that depend on a robust aviation industry. Even occupations like aerial firefighting



Trey Lines, 16, prepares to test an airfoil in the wind tunnel at the East Valley Institute of Technology's aviation program.

and game tracking need skilled qualified pilots, according to ADOT ("Economic Impact," 2013).

Like all programs at EVIT, the aviation curriculum has an advisory council of industry representatives who help ensure that the school is training students to meet industry standards and needs. The advisory council includes representatives from flight schools, collegiate programs, repair centers, airport operations, retired professionals and several industry-related organizations, such as the Aircraft Owners and Pilots Association (AOPA). These businesses, schools and organizations not only provide guidance, but also equipment and scholarships.

"All the partnerships we've developed over the years have really helped," said instructor Lou Amadee. "The aerospace industry is growing and they're doing everything they can to get more youth involved."

That's why the EAA donated the SONEX

plane kit and is supervising students in their plane-building project. It's also why the Copperstate Fly-In, an annual aviation and education expo at Mesa's Falcon Field Airport, embraces having EVIT students assist with the event.

In a presentation to the AOPA, Amadee offered the following tips for schools that are interested in starting a CTE aviation program:

- Gather a support group of interested individuals.
- Seek guidance from local aviation schools.
- Contact your Chamber of Commerce for a list of local companies with an interest in aviation.
- Attend aviation-related events to network and get ideas.
- Seek out aviation organizations for their support (Amadee, 2016).

Getting Their Wings

EVIT attracts visitors from all over the nation who want to learn more about its central campuses. But in the case of EVIT aviation, the story of success is best told by its alumni, many of whom love to visit; some have even returned to EVIT as assistant instructors through college internships.

- Michael Charlton, class of 2012, is now a radar controller for Chicago Center and is the center's youngest certified controller.
- Alex Rodriguez, class of 2014, is a flight instructor for the University of North Dakota and wants to eventually fly jets and use his training and skills to fly food and medical supplies to countries in need.
- Halana Perkins, class of 2012, is also a flight instructor for UND and is one of many female students who have found success in aviation. EVIT en-

“Downey urges CTE educators to follow their instincts, student interest, and most importantly, the needs of business and industry when determining CTE programs to provide at their schools.”

courages female students, who are considered nontraditional in aviation, to pursue careers in the industry. Two such individuals — Donica Wolf, class of 2014, and Emma Allinger, class of 2013 — became the first female EVIT students to solo an aircraft while still in high school: a Cessna 172 airplane and Robinson R44 helicopter, respectively.

- Taylor Izard, 20, completed the aviation program in 2015 and had been working as a flight instructor for UND. He returned to EVIT last fall to let Amadee know about his new job as a corporate pilot for Tradewind Aviation in White Plains, New York, flying upscale planes for CEOs and Fortune 500 members throughout the northeast U.S. and in the Caribbean.

His CTE aviation training at EVIT prepared him well, Izard said. When he went to flight training, he already knew many of the things other students were learning for the first time. “EVIT Aviation is a great program,” he said. “It gives you a really good chance to get involved

in the industry, to meet people and get a taste of what aviation is like.”

Originally, state education officials told Downey that EVIT couldn’t offer aviation because it wasn’t on the state-approved list of CTE programs. “We started it anyway,” she recalled. Aircraft mechanics is on the state list and offered at other Joint Technical Education Districts, but aviation as it is taught at EVIT is not on the list. Still, that hasn’t stopped EVIT from offering the program, students from enrolling and earning pilot licenses, or higher education and industry from supporting the program.

Downey urges CTE educators to follow their instincts, student interest, and most importantly, the needs of business and industry when determining CTE programs to provide at their schools.

“Business and industry will support you if they know they will get a return on their investment, especially when they need that pipeline of skilled workers,” she said. “In the case of aviation, it’s a mutually beneficial partnership that meets industry needs and gives our students the wings to make their career dreams fly.” ■

CeCe Todd is the public information officer for the East Valley Institute of Technology in Mesa, Arizona. Email her at ctodd@evit.com.

REFERENCES

Amadee, L. (2016, November). *Panel*, presented during the 2016 AOPA High School Aviation STEM Symposium, Seattle, WA.

Arizona Department of Transportation, Multimodal Planning Division Aeronautics Group. (2013). Economic impact of aviation in Arizona: Statewide report. Retrieved from https://www.azdot.gov/docs/default-source/airport-development/az_aviation_impact_study_final_web.pdf?sfvrsn=2.

