NJAEC Aviation Newsletter
Spring 2023

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Aviation Education Council

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Message From the Executive Director

Dear readers, while researching ideas for this issue, I came across thoughts from others who could tell you more eloquently than I...

"The desire to fly is an idea handed down to us by our ancestors who... looked enviously on the birds soaring freely through space... on the infinite highway of the air".

Wilbur Wright

For centuries humans dreamed of flying. The ancient Greek myth of Icarus, killed attempting to fly when the wax on his artificial wings melted, was an early expression of this desire. This myth also reflected the realization that human flight would be difficult, perhaps impossible. Yet the dream persisted. Writers who speculated about future societies often included controlled human flight in their utopian fiction. In several of his stories, Cyrano de Bergerac described interplanetary journeys, while Jonathan Swift made a huge flying island the focus of the third voyage in Gulliver's Travels. Medieval and Renaissance scholars Roger Bacon and Leonardo Da Vinci speculated on the possibility of human flight. Da Vinci even designed a heavier-than-air machine and a parachute. But human flight remained unachieved until 1783 when the Montgolfier Brothers sent man aloft in a hot air balloon.

For people in many cultures, stories of flying would connect them closer to their beliefs. They could allow them to do something that seemed impossible. Little did they know that human dreams of flight would become a reality one day. The history of flight is the history of a dream. Humans have been obsessed with the idea of flight since the dawn of recorded history. Men have always imagined themselves cavorting among the clouds, wheeling and soaring like birds. The mythology of many cultures abounds with gods and kings borne through the air; the power of flight was often attributed to gods. Allegorical figures and fantastic creatures representing flight abound and frequently take the form of flying beasts or human figures equipped with wings. Myths and legends

played an important part in man's conquest of the air; if he could fly, man would escape the troubles of earth, be free as a bird and be closer to the gods.

"The airplane stays up because it doesn't have the time to fall." "No flying machine will ever fly from New York to Paris… [because] no known motor can run at the requisite speed for four days without stopping." "If birds can glide for long periods of time, then… why can't I?"

Orville Wright on Dreams, Hope, and Life

"If you can dream it, you can do it" – Walt Disney

Dreams can come true…

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Signed,

Michael Castania

Executive Director

NJ Aviation Education Council

Message from the Editor

Over the last 5 and a half years, aviation education went from a curiosity to a passion. I feel lucky and blessed to be part of the aviation community and help foster new aviation programs across New Jersey. Starting July 1, Mr. Keith Bigora will take over the aviation program at the Morris Hills Regional District as I focus on other projects for the district. I am excited to see his vision for the program become a reality as he looks to take aviation education in our district, and across the state, to a new level.

I have been blessed with many opportunities and experiences over 30 years in education. Never in my wildest dreams did I imagine starting the first aviation program aligned with AOPA's You Can Fly! Initiative in New Jersey, watching 15 other schools follow in our footsteps, and working with educational organizations around the country to develop aviation education programs to meet the needs of our national and global infrastructures. I never imagined the number of students passing through our aviation programs and moving on to secondary experiences that will lead them to the left seat and beyond. I never imagined their successes as many have already received their PPL and are continuing their aviation education. The postsecondary successes of our aviation students across the state are a testament to New Jersey's aviation students, teachers, and supporters who give so generously of their time to educate others about aviation. If you are not a member of an aviation group, please consider doing so right away. The opportunities afforded to me by the Civil Air Patrol and the NJ Aviation Education Council have been rewarding to me, my students, and my staff.

It has been a privilege to be part of the aviation education community. As I move on to new roles, I will still be part of the New Jersey Aviation Education Council and the Civil Air Patrol and continue to put this newsletter together. Please consider contributing an article for the next edition, which is due out later this fall.

