



NEW YORK WING, CIVIL AIR PATROL



AEROSPACE EDUCATION NEWSLETTER ONLINE

July-August 2020



CONGRATULATIONS TO OUR 4 NEW A. SCOTT CROSSFIELD AWARD RECEIPIENTS!

Master Rated Aerospace Education Officers



AND OUR 56 NEW BRIG GEN CHARLES 'CHUCK' YEAGER AWARDEES!



AE Educator 101

By Lt Col Anita Martin, Director Aerospace Education

REPRINT REMINDER: *Background:* When the CAP School Program began, it typically was not staffed with experienced CAP officers but with school educators who operated on a yearly curriculum. To assist the teachers, a school training plan was given to them when the school squadron was chartered. Today, that training plan is available to all units and is located on the CAP national website, in the Cadet Library, at the bottom right side of the screen and is called the "Squadron Training Plan" www.qocivilairpatrol.com/programs/cadets/library. This is a full 24-month plan to get through the first two leadership books (along with applicable leadership activities), all six AE Modules (also with applicable activities), model rocketry and AEX! We want to give you ways to extend your AE training to receive more credits for less work!

This is *July/August Edition Wing Tips* and when you look at National's *Squadron Training Plan* for 8th month, the lesson suggested is Aerospace Dimensions 4.2 Rocket Principles. You will see that the suggested Activity in Aerospace Dimensions is Activity 13 the "Goddard Rocket". That's ONE credit!

As you look at the AEX II Booklets, you will notice that the Goddard Rocket is Activity One in Volume I where it also gives a chart for testing and modifying the Goddard Rocket. That's TWO credits for one!

If you also notice, when the unit participates in the Model Rocketry Redstone Hands-on Option Two, it shows the "Goddard Rocket". That's THREE for one!

You could also use the "Goddard Rocket" for any Open House. It requires a piece of 14" pipe foam insulation and fins cut from foam meat tray with a sharp knife. The foam could be pre-cut and the fins traced on the meat tray ready to be cut out. It then becomes an External Aerospace Education activity to satisfy your SUI requirement. That's FOUR credits for one!

How about FIVE credits for one?! It is also credit for *recruiting*. Even better, SIX credits for one! It becomes a "Take Away" aerospace education home activity reminding them of Civil Air Patrol!!

If you are in a Senior Squadron, this is an adult activity that is typically incorporated in the Region Aerospace School because it is so much fun for adults, too!

Stay tuned for *Sept/Oct Edition Wing Tips* for more exciting AE Educator 101 tips to get more "Bang for your buck"!

LOGIC AND PUZZLE SECTION

From CAP Aerospace Mini – Book of Logic and Puzzles

By Lt Col Anita Martin, DAE

REPRINT REMINDER: FOR THOSE WHO MISSED THIS NOTE LAST MONTH.

Civil Air Patrol believes that Critical Thinking is so valuable as Leaders that it devotes a whole chapter to it in the LEARN TO LEAD: VOLUME TWO: TEAM LEADERSHIP

"Critical thinking is the habit of being guided by universal values of logic and a deep respect for the truth. As with other aspects of leadership, becoming a critical thinker is more a journey than a destination. Everyone is subject to lazy thinking or irrational thought from time to time. Therefore, developing the ability to think critically is a lifelong endeavor, a never-ending process."

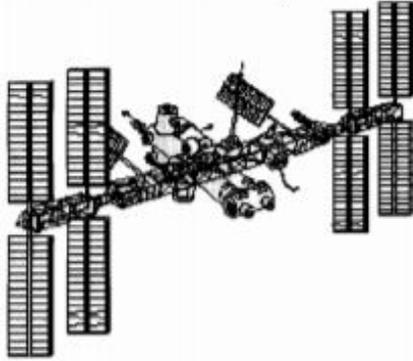
"Critical thinking is a desire to seek, patience to doubt, fondness to meditate, slowness to assert, readiness to consider, carefulness to dispose and set in order; and hatred of every kind of imposture." SIR FRANCIS BACON One of the first thinkers to use the scientific method."

Along with the Leadership training, CAP developed a small booklet: "Civil Air Patrol Aerospace Mini-book of Logic and Puzzles". Some of our cadets may find them too simple others more challenging. Even though my cadets said, "It was too easy, Ma'am." They would add, "Do you have another? They are fun!"

