

NEW YORK WING – CIVIL AIR PATROL



AEROSPACE EDUCATION ONLINE MAGAZINE



Cessna O-1/L-19 Bird Dog "Black Aces"
By Ron Finger, CAP National Artist **



Cessna O-1/L-19 Bird Dog N6258
By Ron Finger, CAP National Artist **

SEE PAGE 2 FOR FULL ARTICLE
NER 2023 AEO COURSE

The recently completed NER 2023 AEO Course was well represented by the New York Wing. Forty-one students completed the class and fourteen were from the New York Wing. Congratulations to all of the members who completed the course

SEE PAGE 6 FOR FULL ARTICLE
GREATEST SHOW ON TURF

The National Warplane Museum held the NWM–Geneseo Airshow, also known as "The Greatest Show on Turf" on 3 & 4 June 2023, with 65 CAP personnel from the Finger Lakes Group supporting the event!

SEE PAGE 9 FOR FULL ARTICLE
MOON TREES AND SPACE SEEDS

They number a little more than 100 now, still towering and pointing to the heavens from where they were once carried. They are the legacy of astronaut Stuart Roosa, Lt Col, USAF, who carried tree seeds to the Moon on Apollo 14.



C/Capt (John) Jack Murphy
NY-288
21 June 2023
Photo Credit: CAP NYW

CONGRATULATIONS TO NEW YORK WING AVIATORS

Congratulations C/Capt Jack Murphy for passing your private pilot check ride and earning your private pilot certificate!

Congratulations to C/TSgt Kira Lynne Davenport, Schenectady Composite Squadron (NY-073), Civil Air Patrol on earning her private pilot's certificate!

Congratulations to SM Jonathan M. Arensmeyer, Albany Senior Squadron (NY-361), Civil Air Patrol on becoming a Commercial Rated Pilot!

NER 2023 AEO Course

The recently completed NER 2023 AEO Course was well represented by the New York Wing. Forty-one students completed the class and fourteen were from the New York Wing. Congratulations to all of the members who completed the course!



Course Summary

- *45 Students (66 Registered)
 - 7 of 9 NER Wings
 - Puerto Rico Wing
 - 42 Squadrons
 - 32 AEOs or Asst AEOs (includes commanders)
 - 2 Commanders
 - 1 AEM
 - 10 Senior Members/Officers (Non AEO positions)
- 15 Instructors

- Five Course Dates
- 13.5 Sessions Hours
- 13 Content Sessions
- One Home Build Exercise
- One Presentation Session

Name	Duty Assignment	Squadron
SM Alyssa M. Cramer	Assistant AEO	Niagara Falls Composite Squadron (NY-116)
2d Lt Daniel David Salai	AEO	Southern Tier Cadet Squadron (NY-292)
2d Lt Eddie Carbone	Assistant AEO	Col Johnnie Pantanelli Composite Squadron (NY-238)
Maj Elena MacDermant	Squadron Commander	Putnam County Composite Squadron (NY-033)
1st Lt Jacob Ente	AEO	Niagara Falls Composite Squadron (NY-116)
SM Javier Montoya	Assistant AEO	H.K. Vedder Composite Squadron (NY-392)
Maj Joseph R. Carbone	AEO	Col Johnnie Pantanelli Composite Squadron (NY-238)
Maj Kayla Sieburg	AEO	Vanguard Composite Squadron (NY-390)
2d Lt Michael S Knott	AEO	H.K. Vedder Composite Squadron (NY-392)
Capt Richard Jensen	AEO	James P. O'Connor Composite Squadron (NY-388)
SM Samson Libus	AEO	Suffolk Cadet Squadron 10 (NY-328)
1st Lt Tatsunari Tomiyama	AEO	Syracuse Cadet Squadron (NY-135)
2d Lt Valorie Palmer	Senior Member/Officer	Tak Composite Squadron (NY-173)
Lt Col Warren M Weiss	Senior Member/Officer	9th Suffolk Cadet Squadron (NY-311)

The course was held on consecutive Tuesdays from 23 May through 13 June and one Saturday, 10 June. The topics covered included: The AE Mission and Your Role as an AEO • Teaching Ordinary Subjects in Extraordinary Ways • The Yeager Award - Developing a Program for Your Squadron • CAP AE Resources - Products and Programs • Think Safety with AE Activities • Maximizing Your AE Impact • Developing Presentation Skills • Awards - Recognizing Contributions to CAP's AE Program • Conducting Virtual AE and Making it Interesting • and Dealing with Difficult Volunteers

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THE NEW YORK WING WELCOMES THE FOLLOWING MEMBERS WHO ARE NEW TO THE AEO SPECIALTY TRACK

Name	Squadron	Date
2d Lt Terence J Roberts	NER-NY-402	Jan 4, 2023
SM Mansoor Q Khan	NER-NY-328	Jan 10, 2023
Capt Edwin R Hoernes	NER-NY-033	Feb 9, 2023
SM Alyssa M Cramer	NER-NY-116	Feb 10, 2023
Capt Clarinda J Balliet	NER-NY-283	Feb 14, 2023
2d Lt Adam J Daouphars	NER-NY-420	Feb 16, 2023
SM Cynthia M Lawrence	NER-NY-156	Mar 6, 2023
SM Ryan C Payne	NER-NY-328	Mar 21, 2023
1st Lt Jacob A Ente	NER-NY-116	Apr 27, 2023
SM Harinder P Chhabra	NER-NY-332	May 4, 2023
SM Audria Cox	NER-NY-824	May 8, 2023
2d Lt Valorie A Palmer	NER-NY-173	Jun 12, 2023

Editor's Note:

New AE specialty track members, be sure to read about how you can earn the Technician Rating in just three-days. ALL current AE specialty track members who have six months are now ready to advance to the Technician Rating. See the article that follows by Lt Col Anita Martin.