Stay Strong, Stay Healthy

Kevin S. Doyle, Ed.D.
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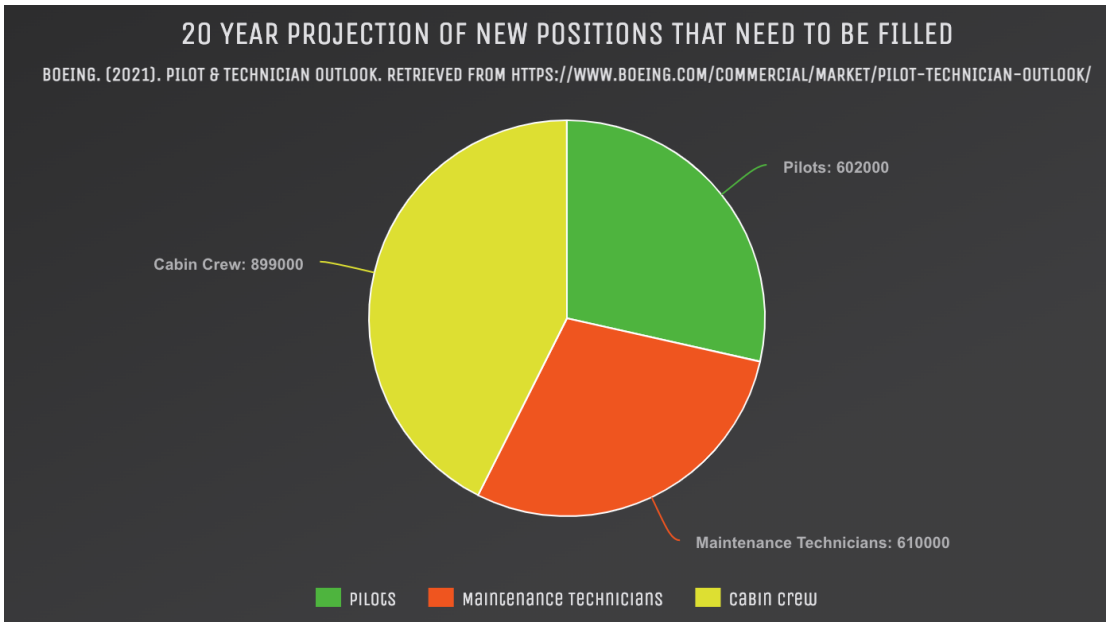
Taking Flight: Why Aviation Education is Crucial for High School Students

By Matthew Mawn

High school aviation courses are a relatively new concept, or at least for me, they are. I graduated in 2008 with the idea that the word aviation equated to pilot, and the only way to be a pilot was to join the military. The field of aviation was never on my radar as a potential career choice. Although I had taken commercial flights, I was never exposed to the opportunities that exist in aviation until I was 32 years old and ten years into my career.



Aviation education is extremely important for high schools that wish to best prepare their students for the world of tomorrow. According to Boeing, it is projected that over two million new maintenance technicians, cabin crew members, and pilots will be needed to meet the demands of airlines worldwide in the next twenty years. We owe it to our students and community to do our part in meeting these vacancy demands.

One of the major benefits of offering aviation courses to high school students is career preparation. As students enter high school, they begin exploring curriculum content more in-depth, often with aspirations to pursue the content in college and beyond. Providing students with opportunities to explore the aviation field has the potential to spark curiosity and passion for aviation that previously may not have been discovered.

Aviation programs provide students with knowledge and skills that are relevant to careers in the aviation industry, such as piloting, air traffic control, aviation

mechanics/technicians, and cabin crew. Students may also be exposed to other career paths within the aviation industry that they may not have been aware of before, such as aviation safety, airport management, aviation law, and aviation research and development. Many of these careers require a significant amount of time and education. Therefore, exposing students at a young age gives them a head start in their planning for the future. The vast number of career opportunities in aviation ensures that students from all backgrounds, with different aspirations in life, can benefit from a high school aviation course.

If you poked your head into a high school aviation classroom, you'd witness students developing their critical thinking and problem-solving skills through hands-on learning. Whether it's through the use of simulations, aeronautical mapping, operating drones, or reading a barometer, students are gaining the skills necessary to apply their knowledge and solve the problems of tomorrow, today. The hands-on nature of aviation is one of the many reasons why aviation programs continue to flourish in student enrollment once implemented.

