



NEW YORK WING, CIVIL AIR PATROL



AEROSPACE EDUCATION NEWSLETTER ONLINE

January – February 2022



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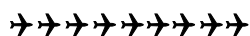
NEW YORK WING AEROSPACE EDUCATION GOALS – 2022

- Increase the number of Squadrons that earn the **Squadron Aerospace Education Achievement Award (SAEAA)** by 20%: **Goal for FY22 – 44 Squadrons**
 - 37 Squadrons earned the SAEAA in FY21 (COVID adjusted criteria)
- Increase the number of Squadrons that order **STEM Kits** from NHQ and complete the evaluation report by 20%: **Goal for FY22 – 29 Squadrons**
 - 24 Squadrons ordered STEM kits and completed the evaluation reports in FY21
- Increase the number of Squadrons that complete the **Aerospace Excellence Award (AEX)** by 25%: **Goal for FY22 is 33 Squadrons**
 - 27 Squadrons completed the AEX program in FY21
- Publish 6 bi-monthly issues of **Wing Tips**
- Hold 4 quarterly Wing AEO Meetings
- All NYW AEOs hold the Specialty Track Tech Rating



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BUT THE ACTIVITY REPORT IS NOT DUE UNTIL 30 OCTOBER!

Lt Col Anita Martin
Director Aerospace Education

“You cannot let this be your mantra.” You must plan to meet your AE goals. If you have no goals, you have no direction to aim for. The result is *“If you fail to plan you plan to fail.”*

You must have a documented meeting between the AEO and the unit commander to satisfy the CAPR 50-1, Attachment 4, Squadron AEO requirement. With this, the AEO *“Discusses the AE Activities planned for the upcoming year with the squadron commander and documents the meeting in the AE Notebook or digital record.”*

To assist you, the NYW AE Department has developed a [Plan of Action](#) (POA) to help you win the [Squadron AE Achievement Award](#). This form provides an outline to make it simple to develop your AE plan to satisfy the National

requirements, ensuring your squadron receives credit for the **AE Activity Report**.

You should have recently received an email reminder to make sure that the squadron plan has been looked at for the FY 2022 and the meeting has been documented on the paper form (or it could be digital) with initials and date of meeting. This will satisfy the new inspection AE Tab requirement:

“Did the AEO and the commander discuss AE Activities for the upcoming year? AEO will provide notes or audio/video record of discussion between AEO and CC about future AE activities.”

If the commander is serving as the AEO, the commander should seek out another officer who might take the job. If no officer is available, the commander may consider an executive level cadet who is looking for more responsibility.* If this is not an option, make sure the commander initials and dates in both places to show what AE Activities are planned. Save this documentation for your SUI Inspector.

If you did not complete STEM kit evaluation last year, go ahead and do so now. You may then order another STEM kit for this fiscal year. Reminder: AEOs are a key component of your squadron earning the Quality Cadet Unit Award (QCUA). **This purely objective award closes 31 August!**

QCUA: Aerospace related . . . Unit has submitted an Aerospace Excellence Award (AEX) Completion Report or sent in an AAR after ordering a STEM Kit during this award cycle. So, this doesn’t even wait for 30 October!

**A cadet taking on this responsibly might be nominated for the AFA AE Cadet OTY award or a Brewer Award – Category 1!*



Quality Cadet Unit Award

List of 2020/2021 Winners

NER-NY-033	Putnam County Composite Squadron
NER-NY-048	Westchester Cadet Squadron 1
NER-NY-117	Col Francis S. Gabreski Cadet Squadron
NER-NY-159	Dutchess County Cadet Squadron
NER-NY-238	Col Johnnie Pantanelli Composite Squadron
NER-NY-273	Rochester Composite Squadron
NER-NY-283	Twin Tiers Cadet Squadron
NER-NY-288	Lt. Quentin Roosevelt Cadet Squadron
NER-NY-292	Southern Tier Cadet Squadron
NER-NY-301	Phoenix Composite Squadron
NER-NY-311	9th Suffolk Cadet Squadron
NER-NY-328	Suffolk Cadet Squadron 10
NER-NY-417	Stalwart Cadet Squadron

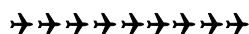
QCUA Program

The award criteria are entirely objective. Units with a minimum of 20 cadets that meet at least 6 of the 10 criteria listed below on 31 August 2022, earn the award. *Note that there are new and adjusted criteria for 2022. See article below.*

Congratulations to the **Thirteen NYW Squadrons** that earned the **Quality Cadet Unit Award (QCUA)** certificate, emblem and streamer for their 2021 activities – **and we tip our hat to our AEOs who contributed to this success!**

Our AEOs have a direct impact on whether their squadron earns the QCUA; five out of seven activities (2021 Criteria) were needed to win AND three of those were directly AE and AEO related!

- Guiding AE sessions that help cadets understand the concepts and history presented in their Aerospace Dimensions booklets to pass their AE tests and earn their promotions (at least 40% of cadets to earn their Wright Brothers Milestone to earn a point)
- Completing an AEX program (by 31 August) and/or sending in an After-Action Report after ordering a STEM kit
- Leading cadets to participate in a STEM Competition such as: TARC, StellarXplorers, or UAS4STEM



2021-2022 QCUA CRITERIA

Below is a list of the criteria, including those that are new and adjusted for 2022. Also listed are tips for how AEOs can get involved and support the QCUA achievement.