THE NEW YORK WING CONGRATULATES THE FOLLOWING AEOs WHO WERE AWARDED THEIR TECHNICIAN RATINGS

Name	Squadron	Date
2d Lt Michael S Knott	NER-NY-392	Feb 23, 2023
2d Lt Gary J Fox	NER-NY-020	Mar 9, 2023
1 st Lt Amanda F Pieraccini	NER-NY-173	Mar 10, 2023
Capt Eric B Levin Capt	NER-NY-420	May 18, 2023
Lt Col John J Risio	NER-NY-024	Jun 6, 2023

THE NEW YORK WING CONGRATULATES THE FOLLOWING AEOs WHO WERE AWARDED THEIR SENIOR RATINGS

Name	Squadron	Date
1st Lt Maria C Massone	NER-NY-153	Feb 28, 2023
1st Lt Carl A Yannuzzi	NER-NY-288	May 17, 2023

ATTENTION ALL AEOS NOT RATED AEO TECHNICIAN SPECIALTY TRACK STUDY GUIDE “NYW TECH-IN-THREE-DAYS”

By Lt Col Anita Martin, NYW DAE
(Reprinted from the March/April 2023 Issue)



AEOs must be entered into the AE Specialty Track to be able to do their assigned duty. We currently have seventy-three AEOs that have no specialty track rating. If you fall into this category, we would like to help assist you in advancing your training to the Technician level. During a Subordinate Unit Inspection (SUI) when an officer remains in one Specialty Track rating after years of performing the duty assignment, National indicates that it decreases member satisfaction and may indicate poor performance due to lack of knowledge. **We would like to increase member satisfaction, increase depth of job knowledge and at the same time assist AEOs in achieving their Technician level rating.**

This “NYW Tech-in-Three-Days” is a new resource designed to assist you in achieving your first rating in just three days. *(Note: While this is a three-day-plan, you do not have to complete it in three consecutive days. Work to your own schedule.)*

Start with the AE Technician Level Checklist which is printed below. You can see there are three areas where the member is evaluated: **Knowledge, Performance and Service.**

Technician Level Checklist	
To complete the checklist, the member must:	
Knowledge, Performance, and Service Requirements	Mentor or PDO Initials and Date
Knowledge	
Read the publications listed on page 6 and demonstrate a general familiarity with them.	
Explain the appointment process for the AE Specialty Track.	
Review AE programs and products provided by National Headquarters with the trainer/mentor.	
Define the Aerospace Education Excellence (AEX) Award program and how to implement hands-on activities in squadrons and schools.	
Explain the difference between earned and nominated awards.	
Demonstrate knowledge about formulating budgets, obtaining grants and funding of AE activities.	
Describe the preparation of an AE POA for a squadron.	
Describe the preparation of an annual AE Activity Report for a squadron.	
Describe the SUI process for a squadron.	
Successfully complete the online technician rating test in eServices Learning Management System	
Performance	
Compile an AE notebook (on paper or digital file) including the 10 topics listed on page 8.	
Service	
Complete 6 months experience as an AEO/Assistant AEO according to the provisions on page 8. Dates of Service: from _____ to _____	

KNOWLEDGE REQUIREMENTS (Day 1): The AEO needs to be familiar with the publications listed on page 6 of the **AEO Specialty Track Study Guide**. It is important to be able to demonstrate a general familiarity with them. Note that **CAPR 20-1** is now the **CAPR 30-1** and **CAPR 50-17** is now the **CAPR 40-1**. Be sure you are familiar with the “Notes” section on the chart on page 6 for each publication and add *your* notes to remind yourself of each. **You will use these notes in both the Knowledge Requirements and Performance Requirements sections.**

Then you can include them in your AE notebook. **CAPP 50-1 is the most important as all the Knowledge Requirements can be found there.**

To complete the AE Specialty Track Technician Checklist, the member must:

1. Read the publications references on page 6 of Specialty Track Study Guide. They are all applicable to the AEO. The CAPR 20-1 is now CAPR 30-1 Organization of Civil Air Patrol and CAPR 50-17 is now CAPR 40-1 CAP Senior Member/Professional Development Program. Familiarize yourself with

each of the listed publications. Make notes from the introductory paragraph(s) of each. You can use these notes to study and to answer questions during your “specialty track” interview.

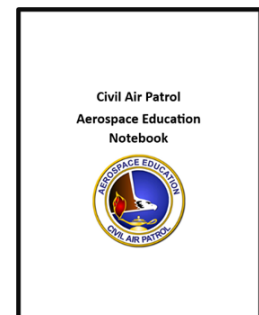
2. Explain the appointment process for the AE Specialty Track: *Found in CAPP 50-1, Ch 1.*
3. Review AE programs and products: *Found in CAPP 50-1, Ch 3.*
4. Define the AEX program: *Found in CAPP 50-1, Ch 4.*
5. Explain the difference between earned and nominated award: *Found in CAPP 50-1, Ch 6.*
6. Demonstrate knowledge about budgets, grants and funding: *Found in CAPP 50-1, Ch 7.*
7. Describe the preparation for the AE Plan of Action (POA): *Found in CAPP 50-1, Ch 8.* (Note: The NYW provides you with a simple POA checklist to achieve the Squadron Aerospace Education Achievement Award (SAEAA). This can be found on the Wing’s Aerospace Dept website)
8. Describe the preparation for the annual AE Activity Report: *Found in CAPP 50-1, Ch 9.*
9. Describe the SUI (Subordinate Unit Inspection) process: *Found in CAPP 50-1, Ch 10.* (Note: There must be a sit-down meeting between the Commander and the AEO to discuss the AE POA. The NYW POA form to earn the Squadron Aerospace Achievement Award satisfies this requirement.)
10. TAKE THE TEST! It is open book. Your review of the above publications and good notes should help with the test. *You may bank the Senior and Master tests for when you’re ready to move to the next level ... however, not encouraged as knowledge erodes over time and facts change!*

A good plan of action is to complete steps 1 to 9 on Day 1 and take the test on Day 2. You will be able to utilize your notes from completing the knowledge requirements for the test.

PERFORMANCE REQUIREMENT (Day2): This requirement involves the compiling of an “AE Notebook.” The notebook contains brief descriptions of each of these 10 topics listed on page 8 of AE Specialty Track Study Guide (and are listed below). **Note that these are the same topics from KNOWLEDGE REQUIREMENTS.** The notes you took from the Knowledge Requirements will satisfy this requirement!! Add a front and back cover and you have a notebook. **It’s a two-for-one!** One option is to create an *online* version using a Google Folder. Or save your notes and copies of pamphlets and regulations on your computer or a USB stick for easy reference. Or you can create an electronic version by scanning the documents. It is also a good idea to include a copy of the CAPP 50-1 and other publications on the list for quick easy reference in your electronic or actual AE Notebook. You will need to share your notebook with your AEO during your “specialty track” interview.