East Valley Institute of Technology. (2017). Certification and placement data. Mesa, AZ: Author.

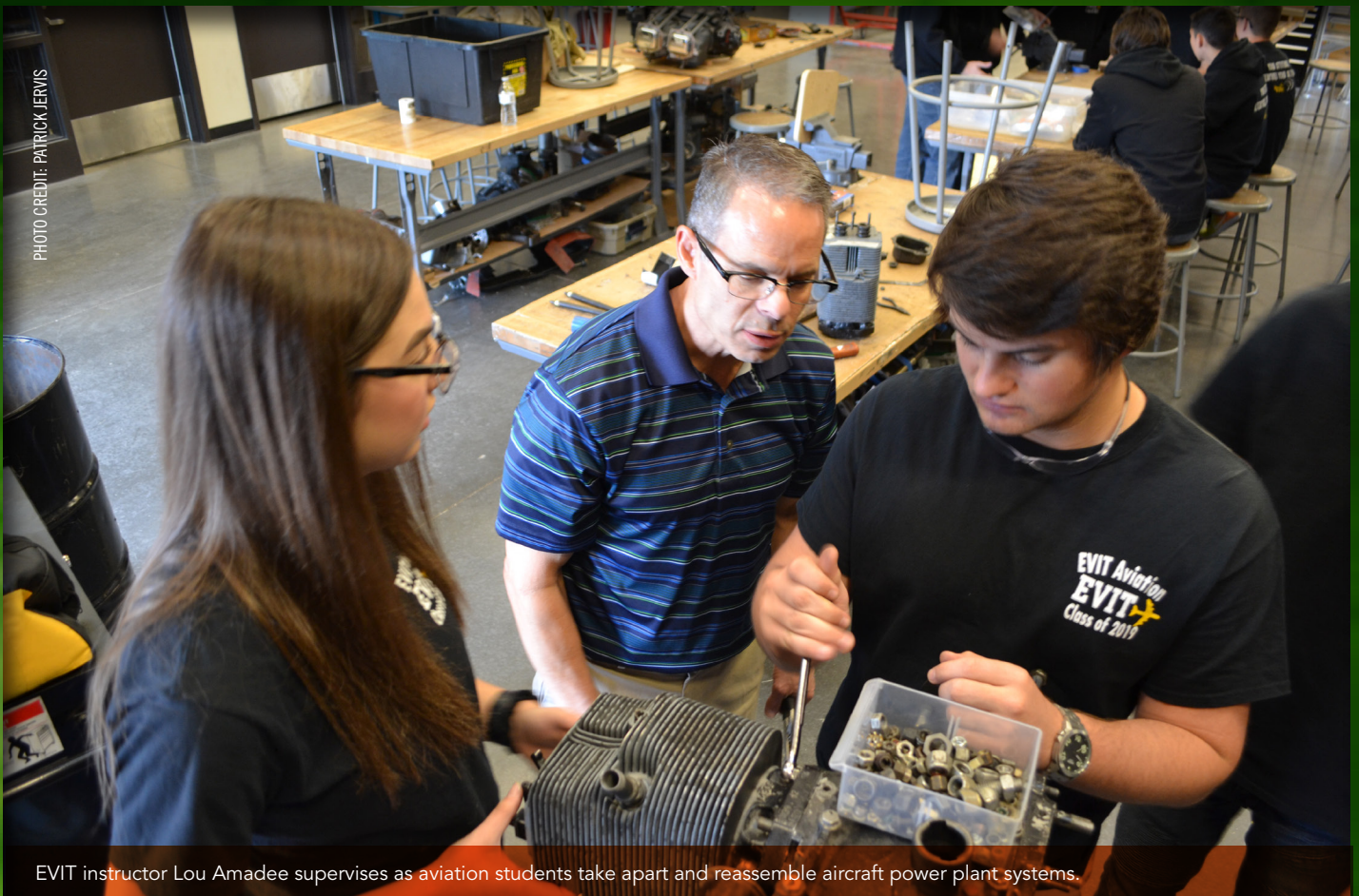
The Boeing Company. (2017). Pilot and technician outlook: 2017-2036. Retrieved from <http://www.boeing.com/commercial/market/pilot-technician-outlook/2017-pilot-outlook/>.

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EVIT aviation students spend the majority of their class time in labs where they engage in hands-on activities.

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EVIT instructor Lou Amadee supervises as aviation students take apart and reassemble aircraft power plant systems.