- **Enrollment:** Unit has at least 20 cadets listed on its roster
- **Onboarding:** 70% of all new cadets since 1 Sept 2021 completed Achievement 1 within 8 weeks
- ***Cadet Achievement:** 45% of cadets on roster have attained the Wright Brothers Award (*This requires passing 2 Aerospace Dimensions Modules online tests - AEOs can have direct influence on which AD Modules the cadets pick [they are numbered 1 to 6, and tests can be taken in any order; many cadets have reported that AD 4, 5 & 6 are easier than 2 & 3, with 1 being the hardest of all]*)
- ***Orientation Flights:** 70% of cadets on roster have first flight credit (*O-flights come directly under AE and we need to encourage more AEOs to learn how to organize them and how to be an effective OIC for this cadet activity. A virtual "how-to" session is being planned.*)
- ***Encampment:** 40% of cadets on roster have graduated encampment

- **Emergency Services:** 60% of cadets on roster have General Emergency Services certification
- **Outside Activities:**** Unit hosted a Red Ribbon Leadership Academy or participated in a STEM competition: CyberPatriot, TARC model rocketry challenge, StellaXplorers, UAS4STEM (*Totally within the AEO sphere*)
- **Aerospace:** Unit has submitted a Aerospace Excellence Award (AEX) Completion Report or sent in an AAR after ordering a STEM Kit during this award cycle (*We have direct control*)
- **TLC Graduates:** Unit has at least 3 current Training Leaders of Cadets graduates on its roster (*AEOs can help by making sure to take and stay current with their Training Leaders of Cadets courses - Basic, Intermediate, etc.*)
- ***Specialty Track:** Unit has at least 2 Senior Members with a Cadet Programs Specialty Track rating (*AEOs who work with cadets, can easily fulfill requirements to get their CPO Tech rating*)

* New or adjusted for 2022

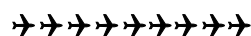
Outside Activities**

The goal of the **Outside Activities** criterion is to encourage units to interact with organizations outside of CAP. The following activities/competitions are approved for credit:

- [Red Ribbon Leadership Academy \(RLLA\)](#)
- [Team America Rocketry Challenge](#)
- [UAS4STEM](#)
- [CyberPatriot](#)
- [StellarXplorers](#)
- More coming in 2023!

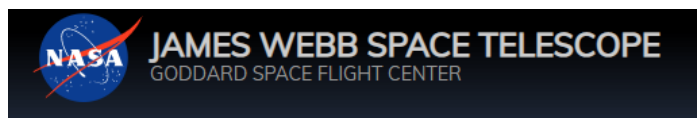
To receive credit for an above STEM competition or RLLA please submit proof of participation here. CyberPatriot and StellarXplorers credit were automatically added to the reporting in March/April. If you're familiar with another STEM competition that you think should be included for future years, please submit to cadets@capnhq.gov for consideration.

[Complete details on the QCUA can be found using this link](#)



JAMES WEBB SPACE TELESCOPE – RESOURCES FOR EDUCATORS

NASA announced, on Monday, 24 January, that after traveling almost a million miles, the James Webb Space



Telescope (JWST) reached its destination, Lagrange Point L2. The most powerful observatory ever sent to space, the JWST was launched on Dec. 25, 2021, to explore the universe and detect the earliest milestones in its formation. In its new home at L2, the JWST will orbit the sun in a gravitationally stable point, allowing it to point its lens toward deep space. While the instruments will not be functioning until about June, the JWST offers a wide of range of educational activities we can share with our members, especially cadets as part of our AE program. NASA has created a dedicated [JWST Site for Educators](#). We encourage you to explore the resources and incorporate them into your AE program.

PUTNAM CIVIL AIR PATROL CADETS WIN FIRST PLACE IN CYBERPATRIOT STATE ROUND COMPETITION

By 2d Lt Bruce Geller

Cadets from the Putnam County Composite Squadron recently won State's 1st Place Award in the Platinum Tier in the XIV season of CyberPatriot – the Air Force Association's (AFA) National Youth Cyber Defense Competition.



Led by Coach 2d Lt Craig Treco and Mentors 2d Lt Bruce Geller and SM Xiaoyan Shao, the team of cadets, A1C Eric Song, Amn Michael Strang and Amn Jacob Leggiero excelled in the CyberPatriot XII State Round held in December, demonstrating teamwork, critical thinking, and technical skills needed for a successful career in cybersecurity. In addition to the State's 1st Place Award in the Platinum Tier in the State Round, the team's performance earned it a spot in the Semifinal Round which took place in January.

The AFA CyberPatriot competition challenges teams of high school and middle school students to find and fix cybersecurity vulnerabilities in virtual operating systems and to understand how to create and secure computer networks. Using a proprietary competition system, teams are scored on how secure they make the system. For cadets Eric Song and Michael Strang, this is their first competition while Jacob Leggiero is a returning competitor. All the cadets receive weekly training in cybersecurity including Windows, Linux, and networking to prepare for the competition rounds.