AE Notebook Topics:

- | | |
|----------------------------------|-------------------------------|
| 1. Appointment of AEOs | 6. AE Awards |
| 2. AEO Specialty Track | 7. Budget, Grants and Funding |
| 3. AE/STEM Programs and Products | 8. AE POA |
| 4. AEX | 9. AE Activity Report |
| 5. AEMs, ACE and Top Flight | 10. Inspection Preparation |



SERVICE REQUIREMENT: To achieve your Technician Rating you must complete a minimum of 6-months’ experience as an AEO or Assistant AEO after your duty assignment/appointment start date. You may have done this already. Either way, you are ready for **Day 3: The Interview** with your AE mentor who will review the Knowledge and Performance requirements with you and sign-off on your checklist. If there is no AEO with an advanced rating in your squadron, reach out to the Group AEO or feel free to contact me or any other Wing AEO. We will be glad to assist you. **Get started today and good luck!**

THE GREATEST SHOW ON TURF WAS AN OUTSTANDING SUCCESS!

The **National Warplane Museum** held the **NWM – Geneseo Airshow**, also known as “**The Greatest Show on Turf**” on **3 & 4 June 2023**. Thanks to the hard work of CAP members and the dedication of the event personnel, the public had a great aerospace experience. Airshow participants were able to enjoy the event with classic flyers like *Whiskey 7* and *Mad Max*. They also had other flyers new to the airshow this year such as the *F-16 Viper Demo Team* and the *Thunder Pig*. **Sixty-Five CAP personnel from the Finger Lakes Group supported the air show.**

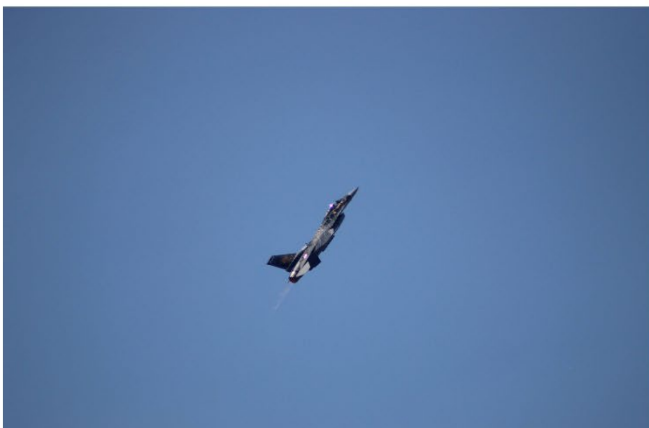


Photo Credits: C/1st Lt Benjamin G. McGarvey

A 40-YEAR PARTNERSHIP: CIVIL AIR PATROL'S SUPPORT IS VITAL TO THE GENESEO AIRSHOW

By C/1st Lt Benjamin G. McGarvey, CAP

The [National Warplane Museum](#) hosts the Geneseo airshow with Civil Air Patrol's support. That brings up the question: **What role does Civil Air Patrol play in the airshow?** Cadets and senior members from around Western New York volunteer to help out.

For the past several years, Maj Herrmann has been the Officer in Command. He works directly with the airshow Staff and Civil Air Patrol (CAP) units to coordinate schedules and plan the logistics support. CAP members work alongside National Warplane Museum volunteers to keep the general public safe while at the event. CAP personnel clear the taxiways and maintain safe distances between aircraft as per FAA rules. In addition, CAP secures the flight line by ensuring attendees do not damage the aircraft.

On the weekend of the show, CAP arrives on Friday to set up Mission Base. This is where their operation coordination is centered. Each day of the show starts with a safety briefing and ends with a review of the day's events in order to make improvements. On Sunday evening, CAP cleans up Mission Base and all go home with the experience of a lifetime.

The Airshow is located at the National War Plane Museum in Geneseo, NY. CAP members who stay overnight camp at Mission Base located on the grounds of the Airshow. This opportunity is only possible for those who plan and coordinate the event on both the airshow and CAP side; past present, and future. But a special thanks to all those who just attended.

Without them, this would not be possible. CAP's job at the airshow is a core support to the aircraft there. The Airshow Staff simply does not have the workforce to monitor and protect the public, which is where CAP plays their role. If CAP didn't help the airshow, it wouldn't be able to happen. It's the volunteers who ensure the airshow is a safe event for the public. For those who have not been a part of it and are interested, contact your local CAP squadron.



On duty: C/2d Lt Colton Gracioso, the cadet logistics officer, is on shift.

Ensuring that people look but don't touch the aircraft.

Photo Credit: C/1st Lt Benjamin G. McGarvey

HIGH ALTITUDE BALLOON CHALLENGE

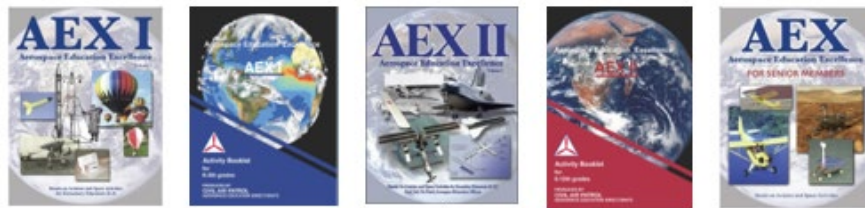


The 2023 challenge is now underway. All squadrons have received their capsule boxes and are preparing their experiments to be shipped (by 22 July) to the Anderson Preparatory Cadet Squadron in Anderson, Indiana for the 2023 HAB launch with the experiments as the payload (launching 5 August). The New York Wing has more units than ever participating this year. The following 15 squadrons from all 8 groups registered and are now working on their experiments. **We wish you all great success!**

Squadron #	Squadron Name	Project Lead	Group
NER-NY-020	Southtowns Cadet Squadron	Lt Gary Fox	WNYG
NER-NY-022	Buffalo Composite Squadron #1	Capt Thomas Leach	WNYG
NER-NY-030	Orange County Cadet Squadron	Lt Guy Borges	CMG
NER-NY-033	Putnam County Composite Squadron	Lt Craig Treco	SEG
NER-NY-111	Newark Composite Squadron	Lt Shauna O'Toole	FLG
NER-NY-135	Syracuse Cadet Squadron	Lt Tatsunari Tomiyama	CNYG
NER-NY-153	Leroy R Grumman Cadet Squadron	Lt Maria C Massone	LIG
NER-NY-162	Utica Cadet Squadron	SM James Knowles	CNYG
NER-NY-301	Phoenix Composite Squadron	Lt Col Jacquil Sturgess	NYCG
NER-NY-311	9TH Suffolk Cadet Squadron	Capt Tracy Wood	LIG
NER-NY-351	Dunkirk Composite Squadron	Capt Rob Przybysz	WNYG
NER-NY-373	Floyd Bennett Composite Squadron	Lt Robert Calungsod	NYCG
NER-NY-388	James P. O'Connor Composite Squadron	Capt Rosalynd Jensen	MEG
NER-NY-402	Jamestown Composite Squadron	SM Terence Roberts	WNYG
NER-NY-824	Buffalo Creek Academy Cadet Squadron	SM Audria Cox	WNYG

AE DOWNLOADS & RESOURCES

<https://www.capnhq.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**. **NEWSFLASH:** The Model Rocketry Program booklet is now available in Spanish!

