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**LEADERSHIP** 3/18/2016 @ 1:02PM 3,365 views

## America's Students Take Flight: How Innovative Education Is Curing The Pilot Shortage

Children see glinting planes in the sky and dream of being there, high above the earth, free to travel to distant places. Most of us discard this dream with childhood, however, as there is no clear pathway from our day-to-day lives to a career in aviation.



*Skills shortages in the aviation industry as Boeing predicts a need for 1.1 million pilots and mechanics over the next 20 years (Thomas Lohnes/AFP/Getty Images)*

Aviation executives also have dreams. They dream of a large pool of skilled, talented workers from which to fill the increasing number of jobs in the aviation industry.

Can we build a bridge between these two, complimentary sets of dreams? Two new programs anchored in the public schools think we can.

Chicago's *AeroStar Aviation Exploration Apprenticeship*, founded by AeroStar CEO Tammera Holmes, gives up to 75 interested students each year a solid background in everything pertaining to aviation, including history, airplane parts, flight theory, airport basics, avionics systems, aerospace technology, space travel and the future of aviation. The AeroStars Program, as its known, has a particular commitment to helping minority and female students get solid skills in aviation.

AeroStar students are highly motivated. They have a strong interest in aviation and STEM subjects and are always up on the latest aviation news. "When the Malaysian Airline plane disappeared in March 2014," says Holmes, "they wanted to know how to track it. So we did a 'find that plane' module." Eventually the students presented their findings to highly impressed executives at United Airlines.

Though she is a pilot herself, Holmes stresses that their program explores numerous aviation and aeronautics-related careers, focusing on technology and systems. She notes that both pilots and mechanics are in demand. In fact, Boeing predicts a need for 1.1 million pilots and mechanics over the next 20 years. "And jobs in the aviation industry are well-paying jobs," observes Holmes.

On the west coast, in Orange County, California, pilot and math teacher Stephen Smith had a similar idea. In 2014, he created the **Canyon High Aviation Program**, which started with 37 students – "mostly boys," Smith notes, "but we are trying to attract more girls to the program."

Canyon High offers two electives: **Aviation I** and **Aviation II**, and Smith is adding a freshmen-level **Careers in Aviation** class this fall.

Canyon High's program focuses on pilot training. "The pilot shortage is already here and it is just a matter of time before the crisis reaches the majors," says Smith, noting that the airlines are already worried about it. "United Airlines came and spoke to our students about how they have created a department to figure out how to deal with their future needs. They said they are looking at reaching out to students even younger than high school."

One Canyon High student graduated with his pilot's license last year, another finished over the summer, and all students who complete the program have the knowledge and skills needed to complete the written portion of the pilot's license exam. "Those results are good for two years," Smith observes, giving students time to acquire the necessary flying hours.

Smith encourages the students to get involved in their local pilots' associations and attend community events. "In the aviation world, people who have been pilots for 20-30 years, really want to help kids realize their dreams." One student who attended a recent event got the offer of free flying lessons from a local pilot.

Holmes and Smith are also building links to postsecondary education. AeroStar is forming partnerships with Southern Illinois University (a four-year university) and The City Colleges of Chicago (a two-year technical program). Canyon High is working out articulation agreements with several local community college aviation programs, and Smith says, if nothing else, nearby colleges (there are three junior colleges and one four-year university in the area that have aviation programs) will probably offer credit by examination to students who have passed the FAA private pilot written exam.

Both AeroStar and Canyon High have flight simulators and other technical equipment, including remote control helicopters, drones, laptops and aeronautical charts.

AeroStars' equipment is funded by After School Matters, and they are currently seeking support from companies like Boeing and United Airlines. Tammera Holmes believes it's in the companies' interest to do so. "Baby boomers are retiring – there's going to be a skills shortage. Chicago is an aviation hub. These companies will need skilled workers." AeroStar has secured space on Chicago's South Side to create the AeroStar Avion Institute, a Not For Profit Aerospace STEM training facility that will be dedicated to serving students from K-12 and college kids, through to adult learners.

Smith also believes in business involvement. "We need to get beyond field trips and guest speakers," says Smith. The hope is that local aviation businesses will offer free flights to aviation students, and in the future, internships or apprenticeships.

Holmes and Smith suggest that the industry model requiring college degrees for entry-level positions could soon change. "Entry-level candidates for airline jobs – even the best – don't have skills. We have high school and college graduates that have been professionally educated but not skillfully trained," says Ms. Holmes.

AeroStar and Canyon High are changing that, by giving high school students the skills they need, at a fraction of the cost, to turn their aviation dreams into challenging, high-paying careers.