The last, and arguably the most important, reason to bring aviation to your high school is for the leadership and confidence-building opportunities it offers students. As students embark on their journey in aviation, they experience the satisfaction of seeing their skills progress on a daily basis. This sense of pride and confidence accompanies them as they continue to progress in life. For example, students can witness the growth and application of their knowledge by learning the necessary skills to earn their commercial drone license by passing the Part 107 in just a year's time.

Aviation education is not just about flying planes, it's about providing our students with the skills and knowledge they need to succeed now and later in life. As the demand for aviation professionals continues to grow, we must ensure that our students can explore this exciting and evolving industry. It's time to take flight and allow our students to soar to new heights!

Written by: Matthew Mawn, Supervisor of Grades 7-12 Science, Engineering, Design, Technology, & Visual Arts at Roxbury Public Schools
Twitter

NJ AVIATION HALL OF FAME OPEN COCKPIT EVENTS

Janis Blackburn

Six times a year, in April, May, June, Sept, October, and November, the NJ Aviation Hall of Fame located at Teterboro Airport hosts an open cockpit day. This means that along with the two floors of aviation history in the museum, the aircraft in the yard are open for patrons to visit.

A visit usually begins with an eleven-minute movie informing everyone about the rich aviation history in the state of New Jersey. It takes you from early aviation days, a balloon flight from Philadelphia to its landing in Deptford, NJ, all the way up to the importance of NJ in space flights.

Following the film, people are able to roam the two stories. The Hall of Fame room is filled with plaques of famous and non-famous aviators who have flown and influenced aviation among the young. Everyone inducted was either born in NJ, lived in NJ for a significant length of time, or did a large amount of flying in NJ.

From there, people usually head to the larger room where there are hands-on activities for the children and information about space flight, including a film on flying in the ISS. A large display about Lindbergh and information about the Hindenburg , among other displays.

Their airline room has a lot of models of airliners, including airlines that are no longer around. A major item to see is the old Eastern Air Lines simulator that pilots used to be trained in instrument flying.

Once upstairs, the children can sit in a cute little “airplane” and see how the flight controls move.

Once outside in the yard, various aircraft and trucks are opened for the patrons to sit in, see and learn about them. These include the last Martin 202 airliner in existence, the cockpit and part of the first class section of a TWA Convair 880 jet, a MASH helicopter, a couple of WW I trucks and, favorite of the smaller children, a fire truck, to name a few.

The next open cockpit is June 17th. It runs from 10 am to 4 pm. It takes at least 1 ½ to 2 hours to go through the museum and aircraft.

Learning to Fly One

By Liam Barkey

In a small, empty clearing, I flew the remote control plane across an opening between the trees and then turned it at a ridiculous bank when it reached the edge. I loved hearing that distinct buzzing of the tiny Sport Cub S motor swooping over my head. I spent hours not only building the plane but also fixing the various parts that were prone to breaking on the styrofoam frame. Eventually, I wanted more, researching aerodynamic and electrical upgrades and the principles behind much larger planes. I have always been obsessed with airplanes. Every time we left NYC to visit family in New Jersey, I waited for that moment on the New Jersey Turnpike where, if I were lucky, the commercial jets would fly exactly over the car, and I could watch them through the sunroof. I have always been mesmerized by the aerodynamics and engineering that makes it all possible. I wanted to have something of my own that could satisfy my curiosity about these principles.

It took about a year of interjecting safety statistics into casual conversation and even a presentation or two to convince my parents to let me take an intro flight when I was 14. From the second the Cessna 172 lifted off the ground, I knew I couldn't let anything stand between me and my pilot's license. Actually seeing the engineering and aerodynamics I had read so much about working in perfect unison illuminated what makes flying so special. I have been lucky enough to have an incredibly experienced instructor who has both kept me excited to fly and helped my parents stay confident in my safety.