The book is out of print, but you can download from *AE Downloads and Resources* in eServices. Each *Wing Tips* issue we will be bringing you one of the Critical Thinking Puzzles. Enjoy. Have fun!. (Hint: We will give solution at the end of the issue. Don't look 'till you've tried!!)

SPACEWORKS

Three astronauts have been assigned to a tour of duty on the International Space Station. One is an astrobotanist, one is a computer expert, and the third is a maintenance systems specialist. Each is assigned a specific task required to keep the space station running smoothly. Use the clues to discover each astronaut's field of expertise and how long they expect to stay on the space station.



1. Neither Althea nor Elizabeth likes plants.
2. The astronaut who likes to work with computers also plans to stay on the space station.
3. Elizabeth plans to begin a new NASA training course at Johnson Space Center, Texas in three months.
4. The astronaut who likes plants will develop and carry out a new annual crop rotation plan.

ASTRONAUT	SPECIALTY	DURATION OF STAY
Althea		
Chris		
Elizabeth		

Choose each astronaut's specialty and duration of stay from the following two lists:

Specialty: astrobiologist
 astrobotanist
 computer expert
 maintenance systems specialist

Duration of Stay: one year or more
 staying permanently
 three months or less
 three years

Inference / Problem Solving

Maximizing Your AEX Activity: Lessons Learned from Capt Burt Dicht

AEO, Phoenix Composite Squadron, NY-301 & NYC Group



The Aerospace Education Excellence program, or AEX, is a valuable resource for introducing squadron members to the wonders of aerospace. The well-developed hands-on activities offer members a first-hand experience in basic aerospace principles as well as opportunities for design and construction. As Aerospace Education Officers, we are tasked with ensuring these activities are fun learning experiences.

In my seven years conducting AEX activities, I have organized both internal and external programs and I believe I have it down to a science and an art. I didn't just arrive here. I learned a lot from a great mentor, Lt Col Jacqui Sturgess, and other things I learned from on-the-job experience, meaning *I made mistakes!*

From my own experiences I want to share some lessons learned to help you run successful AEX activities. Whether you are conducting an activity for the first time or have done it many times, being prepared will ensure everyone participating will find the experience valuable.

Getting Started . . . At Home Preparation

- **Do it Yourself** - If you are conducting an activity for the first time, *do it yourself* before introducing it to the squadron. This will allow you to understand the steps involved, the level of difficulty, where you might run into problems and *how long it will take*. Your firsthand knowledge of the activity can also ensure you address all the unknowns that might derail the activity.

MATERIALS

1. Template sheet for fins (make repros for class or squadron on a copy machine)
2. One foam meat tray per student
3. One pipe insulation tube cut to a length of 14 inches. (Note foam pipe insulation tubes come in five-foot lengths. You can get 4 rockets from one of these tubes. For a class of 30, you'll need 8 tubes. The cost varies, but the average is around one dollar per tube.)
4. One hot glue gun
5. One snap knife to cut foam
6. One cable tie
7. One #64 rubber band
8. One soda straw

Goddard Rocket Materials

- **Consumable Materials Inventory** – It's not always possible based on the space you have at home, but preparation for AEX activities is easier if you keep certain materials on hand. There are several items that are used in multiple activities like: foam packaging trays*, tape, straws*, drinking cups, rubber bands, pipe insulation*, cable ties*, etc. Having these on hand make it easy to conduct activities on short notice. You don't have to go out shopping before every activity. Once a year I replenish the supply as needed.
- **Materials Checklist** – When packing the materials for the activity, **use a check list** to make sure you have everything. I had arrived at the squadron meeting to conduct the Goddard Rocket activity and I realized I didn't have my cable ties. (I had left them on the table at home.) Luckily, I was able to get them at a nearby store. Missing a key item will leave a lot of disappointed squadron members.
- **How Much Will You Need?** – Be sure you are coordinating with the squadron leadership to estimate how many members will be participating. It is ok to have some left-over material, but if you don't have *enough* for everyone, you will also have some disappointed members. **Handy Tip** - For the consumable materials I typically bring about 25% more than is needed, just in case. For example, if we are expecting ten members, I have materials for thirteen.