Each competition round lasts six hours and the cadets work together to find the vulnerabilities in the virtual images provided, take a networking quiz, and create a secure virtual network. Top teams advance through two scoring rounds and the State Round to qualify for the Semifinal Round. The top scoring teams in the Semifinal round will advance to the in-person National Finals Competition in Bethesda, MD, in March.

The Putnam County Composite Squadron has been competing in the AFA CyberPatriot Competition since the 2014-2015 competition, and it is open to any cadet in the squadron and nearby squadrons interested in learning how to combat cyber threats by identifying vulnerabilities and securing networks.

For information on how to join the Putnam Country Composite Squadron Team, please contact Maj Elena MacDermant (Commander) at elenamac@aol.com. Information on the AFA CyberPatriot Competition is available at www.uscyberpatriot.org or from the CyberPatriot staff at info@uscyberpatriot.org.

HIGH ALTITUDE BALLOON CHALLENGE: ONE SQUADRON'S STORY

By Lt Col Ellen Maternowski
Jamestown Composite Squadron Commander



In Oct 2021, the Jamestown Composite Squadron participated in the **StratoStar SHARE (Student High-Altitude Research Experience) Project**. The **SHARE project** consisted of placing experiments into two clear plastic capsules, about the size of a roll of nickels. The cadets were challenged to select items that could fit in the 50 ml capsule and that might be affected by being in the earth's stratosphere at about 100,000 feet. Starting the project was a struggle.

At the time the StratoStar project started, the squadron was holding Zoom meetings instead of in-person meetings. This put the hands-on portion of the project on hold till we were able to meet in-person. At the first meeting, the cadets passed the empty capsules around as they watched a video on YouTube from Jason Krueger, the President/Founder of StratoStar. After the video, the cadets conducted a group think-tank.

They threw out suggestions-some serious, some just silly, but none were wrong answers! They gradually made a short list. The cadets picked items that could potentially be affected by either sunlight, atmospheric pressure, temperature, or a combination thereof. The final selection consisted of tomato and cucumber seeds, M&M's, Skittles, a marshmallow, a strand of hair, popcorn kernels, and the branch of a Spider plant.

The items were gathered and brought in for our next meeting. During the next couple of meetings, the cadets paired up and worked on preparing one of selected items for the capsule. The items had to be visually inspected, put into a sealed bag, weighed, and documented. The teams had to work together to decide how large or how many of each item was sufficient to conduct the experiment so that all the items fit into the capsule and have a total weight of no more than 40 mg. And . . . there had to be two identical items: one for the flight capsule and one for the control capsule.



*Image Credit - Jamestown
Composite Squadron*

The control capsule stayed on the ground and was used later to compare it with the contents that were sent to the stratosphere. In addition to the StratoStar mission, two cadets accepted the CAP Challenge that consisted of creating a mission patch and a short pre-flight video. The hand-drawn patch (left) has Jupiter, Mars, and Saturn in the background behind a Dogwood type tree. The three-minute video included parts of the cadet's breakout sessions and preparing the flight samples.

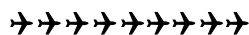
The link to the YouTube video is <https://youtu.be/5L4vUJ8SnSM>. During the last meeting, the final weighing was done, and a flight manifest was created. The capsules and manifest were mailed to their launch site. The capsule was launched by balloon and spent three and a half hours in flight reaching an altitude of 103,058 feet (19.5 miles). The capsules were mailed back. The cadets examined and compared the items. Some of the items had noticeable changes, such as a difference in color or taste. The cadets' favorite experiment was the "space popcorn". The popcorn kernels from the control capsule were popped in a hot-air popper. It was noted that the "control popcorn" tasted stale.

However, the "space popcorn" was whiter, larger, more kernels popped, and it didn't taste stale! The cadet who brought in the seeds took them home to plant them, so we will have to wait to see if the seeds germinate and grow some tomatoes and cucumbers. Unfortunately, the Spider plant branch didn't survive. It was in its bag too long and rotted.

The cadets had a breakout session about what they hypothesized would happen and what did happen to each of the items and what improvements can be made for future experiments. **Fifteen cadets and three seniors participated in this project.**



Editor's Note: 139 CAP squadrons, with over 1,500 cadets from all eight regions, submitted over 650 science projects for the CAP's first National AE High Altitude Balloon Challenge.



HIGH ALTITUDE BALLOON CHALLENGE SNAPSHOT

Capt Rob Przybysz

Dunkirk Composite Squadron Commander and AEO

Things In Space!!!

Testable Question:
What does traveling to 100,000' do to things?
Hypothesis: Most stuff will be largely unaffected by the trip.

Hypothesis supported by data: YES, but not everything.

How would you improve your experiment? We should have 3 samples of all items in question. 1 to travel to altitude, 1 to remain at ground, and 1 to remain at STP.



Mood rings may have been permanently damaged.



Everything got pretty hot and really cold!



No Sea Monkeys made it.

Grade High School Subject: Life Preparation
Mission Link: <https://tracking.stratostar.net/mission/0436>



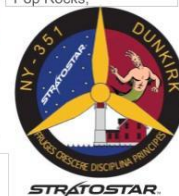
RADIATION BURN?



