

# *Civil Air Patrol*

*Aerospace Education*

*Teacher Orientation Program (TOP) Flight Guide*



*Out of the classroom;  
Into the sky!*

## Overview

Teacher Orientation Program (TOP) Flights provide the opportunity for CAP Aerospace Education Members (AEMs) or other CAP Sr members who are educators to experience orientation flights in CAP aircraft at their local airports. Any educator member of CAP can receive these orientation flights as a part of their membership benefits. Educators can receive one TOP Flight per fiscal year.

[TOP Flight certificates](#) are available at the end of this guide, and, on the [TOP Flight webpage](#). Printing and presenting these certificates—along with taking photos with the pilot—makes the experience even more special.



The excitement and enthusiasm for the program is evident. Some of the responses from past participants:

*"I found this flight experience engaging, well planned, and inspiring. I learned about all the parts of the airplane and how each works in flight. I even got to fly the plane!"*

*"The flight opportunity that was given to me was unbelievable! My students were able to watch my flight from the school grounds. They loved my video when I returned!"*

*"I can't wait to bring what I learned back into my classroom to my students! I can connect all areas of STEM to this flight experience!"*

*"I loved my pilot! He was amazing and taught me so much. The flight would not have been so beneficial without his expertise and guidance!"*

*"The pilot allowed me to fly over my school. Later, he came to the school to discuss becoming a pilot with my students It was wonderful!"*

*"Thank you very much for making this possible for teachers! This is an experience like no other!"*

## The Wing Point of Contact (PoC)

The TOP Flight PoC in each wing is the Wing Director of Aerospace Education (DAE). Teachers are directed to contact their Wing DAE (Wing DAE contact list found [HERE](#)) to begin coordination of the flight. The Wing DAE coordinates each flight request with the Wing Director of Operations and/or his/her designee.

\*\*\* If unit AEOs or others in a wing are contacted by a teacher about a TOP Flight, the Wing DAE should be copied on coordination efforts for the DAE's records.

\*\*\* If the Wing DAE has a designee (such as Asst DAE for External Programs), all e-mail coordination should copy both DAEs to ensure the request is handled in a timely manner.

\*\*\* If a school leader or a teacher workshop leader requests TOP Flights for a group of teachers, the Wing DAE is responsible for helping to coordinate an associated AE workshop. [More details about the workshop experience follows in this guide.](#)

### Wing DAEs should:

1. Seek/confirm Wing Commander's approval for TOP Flights to be conducted at the beginning of each fiscal year (or, as is appropriate and/or needed).
2. Stay in contact with Wing DO about upcoming TOP Flights to determine the best way to coordinate between the DAE and Ops team -- which arranges planes and pilots for these flights. (Ops team also enters missions in WMIRS- [more info to follow.](#))
3. Recruit TOP Flight participants:
  - a. Communicate the opportunity with the current AEMs in the wing.
  - b. Encourage AEOs to initiate program in their area.
  - c. Visit/contact local schools and/or encourage AEOs to visit/contact local schools to recruit new AEMs to participate in program.
4. Post any promotional program information or announcements electronically on the wing's webpage, in newsletters or on social media sites, or, as is feasible, on printed fliers at local schools. [\(TOP Flight Info flier follows.\)](#)
5. Wing DAE should maintain a record of TOP Flight participation each fiscal year with a Wing TOP Flight spreadsheet to:
  - a. provide Wing Commander TOP Flight updates, and
  - b. utilize for continued AEM promotion & follow up of program.

## Planning the Flight(s)

1. Determine how many teachers will fly. ---Try to fly two at a time, if possible. If not, flying only one teacher is acceptable, but not the preferred practice.
2. Plan the number of planes and pilots needed, as is determined by how many teachers and how long in the day they are to fly. If only one plane/pilot is available, it is best to schedule two teachers at a time to come to the airport every 1.5 hours. This will reduce any wait time for the teachers. If there is an AE workshop also being conducted, all can come and participate in learning activities until their time to fly. If there are more planes/pilots, plan accordingly.
3. If there are many teachers to fly, planning WELL in advance is mandatory to ensure a workshop and enough planes/pilots are planned for the scheduled day(s). **(See sample workshop plans further in this guide.)**
  - a. Ask for assistants to help with instruction of the AE workshop and for any other assistance that is needed to ensure a professional experience is had by all.
  - a. If a tour of the airport is a part of the workshop, ensure all coordination is preplanned for smoothly run tours.
  - b. Enlist the help of others to take photos and help with refreshments, media coverage, or signing certificates, etc.
  - c. If desired, have one CAP member in charge of the safety briefing and/or the pre-flight (orientation) briefing. As many persons as can help will improve the overall experience.