A sample of my Mobile AEX Kit

- **Create a Mobile AEX Kit** – I purchased a large wheeled bag to transport all my materials. Along with the consumable materials I have the items you typically might need and use repeatedly. This includes hot glue guns, scissors, sanding sponges, snap knives, markers, pencils, rulers, and straight edges, etc. This way I know they are always there, and I just need to add the consumable materials to the bag. Additional items to have in your kit include power strips, extension cords, trash bags and cleaning materials. **Handy Tip** – Put a strip of tape with a number on items that you want to track. Each of my snap knives is numbered. I have ten of them so I can easily check to make sure I get ten back.

- **Templates and Prepared Materials** – There are multiple activities that require parts to be cut out of the foam trays with snap knives (art or modeling knife). I used the paper templates in the activity and made cardboard cutout templates. This makes it much easier for the members to cut out the parts, just by overlaying the template. **Handy Tip** –To save time and for younger students that you might encounter with an external AEX, I pre-cut many of the parts at home. Its more prep on your time but it is much safer for the younger students/cadets who don't yet have the skills to use a snap knife safely or make more difficult parts.

Conducting the Activity

- **Arrive Early** – I always arrive before the start of the meeting to unpack my materials and sort them. This ensures you are using the meeting time for the activity.
- **Conduct a Safety Briefing** – **Always, *always* conduct a safety briefing before starting.** Ensure that members understand the proper and safe ways to use the equipment and materials (hot glue guns, snap knives, etc.) Enlist the help of other AEOs and senior members to monitor the activity to make sure it is conducted safely. **Handy Tip** – You should have a First Aid Kit in your mobile AEX kit.
- **Pre-Activity Briefing** – Explain the activity, the goals, and objectives. Make it a learning experience as much as possible. Provide background on the key aerospace principles and what they will learn. **Handy Tip** – I frequently hand out a copy of the activity (from the AEX handbook) so they have something to reference and take home with them.
- **Be Available** – As the AEO, you are the educator. Be available to assist squadron members that have questions or are running into difficulty. Also demonstrate some of the procedures when necessary. Your members all have different skill levels and you want to make sure it is an enjoyable experience for all.



Constructing the wind tunnel required a lot of prep time and 10 cadets and senior members working together.

- **Demonstrations** – Many activities provide an opportunity to test or demonstrate the result of the activity. Whether it is a Goddard Rocket, or an Alka-Seltzer rocket be sure to allow time for the squadron members to test their rocket or plane.
- **Cleaning Up** – Many activities result in a lot of scrap materials. Returning the worksite to its original state should be standard practice. Have trash bags and cleaning material to make the work easy. And have hand sanitizer on hand for the members. This was a standard practice before COVID-19.
- **Document the Activity** – Make sure you record the attendance and keep good records of the activity. To get credit for your AEX program, you will need to record attendance, the date of the event and the number of participants. **Handy Tip** – Be sure to take photos for the squadron’s record and history.



Following these “**Lessons Learned**” has helped me ensure that my squadron’s AEX activities have been run effectively. I hope you will find them useful when we are able to return to in-person activities. I am now working a similar set of lessons learned for *virtual* AEX activities. Please feel free to reach out to me for any assistance or if you have any questions.

** Note: Lately, we are trying to find environmentally friendly materials to replace polystyrene foam and plastic straws in our AE activities. We are constantly looking for alternatives that work as well or better than the originals.*

—oo—oo—O—oo—oo—

REMINDER:

*** AEOs and Commanders are reminded that the Annual AE Activity Report is due by 30 Sept and must be completed in eServices. The AEO submits the information, the Commander must approve by the due date.**

—oo—oo—O—oo—oo—

List of Aerospace Museum Virtual Tours

Museum of Flight
<https://www.museumofflight.org/Explore-The-Museum/Virtual-Museum-Online>

National Air and Space Museum
<https://airandspace.si.edu/anywhere> Select – “Virtual Tour” on right side

National Naval Aviation Museum
<https://www.navalaviationmuseum.org/education/virtual-tour/>

Frontiers of Flight Museum
<https://www.flightmuseum.com/virtual-tour/>

National Museum of the US Air Force
<https://www.nationalmuseum.af.mil/Visit/Virtual-Tour/>

Hiller Aviation Museum
<https://www.hiller.org/museum/virtual-tour/>

—oo—oo—O—oo—oo—



COVID-19. Criteria for the 2019/2020 award year have been adjusted.