No actual monkeys were harmed during this production

Mission Name:
#StratoStar0436
Launch Date / Time:
08/21/2021
15:48 GMT
Maximum Altitude:
103,057 ft
Flight Duration
2:34
Team Number:SS07
By: Anna M.

Materials Used:Sea Monkeys, mood rings, Pop Rocks.



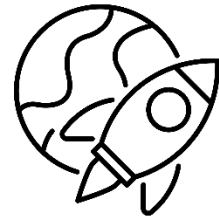


AE EDUCATOR 101

Lt Col Anita Martin
Director Aerospace Education



Background: When Lt Col Martin started the **AE Educator 101** series two years ago, it was meant as a full **24-month plan** to assist AEOs in developing an effective curriculum. In providing these activities, that were drawn from all six AE modules, model rocketry and AEX, AEOs would have a variety of options to fashion an engaging and impactful AE program. The last issue of **Wing Tips** (Nov/Dec 2021) saw the completion of the 24-month plan. With this issue, Lt Col Martin is starting a new cycle that will continue to provide AEOs with new ideas and resources to best develop their own plans.

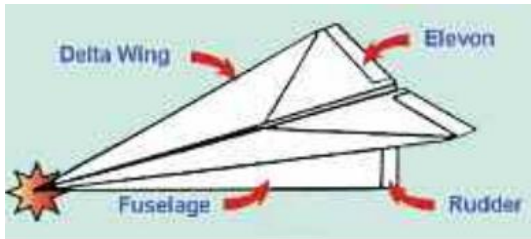


→→→ This **January/February Wing Tips** will follow National's Cadet Programs' Squadron Training Plan, found in eServices, Aerospace Downloads and Resources, for the 1st and 2nd months. The National Plan calls for one classroom lesson in leadership and aerospace per month, with each augmented by at least one hands-on activity per month. Following National's Training Plan will include the first two leadership books with activities, all six aerospace modules, physical fitness, Aerospace Excellence along with the Fit for Flying Drug Demand Reduction Books. Really good to get started learning to make and follow your own Squadron training Plan. We will follow the Aerospace suggestion.

The 1st month schedules **Aerospace Dimensions (AD) Module 1, Chapter 1, Flight**. This chapter really gives us a great introduction to flight. This is a great chapter for a cadet that hasn't yet had an opportunity to transfer their enthusiasm to new cadets! The three axis of flight is demonstrated in Activity Two – Folding, Flying and Controlling the Flight of a Paper Airplane.

Components of a Paper Airplane

The paper airplane has components just like a real one. The wings of our activity model have a "delta" shape, i.e., they come to a point at the nose like an arrowhead. At the back of the delta wing you were asked to make two cuts that become control surfaces known as "elevons." This is a combination of conventional elevators and ailerons. Since the elevator makes the airplane's nose go up and down, both paper airplane's elevons in the up position will make the nose pitch up when you throw it. If one elevon is down and the other is up, the actions of the ailerons are enacted, and the aircraft will spiral through the air when thrown. This motion is called roll.

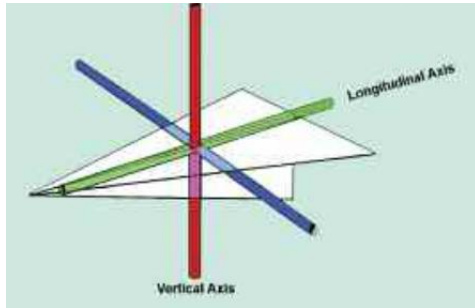


Don't throw a sharp-nosed paper airplane at anyone (might want to fold and tap the point inward for safety)



The paper airplane has a delta wing configuration. The famous Concorde had the same design

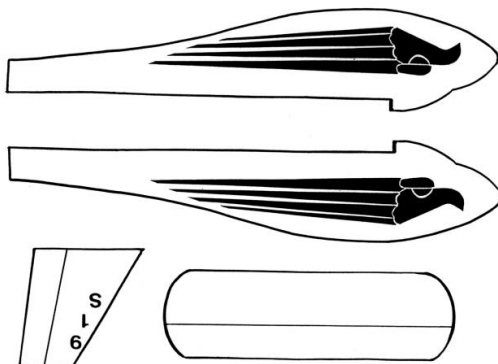
The Three Axes of a Paper Airplane



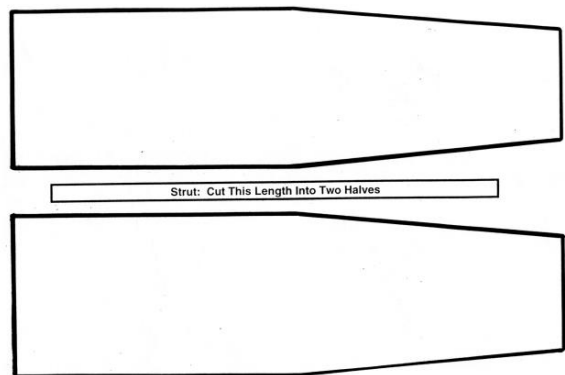
Now, let's mark the paper airplane to match a real one. A line drawn from nose to tail going through the center is called the longitudinal axis. A line drawn from side to side passing through the center is called the lateral axis. A line drawn down through the center from top to bottom is called the vertical axis. All these lines (axes) will pass through the exact center of the paper airplane; this point is called the center of gravity. To find the center of gravity,

get a piece of thread, some household tape, and see if you can make it hang perfectly level in all directions. You can see that this is the same as the **AEX I Activity Three: Back to Basics – Paper Airplanes**. This is also an easy lesson for a relatively new cadet to teach to even newer cadets. **There it is again – Your Two 'fer One!**