MOON TREES AND SPACE SEEDS . . .

COMBINING AEROSPACE EDUCATION WITH BOTANY SCIENCE

By Lt Col George Fillgrove, NYW External AEO



Photo Credit: NASA

They number a little more than 100 now, still towering and pointing to the heavens from where they were once carried. They stand in silent witness of man's quest for exploration, the fragility of our environment, and an unlikely living memorial to the Apollo crew of the third landing on the Moon. They are the Moon Trees, made possible by USAF Lt Col Stuart Roosa and his fellow Apollo 14 crew members: Commander Alan B. Shepard, Jr. Rear Admiral USN, and Lunar Module Pilot Edgar Mitchell, Capt USN.

Roosa, originally from Colorado, was a 17-year-old high school graduate when he took a summer job in 1953 as a "smoke jumper" with the U.S. Forest Service. Smoke jumpers are highly specialized wildland fire fighters, who parachute behind forest fires like Airborne Rangers, packing in their own gear.

The future astronaut was one of a number of smoke jumpers who battled four major forest fires in the California and Oregon backcountry in 1953. Thirteen years later, he would be a USAF test pilot, picked in the fifth class of the NASA Astronaut Corps, and ultimately as the command module pilot for Apollo 14.

Ever intrigued by nature, Roosa conceived the idea of the Moon Trees with his friend, Edward P. Cliff, Chief of the Forest Service. The idea was part timber management research, part public relations as the nation was preparing for its Bicentennial, and part memorial for his fellow smoke jumpers.

After assignments to two other Apollo missions and finally serving on the Space Shuttle Program, Roosa would retire from both the Air Force and NASA in 1976, and enter private industry. He passed away in 1994.

"Each Apollo astronaut was allowed to take a small number of personal items to the Moon," said USAF Lt Col Jack Roosa, Stuart Roosa's son, during an interview with *NASA Science News*. "My father chose trees. It was his way of paying tribute to the U.S. Forest Service."



*Lt Col Stuart Roosa is standing fourth from left in the back row.
Photo Credit: U.S. Forest Service photo*

The idea was simple enough. Pick seeds from five species of trees: redwood, loblolly pine, sycamore, Douglas-fir, and sweetgum. The seeds came from two U.S. Forest Service genetics institutes, which were separated into groups of control seeds, left on earth, and seeds that would be flown into space.

The 500 seeds picked for the flight were wrapped in plastic and packed inside a metal cylinder, six inches long and three inches wide, that Roosa carried with him aboard the *Kitty Hawk* command module. Together, they circled the Moon 34 times as astronauts Shepard and Mitchell landed the *Antares* lunar module on the Fra Mauro highlands, and Shepard famously used a geology tool to launch golf balls amongst other tasks.

Upon return to earth, the seeds underwent the same decontamination process as the astronauts, which almost resulted in a disaster. The sealed bags, when removed from the canister in a vacuum chamber, burst due to the pressure difference, and seeds scattered everywhere. It was feared the seeds would no longer be viable.

Instead, the technicians gathered the seeds by hand. They were then sorted for germination. Space flight and the vacuum accident had not damaged the seeds. Most began to grow but many died within a year. The remaining seedlings were transferred to better equipped Department of Agriculture facilities where they were cared for and continued to grow.

No complete records were kept for the distribution of the seedlings. Today, it is known that 400 trees went to at least 31 states and several foreign countries, where many were eventually destroyed by natural disasters. Some of the survivors, especially here in the United States, are now marked -- and some are *not* marked to prevent them from being vandalized.



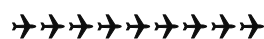
*Lt Col Roosa with seed canister
Photo Credit: NASA*

Five decades later NASA is once again looking at seeds and trees. This time, it is part of the NASA Artemis mission, which will return astronauts to the Moon.

On Nov. 16, 2022, an unmanned spacecraft was launched for a 25-day mission that sent it 40,000 miles beyond the dark side of the Moon and then return. It was the first integrated test of the Orion spacecraft, and it *<delete: again>* carried 1,200 seeds from five tree species -- loblolly pine, Douglas-fir, sycamore, giant sequoia and sweet gum. The seeds were returned to the Forest Service for germination. Scientists are exploring how prolonged space travel affected the seeds.



Eventually, NASA officials say there will be 400 new space trees for planting, and you can participate. The Forest Service has created a number of educational and STEM resources in support of the Artemis Project. Learners and educators can engage with the mission by browsing: <https://www.nasa.gov/stem-ed-resources/sign-up-to-receive-stem-resources-for-upcoming-artemis-i-test-launch.html>.



EDITOR'S NOTE

On your next visit to Florida, stop by the Kennedy Space Center Visitor Complex (KSCVC) and make a stop at the [Moon Tree Garden](#) (located at the Apollo/Saturn V center) to see second generation Moon Trees. The **12** trees are direct descendants of seeds that were taken to the Moon, and were supplied by Rosemary Roosa, Apollo 14 astronaut Stuart Roosa's daughter and president and chief executive officer of the Moon Tree Foundation. **The 12 trees represent the 12 crewed Apollo missions.**

RESOURCES FOR AEROSPACE EDUCATION OFFICERS

AE EDUCATOR 101

By Lt Col Anita Martin, NYW DAE



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 Plans.](#)"

This is a full 24-month plan to get through the first two leadership books (along with applicable leadership activities), all 6* AE Modules (also with applicable activities), model rocketry and AEX! It also adds the CAP Drug Demand Reduction, "Let's go Flying." We want to give you ways to extend your AE training to receive more credits for less work! Two Bangs for your buck!

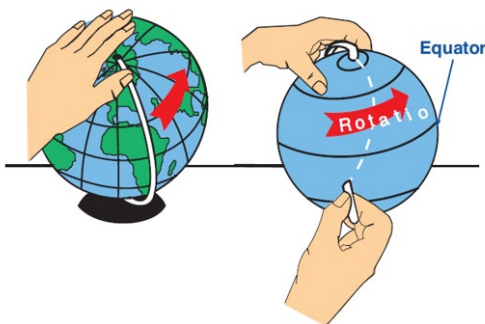


→→→ ATTENTION →→→

This May/June Wing Tips, for months 17 and 18, examines the National Cadet Program Cadet Library (Squadron Training Plan). May 2023 is the 17th month of the Plan, and our focus is **Aerospace Dimensions 3 - Air Environment, Chapter 2 - Air Circulation.** This chapter discusses how the sun heats the Earth and is the catalyst for our various weather conditions.