From Lt Col Jacqui A. Sturgess, AEO NYW



GOOD NEWS! Award winners are determined by their performance from 31 August 2019 through 31 August 2020. The award criteria are entirely objective. *Unit that meets at least 5 of the 7 criteria listed below on 31 August 2020 earn the award. Notice that the AEO has great influence over the success or failure for this program!*

- **Cadet Achievement:** 45% of cadets on roster have attained the Wright Brothers Award (**cadets have to pass 2 online tests from their books Aerospace Dimensions 1-6 to get to the WB test, AEOs can help cadets with understanding concepts**)
- **Retention:** Unit retained 50% of first year cadets during previous year
- **Adult Leadership:** Unit has at least 3 Training Leaders of Cadets graduates on its roster (**have you, the AEO considered taking the TLC training? We encourage you!**)
- **Aerospace:** Unit earned the Aerospace Excellence Award (**AEX**) during previous year (**must be reported early, by 31 August to earn the point**) or unit sent in an AAR after ordering a STEM Kit (**need we say more?!**)
- **Enrollment:** Unit has at least 35 cadets listed on its roster
- **Outside Activities:** Unit participated in [CyberPatriot](#), [Team America Rocketry Challenge](#), [StellarXplorers](#), or hosted a [Red Ribbon Leadership Academy](#) (**3 out of 4 are AE activities!**)
- **Emergency Services:** 60% of cadets on roster have GES certification

—oo—oo—O—oo—oo—

HOW TO FINISH UP YOUR AEX PROGRAM BY 31 AUGUST!

From Lt Col Jacqui A. Sturgess & Capt Burt Dicht

Evaluate what you have accomplished and how many activities remain to reach the required 6 workshops and the '2-hr field trip'. Is the field trip the problem? If yes, here's a way to accomplish it *VIRTUALLY (and it is approved by NHQ/AE)*. Schedule your online AEX Workshop, at least one week in advance, using WebEx, Zoom or an alternative. Send an email to everyone with the pre-meeting 'homework'; a sample email, with details, is below (simple edit with your own text) – send at least one 'reminder' email:

AEX Activity - Visiting an Aerospace Museum

My most memorable visit to an aerospace museum was in 2011 at the Udvar-Hazy Center, Chantilly, VA, next to Dulles Airport. It was an amazing experience with so much to see – my favorite was the pre-1920s aircraft exhibits – and the SR-71 Blackbird, the Space Shuttle Discovery, and more great aerospace

artifacts. Museums provide an ability to celebrate great accomplishments, appreciate the contributions of the talented individuals who created these machines and to preserve their legacy.

This activity involves visiting an aerospace museum. *I know we can't do that now, but there are a couple of options for you to complete the activity.* **Here is the assignment:**

1. Read the attached AEX activity article [taken from AEX II, Activity 11]
 2. Did you visit an aerospace museum in the last year? If yes, see number 4 below. If no, skip to number 3.
 3. If you did not visit an aerospace museum, use the attached list of "virtual tours" and complete one virtual tour. Then see number 4 below. [see page 6]
 4. Answer these questions:
 - What museum did you visit?
 - Provide a short summary including, location, when it opened and the type of collection (aircraft only, aircraft and spacecraft, other, etc?)
 - Select a favorite artifact to highlight (aircraft, spacecraft or rocket) and provide its name and manufacturer. Include one fact about it. It can be anything that interests you or maybe is something not well known. Example - *The X-15 was a hypersonic rocket plane that actually crossed the boundary into space. Pilots who flew these flights received their astronaut wings.*
 - Include a photo of the artifact. It can be one you took or downloaded from the museum's webpage.
- **Send your write-up and photo to [\[your email address here\]](#) by **[deadline day, date, time]**.**
I will compile the information in a Google folder and share it during the meeting. During the session, we'll have each cadet share the story of their museum visit. [members can make one or two ppt slides to illustrate their response; these can be shown during the virtual workshop]

Completion of this activity earns you an AEX point.

Attachments:

- Activity article
- List of Virtual Tours
- Burt's List of Aerospace Museums (one of my hobbies is visiting aerospace museums whenever I travel. For fun, I put together a list. You might think it is long, but there are many still on my to-do list.) [If you want the list, let us know]

Here is a link to the virtual AEX resources for the museum visits.