The 2nd month schedules **Aerospace Dimensions (AD) 1, Chapter 2, To Fly by the Lifting Power of Rising Air**. Gliders fly on rising air. This is another chapter that new cadets grasp quickly, so another good opportunity for learning to teach. The focus is learning to fly in a glider. The Zia Glider activity has a template to build the glider. You can substitute the template from the Build the **TG-4A Glider/Sailplane from AEX II Vol I, Activity 14**. You will need the famous meat tray with a hot glue gun to accomplish this.



TG-4A Fuselage Template (Note reduced size)



TG-4A Wing Template (Note reduced size)

Again, you can accomplish the AD lesson along with getting credit for the AEX activity. **Another two 'fer one!**

MIDDLE AND HIGH SCHOOL STEM CAMPS: SPREAD THE WORD TO YOUR CADETS

By Maj Burt Dicht



The Center for Leadership and Diversity in STEM (CLD STEM) organizes and runs the **West Point middle school and high school STEM camps**. Each summer, middle and high school students from across the United States are invited to come to West Point for a week-long hands-on STEM camp. The overarching goal is to increase interest in STEM through inquiry-based projects; develop and reinforce student science, math and problem-solving skills that are prerequisites to success in high school and college; and motivate under-resourced geographical locations to aspire to pursue STEM courses in high school and envision themselves in STEM careers.

Eligibility:

This unique program offers students currently in 6th and 7th grade (Middle School) and 8th and 9th grade (High School) the opportunity to participate in hands-on science, technology, engineering and mathematics activities taught by Academy faculty and cadet mentors. Students must be citizens of the United States, demonstrate strong academic performance, and demonstrate a strong interest in pursuing college.

Summer 2022 STEM Camp Dates:

The planned dates for this upcoming summer's camp (in-person on the campus of West Point) will be from June 14-17, 2022, for Middle School students and June 21-24, 2022, for High School students. Application forms are posted below, and the application window will close at midnight on March 18, 2022. We will require accepted students to show proof of full COVID-19 vaccination. All supporting faculty and cadets are fully vaccinated.

Middle School (rising 7th and 8th graders) [Application Form Click Here](#)

High School (rising 9th and 10th graders) [Application Form Click Here](#)

Tuition:

CLD STEM has received generous donations which allow them to cover tuition for all students selected to participate in the 2022 workshop. Housing, meals, and all activities will be provided by the scholarship; however, travel for students to and from West Point is not included and must be provided by the family.

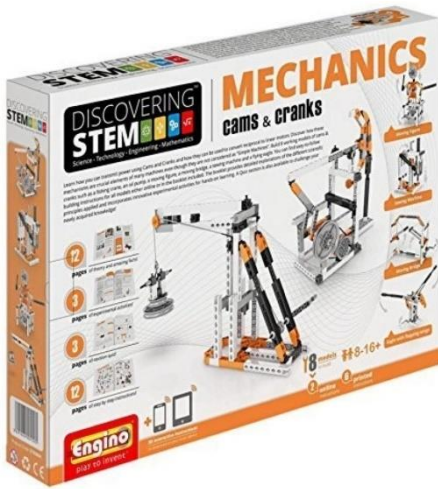
Meals And Housing:

For in-person camps, breakfast, lunch, snack, and dinner are provided at no cost for all participants. At in-person camps, all students will stay in the barracks at West Point under the supervision of cadet mentors and faculty members.

[**For more information on the West Point STEM Camps – Click Here**](#)

STEM KIT UPDATE

Reprinted from the January 2022 issue of Aerospace Education



The **CAP AE STEM Kit** program recently announced one new Kit, the [Mechanics STEM Kit](#).

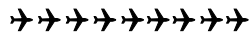
This kit teaches cadets and students how to transmit power using cams and cranks and how they can be used to convert reciprocal to linear motion. Cadets and students can build 8 working models such as a fishing crane, an oil pump, a moving figure, a moving bridge, a sewing machine and a flying eagle. Easy-to-follow building instructions for all models can be found either online or in the included booklet.

The booklet provides detailed explanations of the different

scientific principles applied and incorporates innovative experimental activities for hands-on learning. A quiz section is also available to challenge your newly acquired knowledge! Conduct thorough experiments and discover how the handle's position affects force and speed; how the crank's position affects force and speed; and how to switch between different types of motion by using cams.