The differences in the surfaces of the Earth and how fast they are heated and cooled create temperature and pressure differences. And the Earth's rotation causes the air to move over the surface of the Earth. These conditions help create and move weather systems. This month's AE Puzzle (page 19) is based on all the important terms of this chapter to help cadets pass the AE test for Aerospace Dimensions 3.

Choosing **ACTIVITY THREE: CORIOLIS FORCE**, [which is the same as **ACTIVITY THIRTY-THREE** from AEROSPACE 2000] qualifies this as an AEX activity. This activity is designed to give a visual demonstration of the path of the Coriolis Effect (Force) in the Northern Hemisphere. There are your "Two bangs for your buck."



This activity demonstrates Coriolis Effect (Force), which occurs from the wind effects associated with the rotation of the Earth. Coriolis Effect (Force) deflects a freely moving object to the *right* in the Northern Hemisphere and to the *left* in the southern Hemisphere. It is important to realize that pilots plan for this when they are flying to avoid being deflected off their planned flight course.

*Editor's Note: Aerospace Dimensions Module 7(AD7), Cyber Security, had not been published at the time.

June, the 18th Month of the plan, again references the booklet, **Fit for Flying -- Part Three Aerophysiology**.

Let's Go Flying and the Let's Go Flying Instructor's and Conference Guide can be found at:

<https://www.gocivilairpatrol.com/programs/cadets/activities/cadet-flying/lets-go-flying>

AGF is CAP's Drug Demand Reduction Program to raise awareness of how the aviation industry has a zero tolerance for alcohol and drug abuse. This chapter is designed to give young members a look at just a small number of the available opportunities for aviation enthusiasts. *This will give you a "Three-for-one" bang for your buck: an aviation lesson with a Drug Demand Lesson and credit for AEX!*

The Instructor's Guide Part Three Drug Issue states:

If exploring things in life to get one "high," it is important to focus on "getting high" on aviation opportunities instead of drugs and alcohol. Remind cadets to "stay on course" while off attending special schools and programs and abstain from alcohol and substance abuse.

This unit is a comprehensive overview of human physiology as it relates to flight. The unit references the Barany Chair. We have included this with other AE lessons. It is **ACTIVITY FOUR** from **AEX FOR SENIOR MEMBERS, THE NASA BARANY CHAIR***. This AEX for SM's book is found under Archived Publications. It shows how to build this chair. NASA uses it as well as the USAF and the FAA. An alternative is an adjustable office chair. By carefully pumping up the elevation of the office chair, you can rotate it almost without friction. The **"Fit for Flying Instructor's and Conference Guide"** gives detailed instructions for building the chair. The Barany Chair may also be used at an *Open House*.



The person in the chair is given a comfortable blindfold and a pilot's "stick" made from a broom handle. The presenter starts out by slowly rotating the chair in one direction and the student is asked to "fly" the stick in the direction of the rotation. The student moves the stick right or left and after a gentle rotation of about 1-2 minutes, the chair is allowed to slow to a stop. Almost without exception the student or pilot will suddenly move the stick to the full opposite direction. When the presenter carefully removes the blindfold, the student will be astonished to see that he/she is sitting still. The other members of the group find this to be quite humorous and everyone will want to try it. Pilots love to try out this chair. So, it is equally great for both cadets and senior members. They all learn the meaning of physiological disorientation experienced by pilots on long trips using instrument flying rules. **Again, this is a "three-for-one" bang for your buck. An AE lesson, an anti-drug message and an AEX activity!!**

***Important Safety Information:** *The senior member is STRONGLY urged to read about the effects of disorientation and why induced vertigo can make the person in the Barany Chair sick. This is an activity that has been used for years by the FAA and other aeromedical agencies to show pilots how easily disorientation can happen. SENIOR MEMBERS MUST BE RESPONSIBLE AND NOT ALLOW CADETS, OR EVEN OTHER SENIORS, TO USE THIS AS A TOY. EXPERIMENTS SHOULD BE CONDUCTED IN A CAREFULLY PLANNED ENVIRONMENT.*

A WORD ABOUT EXTERNAL AEROSPACE EDUCATION

By Lt Col George Fillgrove, NYW External AEO

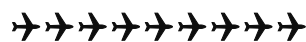
Paper airplanes, model rockets, flight simulators, robotics, coding theme packages and aviation theory may not seem as exciting as Civil Air Patrol's other assigned missions, but nothing could be more important as our organization's external aerospace education mission.

More than 300,000 public and private students and countless others are reached annually through exposure to the various STEM kits or other materials offered to the many squadrons and Aerospace Education members (AEM). It is one of our organization's most important community relations tools.

You can help, too. For example: Volunteer as a merit badge counselor at the local scout pack. If you encounter individuals interested in CAP but not interested in the military aspects of our organization, offer them an opportunity to join as AEMs. The membership fee is one-time only as long as the AEM continues to actively participate.

In addition to the materials provided by NHQ CAP, AEMs have the unique opportunity to participate in Teacher Orientation Program (TOP) Flights from local airports. Those same flights are also available to CAP senior members who are educators. Here in the NY Wing, that opportunity is extended to the Red Bird full motion simulators that are stationed throughout the state.

If you are a teacher, check out: <https://bit.ly/3vnxKNX> for more information, the application to become an AEM and materials available to you. If you are an AEM or a CAP Educator and you would like to schedule a TOP Flight, please contact Lt Col Anita Martin, NY Wing Director of Aerospace Education at: amartin31392cap@juno.com.