- <https://1drv.ms/u/s!AnNp7tSb62AS3lxggg3K2RhDlpyx?e=i6gCGC>
- It is a Microsoft one note link.

—oo—oo—O—oo—oo—

Happened this month? Historical section

from Lt Col George Geller, AEO NYW

This month marks 51 years since the [Apollo 11 Moon](#) mission which landed humans on the moon for the first time. On July 16, 1969, Edwin "Buzz" Aldrin, Neil Armstrong and Michael Collins lifted off from NASA's Kennedy Space Center in Florida.





Four days later, Collins orbited the moon in the command module, while Armstrong and Aldrin became the first humans to set foot on the lunar surface after landing Apollo 11's lunar module, Eagle, on the Moon's Sea of Tranquility. An estimated [650 million](#) people watched Armstrong's televised image as he took "... one small step for a man, one giant leap for mankind.

Lift-off for Apollo 11 (Photo Credit: NASA)

"We are not passengers on this planet. We are all members of the flight crew, and we'd better take care of our one home, Mother Earth." – Neil Armstrong from the Apollo 11 mission

—oo—oo—O—oo—oo—



Weather Station

OUR WEATHER STATION STEM KIT

By Lt Col Robert R. Ormsbee &
Maj Michaela Ormsbee



I mounted the Weather Station on a 6-foot pole that can be moved in and out of the building easily for training. Maj Ormsbee and I first set it up at home, took some pictures and did a short video that I played during a Zoom meeting.

Recently I brought the weather station to the CAP building and set it up. Because the stem kit is only 3 pieces (stand, weather station and display) it was very easy to assemble. Items needed for assembly:

1. Cross tip screwdriver
2. 10 AA batteries
3. Compass

I had some issues installing the AcuRite weather software but after three attempts I got it installed on my computer and phone. The issue with the APP is that your computer must stay connected to the internet 24/7. My squadron does not have Internet access, we use a hot-spot that an officer brings to the meeting - therefore it will only be connected during normal meeting hours. It works just fine in the wi-fi mode.

Suggestions on how to incorporate the Weather Station stem kit:

1. Have a different team of cadets set it up every meeting
2. Use it at activities such as ES training, encampments, recruiting booths or AE demo
3. Mount it on a mobile pole so that it can be moved easily for training

Prior to the COVID-19 meeting stoppage we had members of the squadron (including a parent) attend a SKYWARN training event given by the National Weather Service out of Buffalo, NY. I would highly recommend that any squadron using a Weather Station stem kit schedule a SKYWARN presentation or have an USAF Weather Team provide a briefing on weather.

For more information on the Weather Station Stem Kit, go to:

<https://www.gocivilairpatrol.com/programs/aerospace-education/programs/stem-kits/available-stem-kits/weather-station-stem-kit>

—oo—oo—O—oo—oo—

NEW – LESSON AND ACTIVITY VIDEOS

Civil Air Patrol's Aerospace Education team wants to share video lessons on this page. The lessons will serve cadets and students at a range of ages and over a variety of aerospace/STEM subjects.

<https://www.gocivilairpatrol.com/programs/aerospace-education/curriculum/lessonandactivityvideos>

—oo—oo—O—oo—oo—

AEROSPACE AND STEM RESOURCES FOR REMOTE EDUCATION:

It's AMAZING! You just *cannot* go wrong when searching for something new, *different* and engaging for your next AE workshop or activity by checking out the WEALTH of resources gathered for you on:

<https://www.gocivilairpatrol.com/programs/aerospace-education/for-educators/aehome>

—oo—oo—O—oo—oo—

HELP WANTED!