[For more on these and all the kits available, please click this link.](#)

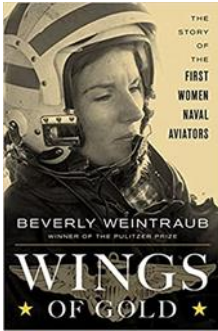


AE SAFETY CHECK

This safety nugget comes from **Lt Col Karen Cooper**, who works in safety and risk management on the AE National Headquarters Staff and is also the Northeast Region DCS/Aerospace Education. *Reprinted from the January 2022 issue of Aerospace Education.*

APPLY AE SAFETY LESSONS TO OTHER APPLICABLE AREAS

We just finished a major gift giving season. Think back – when you were opening the gifts using a knife, X-acto knife, box cutter, or any other sharp blade – **did you cut away from yourself?** You have heard this in multiple AE safety briefings, but it will not become automatic until you practice it in your everyday life. Many times, this is referred to as **“muscle memory”** – the ability to reproduce a particular movement without conscious thought, acquired as a result of frequent repetition of that movement. The safety information we provide as part of our AE Activities should be applied to all applicable aspects of your life so that when it is time to use that sharp blade, you will automatically cut away from yourself and you will be using it safely.

<p>NYW QUARTERLY AEO MEETING</p> <p>The last New York Wing Quarterly AEO Meeting was held on <u>Monday, 24 January 2022</u> from 1930 to 2030 hours.</p> <p>Fourteen AEOs participated. The topics discussed included:</p> <ul style="list-style-type: none"> - NYW 2022 AE Goals - NYW 2022 Cadet Goals - Quality Cadet Unit Award - AE 2022 Planning and PAO - NYW Conference (Oct) - NER AEO Course – Topic Ideas - Open Discussion <ul style="list-style-type: none"> ○ Successes ○ Challenges ○ How can NYW help <p>To view a recording go to: NYW AEO Quarterly Meeting Recording</p> <p>Access Passcode: ?SpTC=D2 (Note– The password access expires on 1 March 2022)</p> <p><i>The next AEO Meeting will be held on Monday, 25 April 2022 at 1930 hours. Please mark your calendar.</i></p>	<p>WINGS OF GOLD: THE STORY OF THE FIRST WOMEN NAVAL AVIATORS</p> <p>With Beverly Weintraub</p> <div>  </div> <p>On Tuesday, 25 January, the Phoenix Composite Squadron hosted a special presentation featuring Pulitzer Prize winning author Beverly Weintraub to discuss her new book, <i>Wings of Gold</i>.</p> <p>This is the story of six women, who in 1972 completed their flight training and earned their Wings of Gold, becoming the inaugural group of female naval aviators. Beverly's presentation covered the bios of each of these extraordinary aviators and their struggles and triumphs as progressed through their naval careers.</p> <p>48 senior members and cadets from around the wing participated in the session. To view a recording, go to: Wings of Gold Session</p> <p>Access Passcode: A5EkT#Dr (Note – The password access expires on 1 March 2022)</p>
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AE DOWNLOADS & RESOURCES

<https://www.caphq.gov/CAP.AEDownloads.Web/>

The Civil Air Patrol's Aerospace Education Program offers many resources that are free to its members, and it includes a series of



engaging and hands-on aviation and space-related activities for both cadets and senior members. One program is called AEX, and the acronym stands for "Aerospace Education EXcellence". AEOs can request full-color books that feature national standards-based aerospace activities - or - download them in AE Downloads and Resources. **Start planning now for your AEX for FY2022.**

BLACK HISTORY MONTH – FEBRUARY 2022

AEROSPACE CONNECTIONS

TUSKEGEE AIRMAN, AIR FORCE LEGEND PASSES AWAY AT 102

Reprinted from af/mil/News/ from 20 January 2022



Brig. Gen. Charles E. McGee, a Tuskegee Airman and Air Force legend, passed away at his residence in Bethesda, Md., Jan. 16, 2022. He was 102 years old. McGee was an airpower champion, noted for his combat successes and impact on the cultural shift within the military. “As a Tuskegee Airman and combat aviator with 409 missions across three decades, his years in uniform were nothing shy of heroic, and his example of integrity, service, and

excellence endures,” said Air Force Chief of Staff Gen. CQ Brown, Jr. “His legacy is foundational to our service, and a daily inspiration for me personally, and to so many other Airmen.”

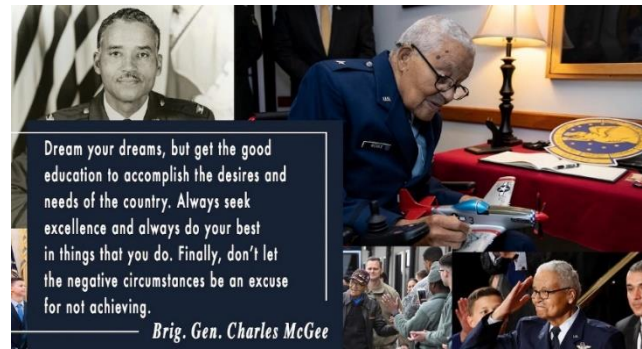
McGee’s aviation career began on Oct. 26, 1942, after he enlisted in the U.S. Army as a pilot. He would fly 108 combat missions throughout Europe during World War II. During this time, he and other Tuskegee Airmen distinguished themselves through their combat proficiency and competence.

With over 6,800 flying hours, McGee’s career spanned 30 years and three different wars: World War II, the Korean War and the Vietnam War. His decorations for outstanding service included the Distinguished Flying Cross, Legion of Merit, Bronze Star, Air Medal and the Presidential Unit Citation.