IMPORTANT AEROSPACE EDUCATION ANNOUNCEMENTS THE QUALITY CADET UNIT AWARD – COMPLETE YOUR AEX AND STEM KIT REPORTS – DUE BY 31 AUG

The Quality Cadet Unit Award (QCUA) recognizes cadet units that display strong program fundamentals. Points are awarded based on an objective list of 10 criteria completed from 01 Sept 2022 to 31 Aug 2023. Aerospace is one area that can earn points for your unit. If your unit submits an Aerospace Excellence Award (AEX) Completion Report or sent in an AAR after ordering a STEM Kit during this award cycle, you earn points. But you must complete these reports no later than 31 August to count against this year's award. **Submit your reports as soon as possible to make sure your squadron gets credit.**

THE SQUADRON AEROSPACE EDUCATION ACHIEVEMENT AWARD (SAEAA)

The 2023 Aerospace Education Achievement Award recognizes squadrons who have excelled in AE for the fiscal year ending 30 Sept. It is based on information you enter in your 2023 AE Activity Report. There is still time to complete your activities and earn this prestigious award. With the end of FY 2023 fast approaching, we encourage you to act now. **Criteria for this award may be found in [CAPR 50-1, Attachment 5](#).**

AE SAFETY CHECK



These safety nuggets come 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 for Aerospace Education. Reprinted here from the April 2023 and May 2023 issues of NHQ/AE's Aerospace Education newsletter.

THE IMPORTANCE OF A FIRST-AID KIT (April 2023)

Quick – do you know where the first aid kit is? What do you do if you get a minor cut, or something similar, during an AE class? After checking the person who was injured to make sure it is not something more serious, notify the member in charge of the AE lesson and begin first aid. Have your Wingman or class partner secure your workstation (unplug the hot glue gun, secure the sharp implements like X-Acto knives, etc.). And most of all – follow the directions you are given so that a minor injury does not become a major issue. **So here is your homework – find that first-aid kit at your squadron!**



Photo Credit: RedCross.org

DON'T FORGET THE SUNSCREEN (May 2023)



Photo Credit: Creazilla.com

With the warmer weather, many AE activities will be moving outdoors, and with that comes – Sunscreen! We all know that you should wear it and apply it before going out into the sun, but unfortunately, many people forget that you have to *reapply* it as the day goes on. Are you doing something where you work up a sweat? There is *no such thing* as waterproof sunscreen; so you may need to *reapply* more often. If needed, there is water-resistant sunscreen. And watch your Wingman – you may need to remind them to reapply the sunscreen, too. Are you leading the activity? Keep an eye on your students.

THINK SAFETY WITH AE ACTIVITIES

When working with students or cadets, please be sure to conduct a safety briefing prior to the activity. The information should be specific to the materials and conditions for each activity. Such things as snap-blade knives, adhesives, hot glue, spray paint, or any material that could cause injury should be discussed and caution should be used. Carelessness and/or playing should be discouraged. Please have proper emergency plan and first aid measures available and stress the importance of “safety first.” If necessary, post a set of safety rules in the area where the activity will be conducted.

For more information see [“Think Safety with AE Activities”](#)

Remember: SAFETY, SAFETY, SAFETY!!!!

STEM KIT UPDATE

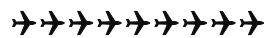
(Reprinted from the May 2023 issue of Aerospace Education)



Photo Credit: CAP

FEATURED KIT -- ASTRONOMY: For beginning astronomers to experienced stargazers, these lightweight, portable Celestron FirstScope telescopes in the Astronomy STEM Kit will work well with cadets and/or students. Added to the durable telescopes will be astronomy lessons and accessories to adjust magnitude and vision. There is an Astronomy Activity Booklet that includes career option information available in the AE Downloads and Resources section of CAP's member portal, eServices. The Astronomy STEM Kit is recommended for ages 6 and older.

Space Connection: This kit will bring the opportunity to begin an interest in space and observational astronomy that can be carried over into family and community stargazing evenings with the assistance of area American Astronomical Society (AAS) clubs. The AAS has over 7,000 members nationwide composed of physicists, mathematicians, geologists, engineers and others whose research interests lie within the broad spectrum of career areas that make up contemporary astronomy. The AAS can provide experienced and higher-level astronomy programs to enhance this beginning astronomy kit. Both AAS experts and CAP member STEM experts can assist in astronomy-related career mentoring.



IMPACT OF CAP'S STEM KIT PROGRAM

Impact of CAP's STEM Kit Program

The STEM Kit program continues to set new records!

Totals so far for fiscal year 2023 (for STEM kit applications received through April 2023)

Filled over 2,600 applications

Distributed over 6,100 STEM Kits

Reached over 270,000 participants

Totals since 2013 (for STEM Kit applications received through April 2023)

Filled over 25,000 applications

Distributed over 51,000 STEM Kits

Reached over 2 million participants

To order a STEM Kit - Use your CAPID# and password to log into eServices and fill out the application. If you need assistance, please don't hesitate to email stem@capnhq.gov

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

80% of participants are more interested in STEM after being involved in the STEM Kit program!

CURRICULUM SPOTLIGHT -- SODA STRAW ROCKETS

(Reprinted from CAP Oct 2022 AE Newsletter)

In this lesson, students will make a soda straw rocket. They will learn some rocket science principles that they will put into action as they launch their straw rockets by blowing into a straw. They will get to practice hitting a target and then record data and create a graph. Straw Rockets is Academic Lesson #6 in the *Kindergarten Aerospace Connections in Education (ACE) Teacher's Guide*. Or find the Straw Rockets lesson plan [here](#).

Editor's Note: You have already heard of the havoc that straws can wreak upon marine animals and ecosystems. Not only do plastic products like straws get stuck in animals' respiratory systems, but also they never biodegrade, instead breaking down into microplastics, small plastic pieces measuring less than five millimeters. These tiny pieces are then fatally ingested by birds and sea turtles, and enter our water supply. **We recommend practicing this project with the more environmentally friendly and readily available paper straws.**



Photo Credit: CAP

WING RATIOS

(Reprinted from CAP April 2023 AE Newsletter)

In this lesson, part of CAP's ACE program, students will review the forces of flight and Bernoulli's principle. They will calculate areas and ratios and determine which wings with given dimensions produce less drag. The lesson is Academic Lesson #3 in *Aerospace Connections in Education Grade 6 Instructor Guide* or [find it here](#).



Photo Credit: Staff Sgt Dakota Carter, USAF

A MESSAGE FROM THE EDITOR CELEBRATING 40 YEARS OF WOMEN IN SPACE

By Maj Burt Dicht, NYW Internal AEO

(Reprinted from the National Space Society Blog)



Photo Credit: NASA

Astronaut Dr Sally K. Ride became the first American woman in space when she flew aboard the Challenger on 18 June 1983. During her six-day STS-7 mission, Dr Ride worked to deploy two communications satellites and made a number of scientific observations and tests along with her four crew members. Ride’s pioneering flight ushered in a new era for America’s space program which saw the emergence of women as astronauts *and* in all areas of the US aerospace industry. [Ed Note: Diversity fact: She was the first astronaut known to be LBGT.]