Newsletter Editor Wanted! Topics, How-To, Best Practices, Photos! Please send your contributions to Lt Col Anita Martin: amartin31392cap@juno.com

—oo—oo—O—oo—oo—

Editorial Staff: (from left to right)

Lt Col Anita Martin, NYW DAE; Lt Col Marilyn Rey, NYW DAE Emeritus; Lt Col George Geller, AEO (I)
Lt Col Jacqui Sturgess, AEO (E); Capt Burt Dicht, NYCG AEO

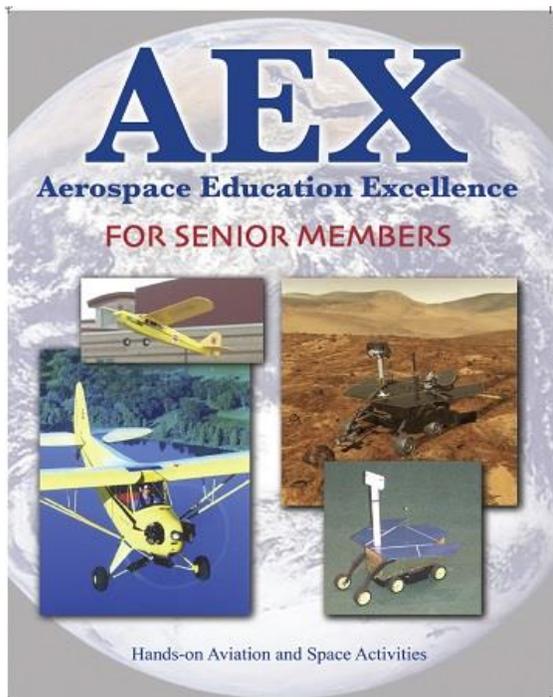
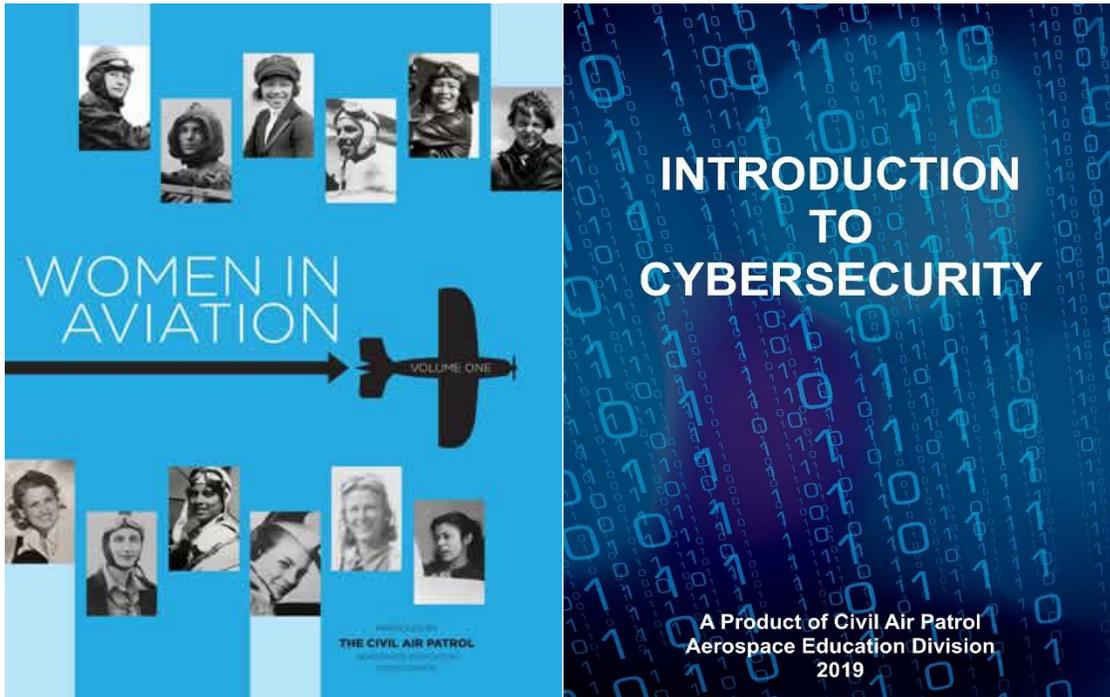


For questions or comments about any of this issue's topics, please email: amartin31392cap@juno.com

But wait! There's more

AE DOWNLOADS & RESOURCES

Have you visited the AE Downloads & Resources page recently? Looking for something new to engage your members? How about these! Log into eServices, go to AE Downloads & Resources, review the shelves for these downloadable pdfs full of challenging activities that are AEX qualified!



Spaceworks solution:

ASTRONAUT	SPECIALTY	DURATION OF STAY
Althea	computer expert	staying permanently
Chris	astrobotanist	one year or more
Elizabeth	maintenance systems specialist	three months or less