There is so much more to a plane than simply the sum of its parts. What matters most is how the parts work together in a cohesive design. A similar concept has manifested, especially in some of my most stressful situations as a student pilot. As you become more familiar with the plane, the information you used to get from the gauges now comes by instinct and feel. I had to learn this before I began landing the plane myself. Some gauges have a lag, there are too many to focus on as the numbers rapidly change, and gauges are sometimes inaccurate on old, small Cessnas. There have been many times when I was flying almost completely by feel, my instructor, watching the gauges, and she applauded me for intuitively straying beyond the suggested guidelines in an important and proportionate reaction to a change in conditions. If you hit a sink, add 100rpm; if you get bumped off course by a gust of wind, correct with some rudder or perhaps aileron. This also means that it is important to be familiar with the plane since there are so many variables with respect to plane models and environment. No plane will climb its best when pulled up as hard as possible. This results in a connection between a pilot and their plane where the pilot may push a plane but simultaneously respect its limits.

Flying has taught me many life lessons and much about myself. Understanding that the plane's parts must function in unison has helped me reflect on the people who I have worked well with. I have found that my best relationships are those in which we complement each other's strengths and weaknesses. This is similar to a teacher approaching a new lesson, not just from the beginning of the material but from the student's level of knowledge or level of confidence. The teacher and student collaborate to safely and effectively educate the student. Knowing that my instructor has given me the skills I need helps me have faith in my ability at every milestone. It can be incredibly exciting to take calculated risks while trusting your instincts. As a result, I have become more confident in taking on other new experiences and trusting myself, taking advantage of the world around me.

Learning to Fly Too

By Alex Shuey

For years, I would wake up with an index card under my pillow. When I was younger, my father used to work late, so I wouldn't see him before I went to bed. However, he often left drawings under my pillow once he got home. These were all of the same thing: airplanes or rockets. I'd wake up to Cessnas, Pipers, 737s, and even space shuttles. Despite all this, he claimed to have no influence when I approached my mother at age 10, adamantly demanding that I needed to fly an airplane.

"Alex," she sighed, "you've been on an airplane before to visit Grandma, remember?"

"No," I said firmly. "I need to fly one."

Step 1: Preflight:
I longed quietly for years. Though I tried my hardest, I couldn't convince my mother that my ten-year-old self was ready to fly an airplane. I did, however, do everything I could to learn about them. I grabbed my father's AOPA magazines, deciding that my dream airplane would be a yellow Piper Cub. For my 15th birthday, my father bought me access to a "ground school" course that would teach me everything I needed to pass the written FAA exam, and I fell in love all over again. Learning the intricacies of a Continental motor's fuel-injected engine was not something I thought I would enjoy, yet I suddenly found myself reading about them just for fun. I found the carefully designed systems of airplanes to be absolutely fascinating.

Step 2: Takeoff.
The first time I flew a plane was early in my freshman year: my first flying lesson. We taxied out to the runway, and my instructor said, "You're going to take us off." I was shocked, but she assured me all I had to do was pull back on the control stick -- and boom! We were flying. It felt as if the world lit up at that moment. Studying airplanes from afar and watching videos was one thing, but this was something way beyond. I could feel the moment the wings caught the air and the wheels left the runway. I was experiencing Bernoulli's principles, and I was hooked.

Step 3: Cruise.
The feeling of flying an airplane is surreal; it's what drew me in initially, but that alone isn't what excites me most. It's bearing witness to such an impressive application of science. It's amazing how things work together. Everything I learn how to do in an airplane has a tangible scientific reason behind it, and I've learned more than I ever thought possible. Flying isn't just about knowing how to operate an airplane. I've used physics to understand the four forces of flight, meteorology to ensure I can differentiate

between low and high-pressure areas, and chemistry to understand how fuel and air react. It's a lot to keep track of, but it fascinates me like nothing else. The more I learn, the more I want to know.