4. Ensure teachers' CAP ID#s are current or they cannot fly. Have the teachers bring either their CAP membership card OR a photo ID that will match the CAP ID info in eServices.
5. Instruct teachers on what to bring and what to expect for the flight experience. Refer to the TOP Flight FAQs found mid page [HERE](#).

## Flight Day

1. Prepare for the day of flight(s) by having teachers' certificates printed; someone assigned to take photos; comfortable indoor seating and accommodations; refreshments (water, crackers, mints); and activities, tours, or aviation videos to fill participant "wait time."
2. Present a professional and congenial image. Any authorized CAP uniform may be worn by uniformed CAP members. **(NOTE: Teachers do not have a CAP uniform, so they can wear any comfortable clothes & closed-toed shoes.)**
3. Stress safety and adequately prepare teachers for their flights to alleviate any nervousness.
4. CAP would like every TOP Flight participant to have a positive, fun, and educational experience. Thus, it is important that an orientation or pre-flight briefing is conducted prior to the actual flights. Such topics as airplane parts (and purposes of each), fuel topics (tank location, fuel mixture, distance per gallon, etc.), safety issues, classroom STEM topic relevance to aviation principles, benefits of aerial photography with CAP, etc. could be discussed to maximize benefits of this experience.
5. Involve the teachers in flight planning, to include flying over their schools and community, if possible, to make the flight more personal and relevant for them.
6. If possible, have a CAP Flight Simulator from the STEM Kit program available for the teachers to work on prior to their flight. It will bring some confidence when the teacher gets to take the yoke and assist in flying the plane. (Which they want to do!)



7. At the end of the flight, ensure the [certificate](#) is signed by the pilot and presented to the teacher in front of the plane (with a photo).
8. Before the teachers depart, have them complete the online [TOP Flight evaluation form](#). Have them submit any flight photos to [ae@capnhq.gov](mailto:ae@capnhq.gov).



#### Why conduct TOP Flights?

- To connect CAP units with area teachers (and their students).
- To provide teachers exciting professional experiences and relevant aviation-related STEM knowledge that can be transferred directly to classroom STEM content areas.
- To foster student interest in aviation-related STEM careers via the teachers' shared experiences.
- To share an appreciation for Civil Air Patrol's missions for America.

## BEST PRACTICES:

The [ALWing](#) has a special [O'flight request page](#) on their website. This is used to request pilots and aircraft for o'flights for CAP cadets, USAF JROTC and ROTC cadets, and educator members of CAP. These requests go directly to someone who works with the DO in the AL Wing and who can then push out the requests to Ops where flights are planned most efficiently.

- This has been replicated in other wings, such as the TXWG.
- Please share other TOP Flight BEST PRACTICES with [ae@capnhq.gov](mailto:ae@capnhq.gov).

Since Feb 2019, TOP Flights are USAF A Missions (vs the C Missions of the past). This allows any pilot approved for Cadet o'flights to also be an approved TOP flight pilot.

Using the [Cadet O'flight Program Guide](#) is an excellent way to maximize the TOP flights!

Offer teachers the opportunity to take the controls if they feel comfortable.



### Can teachers take control of the airplane?

As part of the overall educational flight experience, it is beneficial for the pilot to provide flight control surface instructions and follow with allowing the teacher to control airplane's movement under his/her hand on the yoke and/or pedals. Involving the teacher in the entire flight process will ensure a better experience and transfer of knowledge to students.

### Length of TOP Flights:

When flying one teacher, the flight can last between 30-45 minutes.

When flying two teachers at a time, the "time in air" should be about one hour total. The flight should be planned as two sorties – a 30-minute flight time each. Start with one teacher in front seat for first sortie; then land, switch seats, and return to home base for second sortie. This gives both teachers the opportunity to see the cockpit operations and take the yoke, if desired and appropriate.