Forty-years later, the Kennedy Space Center Visitor Complex (KSCVVC) celebrated Ride’s trailblazing mission by holding several **Women in Space** panels on 15 and 16 June 2023. The panels included former astronauts as well as engineering leaders from NASA, the U.S. Space Force and industry. I had the pleasure of attending the panel on Thursday, 15 June.

Thursday’s panel featured former NASA astronauts **Dr Anna Fisher** and **Dr Kathryn Thornton**; **Caley Burke**, from NASA’s Launch Services Program; **Col Erin R. Gulden**, Senior Materiel Leader with the U.S. Space Force, **Kelly DeFazio**, KSC site director for the Lockheed Martin Spacecraft Orion; and **Kimberlyn B. Carter**, associate program manager, Exploration Ground Systems, NASA KSC. The session was moderated by **Lisa Malone**, former director of KSC public affairs.



From left, Lisa Malone, Dr. Anna Fisher and Kathryn Thornton
Photo Credit: Burt Dicht

Malone asked the panelists a series of questions relating to their careers and accomplishments. The questions were: 1) What were the major influences on your career path? 2) What challenges/obstacles did you have to overcome? and 3) What career highlight would you like to share? They closed with a final question on the advice they would offer the next generation.



From left, Caley Burke, Col Erin Gulden, Kelly DeFazio and Kimberlyn Carter
Photo Credit: Burt Dicht

Dr Fisher mentioned Alan Shepard’s flight as a major influence and a medical colleague who informed her that NASA was seeking astronauts to crew the space shuttles. (Dr Fisher was selected as an astronaut in 1978, the first class of space shuttle astronauts that included six women.) Dr Thornton credited a teacher with putting her on a STEM career path. The other panelists also cited an influential teacher or counselor that encouraged them or provided guidance

They all spoke of challenges that might have derailed their career paths, but their focus and commitment to their goals helped them succeed. In addition, a major challenge was the work-life balance of career and family. They all credited spouses, their families and great bosses who helped them overcome those challenges. With such distinguished and

accomplished careers, each of the panelists had a hard time selecting just one highlight. Kimberlyn Carter summed things up with a moving tribute to the NASA/Industry team that successfully launched Artemis I in November 2022. Being involved in that historic launch as NASA prepares to return to the Moon is something she will never forget.



*From left, Caley Burke, Kathy Thornton, Burt Dicht, Anna Fisher and Kelly DeFazio
Photo Credit: Burt Dicht*

The advice they offered the next generation provided a great career roadmap for anyone interested in a space career, or whatever career they might choose. Fisher urged those pursuing STEM fields to find something that not only interests them, but that they find fun. Thornton advocated persistence in pursuing your goals and not to be locked into anything. Burke urged everyone to create a career development plan and that connected well with Col Gulden’s advice to think long term . . . Where do you want to end up and then work backwards. DeFazio advised to keep moving forward and challenging yourself and finally, Carter closed with making sure you all do your best work on whatever project you are involved with, both big and small.

The panel was fun, informative, and insightful. These amazing women and aerospace professionals paid tribute to **Dr Sally Ride’s legacy** and **provided an inspirational message to the next generation.** **We look forward to that next: “One Small Step ...” being made by a woman.**



AIRCRAFT IDENTIFICATION QUIZ



Photo Credit: Boeing

Can you identify this aircraft?

The first two correct answers received via email to capaerospace@gmail.com will receive a special space patch.

Hint: Designed by Boeing, it is replacing the aircraft featured in the last issue and it just completed a successful test flight with a USAF pilot.

Congratulations to **2d Lt Gary Fox** who identified the Northrop T-38 in the last issue. He will be receiving a special space patch.

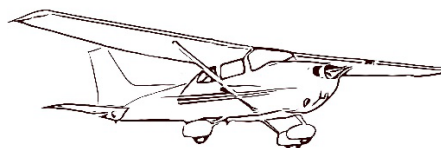
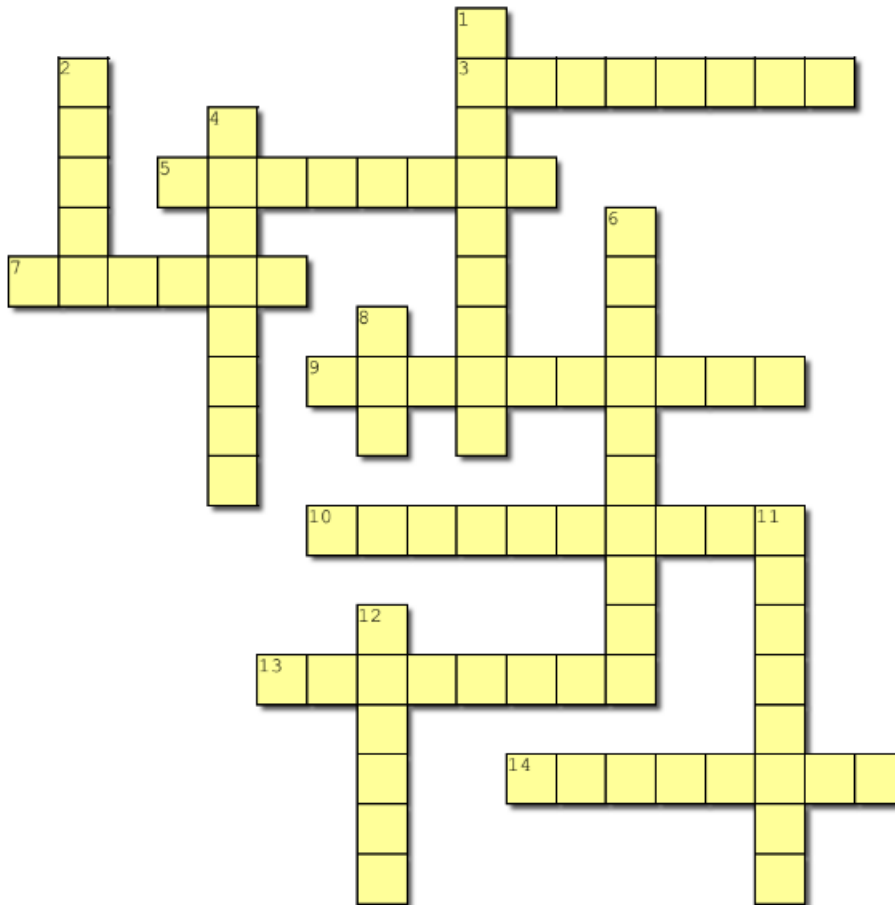