Step 4: Landing.
I still sometimes get index cards from my dad, although they now detail landing patterns, altitude and airspeed values, radio calls, and more. We study together, and I make them for him too. Flying changed my life; you change perspectives literally when you're up there, but my outlook on almost everything also shifted. I have such a new appreciation for engineering and careful design. Every day I realize more and more how lucky I am to get to experience it. Someday, I will design an airplane that will make ten-year-old me and her AOPA magazines proud, and I can't wait for her to fly it.

Ocean County Aviators Give Boost to Armless Pilot

Being born without arms has not kept Jessica Cox from living a full life. Using her feet as most people use their hands, she is able, among other things, to drive an unmodified car with an unrestricted license, type 25 words per minute on a keyboard, pump her own gas, put in and remove her contact lenses and eat with chopsticks. She is also a certified scuba diver and a black belt with the American Taekwondo Association.

But what really sets this remarkable woman apart is the fact she is the world's first licensed armless pilot. Cox earned her pilot's certificate on Oct. 10, 2008 after three years of training, and is qualified to fly a light-sport aircraft at altitudes of 10,000 feet.

However, the Tucson resident is looking to upgrade from her Ercoupe plane to an RV-10 model, and such a plane is being built for her by the Experimental Aviation Association chapter in Ocean County.

"The Ercoupe was built in the 1940s for hand control," said Cox. "I just put my feet where most people use their hands, so it is uncomfortable. I basically cross both legs in order to reach both the throttle and the yoke. The RV-10 will be the first purpose-built airplane with specific foot controls. It is built from the ground up."

She said with her current craft, the longest she can fly is about an hour. She said Ercoupes were no longer manufactured after 1970.

"However, the RV-10 will allow me to fly for longer distances and much faster," said Cox. "That way I can continue the mission of my nonprofit, which is to show the world that disability does not mean inability."

Gene Bunt, president of the EAA chapter, is also executive director of the national Ercoupe Owners Club, which is how he came in contact with Cox.

"One of the EAA chapter's activities is building planes," said Bunt. "Knowing how remarkable Jessica is, we thought we could do this for her."

Robert Newman, who is coordinating the construction, said this is by far the most ambitious project the group has undertaken.

"It is probably going to take two years," said Newman. "Engineers from the University of Arizona (Cox's alma mater) are going to design the foot controls. We also have aeronautical companies contributing with the electrical system and other features."

He said when finished, the plane will weigh approximately 2,000 pounds. It will be 25 feet long with a 30-foot wingspan.

“It will also be able to seat four people, where the Ercoupe could only fit two,” said Newman.

Jessica Cox

Cox and her husband, Patrick Chamberlain, have made several trips to Ocean County to help and check on the progress of the project.

“Patrick is also involved in the construction of the plane,” Bunt said.

At a recent EAA barbecue, several Ocean County officials stopped by to meet Cox. Ocean County Commission Director Joseph H. Vicari presented her with a certificate.

“He was honoring Jessica for her community and motivational work,” said Bunt.

Cox travels around the world as a motivational speaker with the slogan “Possible Thinking: Achieve the Impossible.”

“I show audiences around the globe how to inspire enthusiasm and build authentic confidence,” she said. “With the goal of showing people how to go home from work every day feeling excited for tomorrow, I teach how to courageously tackle new challenges with creativity and unrelenting drive. Since I was born without arms, I became fascinated by the limitless ways the human body can adjust to a variety of circumstances. I utilized dormant physical traits to adapt and use my feet the way people use their hands. As I learned to conquer physical barriers, I developed mental skills that allowed me to go on to achieve the seemingly impossible in my own, unique way.”

— Eric Englund

ericenglund@thesandpaper.net

Kurt Stofko, NJAEC member, modeling the t-shirt Jessica Cox gave to all the members of EAA 898, who are working on building her RV-10 for her.

Permission to use this article granted to Kurt Sofko by Eric Englund

Roxbury High School Aviation

In 2020 - 2021, Roxbury High School implemented the first year of a four-year aviation program, utilizing curriculum provided by AOPA (Aircraft Owners and Pilots Association). The program prepares students to take their drone pilot or private pilot's license, and introduces them to many aviation careers. Students learn about aircraft and its systems, the policies and procedures of flight, and how to fly an airplane and a drone. Students get hands-on experiences with both, as the program has 11 flight simulators and multiple drones.