In 2007, the Tuskegee Airmen were presented the Congressional Gold Medal by former president George W. Bush, and in 2011, McGee was enshrined in the National Aviation Hall of Fame. Later in 2019, the Tuskegee Airmen were further recognized in naming the T-7A training aircraft, the “Red Hawk,” in honor of the airplane flown during World War II. For his efforts during and after his military service, McGee was promoted to the rank of brigadier general at the age of 100. This Tuskegee Airman dedicated his time to bettering the lives of all Airmen. Often sporting his red Tuskegee Airmen jacket, McGee advocated for aviation and equal treatment of Airmen, regardless of their backgrounds. After his retirement, McGee continued to mentor young people, current and former Airmen and all others interested in aviation and science, technology, engineering and mathematics.

“Just last month, to celebrate his 102nd birthday, he spent time with Airmen, continuing to influence and teach long after retirement,” Brown said. “One of my favorite lessons, in his own words, was ‘Don’t let circumstances be an excuse to not achieve...that’s not the American way’.”

Through McGee's actions, the Air Force has continued to break barriers and create a military branch that accelerates change at every possible instant. His legacy showcases the unending resolve and courage needed to secure and protect the nation at any time. *"Getting to know and spend time with him was an honor and a true joy, and my heart is with his family and all those affected by passing,"* Brown said.



Look for CAP's **Tuskegee Airmen Activity Book** – available later in Feb. A sample lesson plan on General Daniel "Chappie" James, the first African American to become a 4-star general can be accessed - [here](#).

ASTRONAUT RON MCNAIR SPACE SHUTTLE CHALLENGER

By Maj Burt Dicht



Image Credit - NASA

The space shuttle orbiter Challenger exploded 73 seconds after liftoff on 28 January 1986. The Challenger disaster claimed the lives of seven outstanding Americans. On-board that day was **Ron McNair**, selected as an astronaut as one of the "Thirty-Five New Guys" class in 1978.

McNair led an inspirational life. He grew up in a poor community in the South, while encountering discrimination early in his youth. But with a goal of becoming a scientist, he worked hard to achieve his dream. McNair received his Ph.D. from MIT in 1976 and before being selected as an astronaut he was a staff physicist at the Hughes Research Lab in Malibu, California.

McNair made his first space-flight on the STS-41-B mission in February 1984, becoming the 2nd black American to fly into space. In addition to being a scientist, McNair was a 5th degree black belt in karate and also an accomplished saxophonist. In a well reported story, when he was a child in the summer of 1959, McNair refused to leave the segregated Lake City Public Library in South Carolina without being allowed to check out his books. The police and his mother were called and he was allowed to borrow books from the library. Today that building is named the Ronald McNair Life History Center in his honor.

After his death, members of Congress provided funding for the Robert E. McNair Post-Baccalaureate Achievement Program to encourage students from low-income, first-generation college backgrounds, or students from groups underrepresented in fields of graduate study to enroll in graduate studies.



The Challenger Seven
Image Credit - NASA

AVIATION IN THE NEWS

19-YEAR-OLD LANDS IN BELGIUM, BECOMING YOUNGEST WOMAN TO FLY SOLO AROUND THE WORLD

Reprinted from npr.org – 20 Jan 2022



*Zara Rutherford, 19, carries the Belgian and British flags on the tarmac after landing her Shark ultralight plane.
Image Credit - Geert Vanden Wijngaert/AP*

Nineteen-year-old pilot Zara Rutherford touched down at an airfield in western Belgium on Thursday, becoming the youngest woman to fly solo around the world, as she closed the loop five months after taking off on her record-breaking journey.

Rutherford's circumnavigation aboard her Shark UL plane took 155 days – two months longer than planned, thanks to loads of bad weather and visa holdups. Along the way, she crossed enormous stretches of desolate ocean and had to spend weeks in a tiny Siberian village. She also had to alter course to avoid North Korean airspace and wildfires in California.

And, of course, she chronicled it all on social media. "It's just really crazy, I haven't quite processed it," she told reporters after landing in Kortrijk. Since her Aug. 18 departure, Rutherford covered 28,000 nautical miles, stopping in 41 countries and five continents. It's a journey that will land her in the Guinness World Records book, supplanting U.S. aviator Shaesta Waiz, who set the previous record in 2017 at age 30. Last year, Travis Ludlow of the United Kingdom set the record for youngest aviator to solo circumnavigate — at age 18.

For anyone contemplating a similar adventure, Rutherford, who was met after landing by her Belgian mother and British father — both pilots themselves — had some simple but direct advice: "Go for it."

"It takes a lot of time, patience, a lot of work, but it is incredible," she said. Her brother was also there to meet her. And her mother, Beatrice, said the family would celebrate together, at least at first. "I think Zara wants to celebrate by sleeping about two weeks," she added.

Rutherford said sometimes she feared for her life, and at other times just wanted to be home with family. Speaking with NPR from near Prague on Tuesday just ahead of her final few legs, Rutherford said she was "really excited" to finally complete the journey. "It's been a long five months — really difficult. I'm looking forward to seeing my family again," she said.