Photo Credit: Etsy.com

AE PUZZLE

AD 3 AIR ENVIRONMENT CHAP 2 AIR CIRCULATION IMPORTANT TERMS



Created using the Crossword Maker on TheTeachersCorner.net

Across

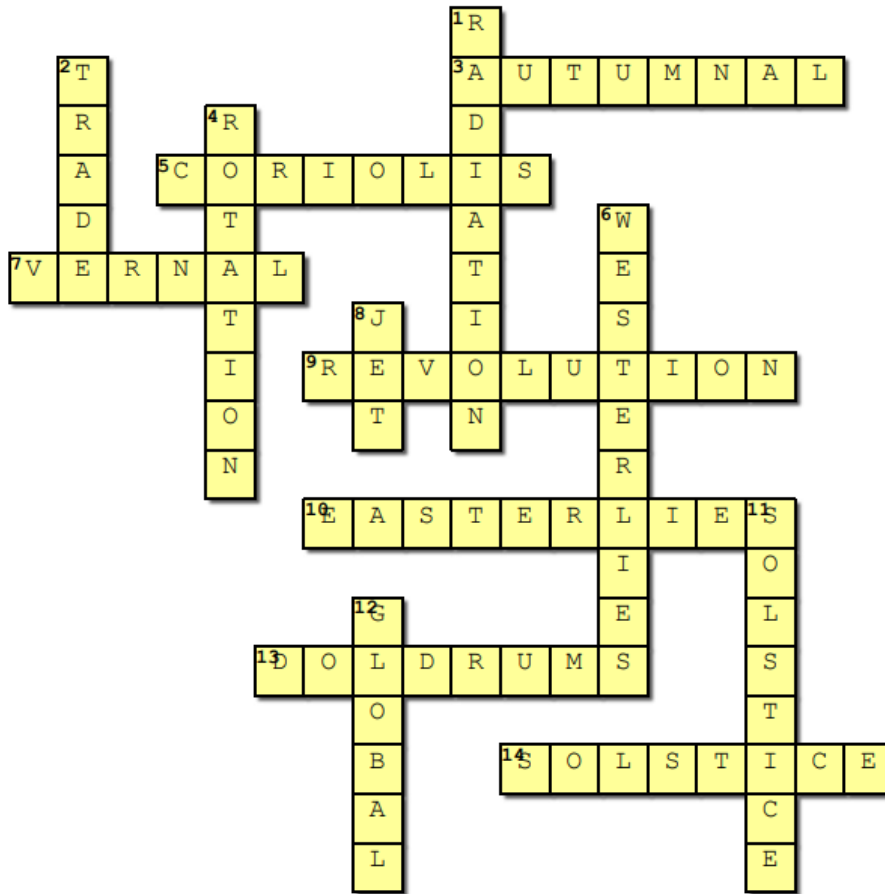
3. the fall equinox time when the sun's direct rays strike the equator resulting in day and night of equal length, usually on September 22nd or 23rd.
5. is the apparent deflection effect (Force) of a freely-moving object to the right in the Northern Hemisphere.
7. The spring time equinox when the sun's direct rays strike the equator resulting in day and night of equal length, usually on march 21st or 22nd.
9. The movement of the Earth revolving around the sun; full revolution about 365 days.
10. Polar global winds that flow from the poles and move to the west.
13. A global area of calm winds.
14. The Winter's shortest day when the sun is the farthest south of the equator and the Northern Hemisphere, usually on December 21st or 22nd.

Down

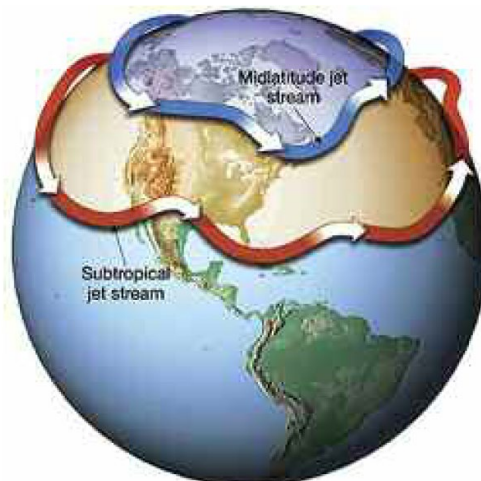
1. The method by which the sun heats the Earth
2. Warm steady winds that blow toward the equator.
4. How the Earth turns on its axis at an angle of 23.5 while it revolves around the sun every 24 hours. full rotation.
6. Prevailing global winds that move toward the pole and appear to curve to the east.
8. A strong wind stream that develops at 30,000-35,000 feet and moves as a winding road across the Us, generally from the west to the east.
11. The longest summer day when the sun is at its northernmost point from the equator in the Northern Hemisphere, usually on June 21st or 22nd.
12. The world-wide system of winds that transfers heat between tropical and polar regions

ANSWERS

AD 3 AIR ENVIRONMENT CHAP 2 AIR CIRCULATION



Created using the Crossword Maker on TheTeachersCorner.net



The jet stream affecting the United States moves up and down across the continent. When it is farther north, as in Canada, the weather to its south tends to be mild, or, at least, less cold. When the jet stream swings south into the United States, especially in winter, very cold, often harsh weather prevails at the surface on the northern side.

Photo Credit - CAP Aerospace Dimensions

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** Editor’s Note front page: Mr Ron Finger is our CAP National Artist and his CAP artwork can be found online at: <https://www.cap.news/timeline-flight-21/> and <https://www.cap.news/silvered-wings-boeing-model-40-ab/>

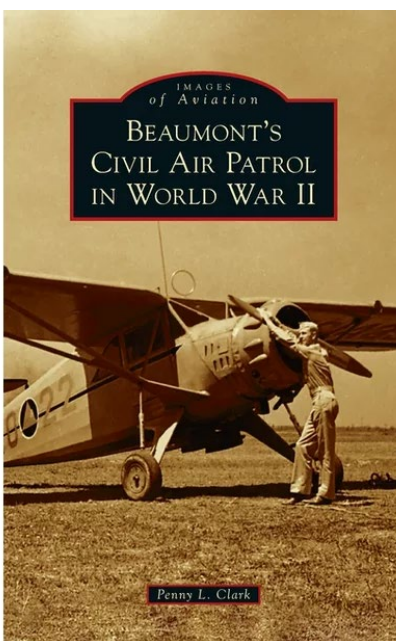


Photo Credit: Arcadia Publishing (SC)

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