Any student is eligible to join the program, and Roxbury has an Aviation Club for those who aren't in the class (or want to be involved outside the class as well). The program currently has over 50 students in four sections, spanning Aviation 1-3. Roxbury has hosted aviation organizations (United's Aviate, American Airlines Cadet Academy, and FAA Career Panel), featured several guest speakers (current commercial airline pilots, Civil Air Patrol, and Air Traffic Controllers), and went on several field trips (United's Maintenance Hangar, Newark's Air Traffic Control Tower, and Morristown Airport). In May, the New Jersey State Police landed their Northstar helicopter on the field at RHS to discuss their careers and teach about the helicopter.

The program has had many successes so far, with 9 students at least taking an intro flight and five currently doing flight training. Each year, AOPA offers 80 student scholarships and 20 teacher scholarships generously provided by The Ray Foundation. Tyler Benedetto (junior) and Mr. Mike Gottfried (Aviation Teacher) from RHS were recipients of $10,000 scholarships in 2022. With the help of this award, Benedetto completed his Private Pilot License in January 2023, and Gottfried, along with Luke Scaraggi (senior), will complete their licenses this summer. Luke plans to attend Embry-Riddle Aeronautical University in the fall and continue his dream of becoming a commercial airline pilot. Max Corsi (senior) plans to attend Purdue University and study Astronautical and Aeronautical Engineering next year. In addition, Benedetto earned his Part 107 commercial drone license in May 2023, and Yuriy Hrytsay (sophomore) hopes to earn his Part 107 by the end of June. Instructor Mike Gottfried explained, "I couldn't be more impressed with the growth of our program, and accomplishments of our students. It's amazing to see where things have gone in three years, and the opportunities we've been able to create. I'm excited to build on this next year."

Roxbury High School Administration has extremely well supported the program and is successful because of its commitment to it. The program has helped create an "Aviation Roundtable" with Morris Hills/Knolls for surrounding districts with aviation programs,

and is actively working to strengthen each of the respective programs through a collective effort and shared resources. A couple of initiatives for the fall include an Aviation Night and a drone obstacle course. The program has seen great success thus far, and intends to build on it moving forward. The aviation industry desperately needs qualified people, and Roxbury intends to help fill that gap.

Mike Gottfried teaching Aviation at Roxbury High School

Updates

Egg Harbor Township Aviation students had the opportunity to visit the William J Hughes Technical Center on April 24th for their annual FAA Stem Day. The FAA hosts a tour for high school students each Spring. The students could tour 18 interactive displays, information booths, and technology demonstrations showcasing the Technical Center's research. During that time, FAA employees discussed their backgrounds, education, and the path leading them to their careers. Students could interact by asking questions and witnessing first-hand careers available to them and the latest technical research being performed at the technical center. All had a great day!

New AOPA "You Can Fly" Schools

Barnegat High School

Hoboken High School

Trenton Central High School

Daylight Twilight High School

Resources

SAAP
Smart Airport and Aviation Partnership

https://www.smartaviation.org/

Pathways to AVIATION

https://pathwaystoaviation.org/

Scholarships and Awards

AOPA Foundation You Can Fly High School Flight Training Scholarship - **Louis Primerano** (Morris Hills High School)

AFA Chapter 195 Teacher of the Year: **Michael Gottfried** Roxbury High School

Events

NJ Aviation Hall of Fame

Open Cockpit Dates 2023

- June 17
- September 10
- October 8
- November 11

400 Fred Wehran Dr, Teterboro, NJ 07608

https://njahof.org/

Young Eagles

For more information, go to

https://youngeaglesday.org/?yehome

AIRFEST 2023
Naval Air Station Wildwood Aviation Museum
10:00 AM – 4:00 PM
September 1 - 4