Rutherford employed Visual Flight Rules throughout the journey, meaning weather, and visibility, were limiting factors. Clouds and sudden thunderstorms near the equator were troublesome, she told NPR. "In Singapore, I got quite close to a lightning strike," she said, adding that she also contended with "severe turbulence" in Alaska and Bulgaria.

One of the things she wasn't expecting was California's wildfires. "I was flying along and then the smoke got really bad," she told NPR. "I was at 10,000 feet at this point, just trying to out climb it, but it wasn't working out."

"At one point, I just couldn't see anymore," she said. "It got really turbulent." But there are at least as many fond memories, she told NPR. Siberia, for example. "It's very remote and I'll probably never get a chance to see it again in my lifetime," she said.

"Alaska was amazing as well. Taiwan was gorgeous. Another highlight was Saudi Arabia, I mean, just stunning scenery. Really kind people as well," she said. Rutherford says that growing up, she has seen few women in aviation and computer engineering. Her next mission is to change that.

"Basically my dream is that in the future, if a girl wants to go into aviation or wants to go into engineering, it's not special," she said. "It's just like, 'oh, cool, like, just another person who's doing a cool thing with their life.' But it doesn't matter what gender they are."

A MESSAGE FROM THE EDITOR

Maj Burt Dicht

New York Wing, Internal AEO



The pursuit of environmental sustainability is something many of us do daily. Ensuring that we preserve our natural resources and at the same time protecting the environment can be as simple as carrying canvas bags to the supermarket instead of using plastic or not getting a straw when we are at the restaurant. As AEOs, we use many different materials to conduct our AE activities and the reality is that few of them are recyclable or biodegradable.

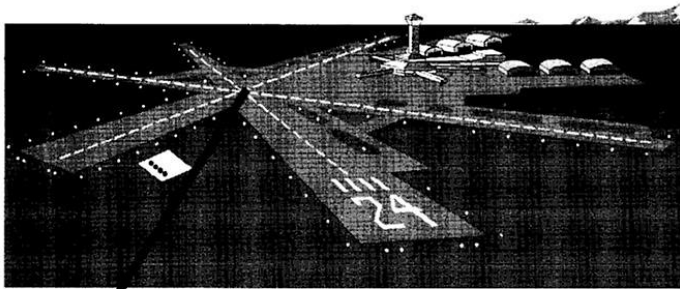
At the wing level it got us talking about what can we do to convert our AEX activities so that they are more environmentally sustainable. I recently picked up the most recent issue of AEX1, the activity book for K-5th graders. For the Goddard Rocket activity, the zip ties and straws have been replaced with duct tape. I have used cardboard instead of meat trays and others have tried cardstock. These are just a few examples of how we can covert our activities. **What have you been doing? Do you have any great ideas for adapting our activities to a sustainable mode?** We have decided to collect these ideas and report back to you. **If you have ideas to share, please use this link to access a short survey. Please complete the survey by 1 March 2022.**

[NYW AE Sustainability Survey](#)

LOGIC AND PUZZLE SECTION

In each *Wing Tips* issue, we are providing you with a Critical Thinking Puzzle. **This puzzle comes from The Mini Book of Logic and Puzzles.** The Civil Air Patrol believes that “Critical Thinking” is a valuable skillset for leaders and cadets, and it devotes a whole chapter to it in the LEARN TO LEAD: VOLUME TWO: TEAM LEADERSHIP, Ch 5: Brain Power for Leadership; Principles of Critical Thinking. (Solution is on Page 18)

AERODYNAMIC CALCULATIONS



Starting at the airport, travel through the grid, going alternately from a number to an operations sign. Move in any direction, being certain to follow the pattern. Find a pathway that will give you the correct answer as shown on the cloud. How many different pathways can you find?

4	-	0	+	5	÷	7	X
X	1	-	7	X	4	+	2
2	÷	3	-	1	-	5	+
+	1	X	4	+	8	-	6
8	+	2	÷	5	X	1	-
-	4	-	3	+	2	X	4
6	+	1	÷	9	÷	3	X
÷	1	X	5	+	2	-	5



Problem Solving

AERODYNAMIC CALCULATIONS PUZZLE SOLUTION



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PLANNING FOR 2022 – IMPORTANT DEADLINES

Item/Activity	Due Date
AEX Completion Report for QCUA point	30 August
STEM Completion Report for QCUA point	30 August
AEX Completion Report	30 Sept
STEM Completion - 30 Sept	30 Sept
AEX Application (FY 2023)	1 Oct
STEM Application (FY 2023)	1 Oct
Squadron AE Activity Report (FY 2022)	30 Oct
Nominated AE Awards - Squad to Group	15 Dec
Nominated AE Awards - Group to Wing	15 Jan 2023
AFA AE Cadet of the Year Award	15 Jan 2023

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Lt Col Anita Martin, NYW DAE; Lt Col Marilyn Rey, NYW DAE Emeritus;
Lt Col George Geller, Asst Internal AEO; Maj Burt Dicht, Internal AEO



For questions or comments about any of this issue's topics or contributions to a future issue, please email: amartin31392cap@juno.com or capaerospace@gmail.com

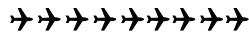


Image Credit - Civil Air Patrol

*Volunteers Serving America's Communities,
Saving Lives, and Shaping Futures*