## Civil Air Patrol ~ Aerospace Education *Teacher Orientation Program Flights*



# Attachments and Resources

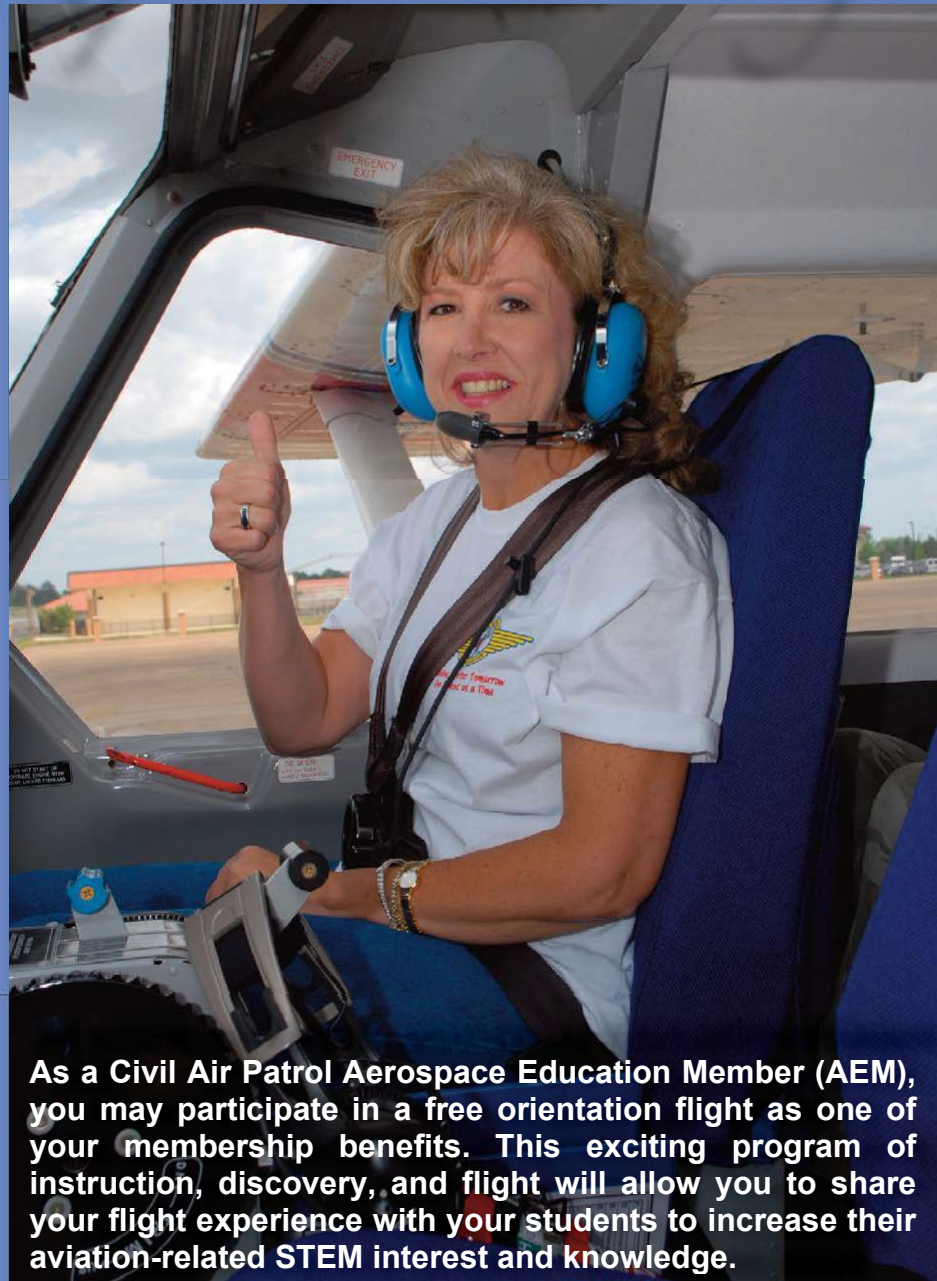
Click on each section to get that section.

1. Educator TOP Flight Recruitment Flier
2. WMIRS Instructions
3. [Online Evaluation Form](#)
4. Sample Pre-flight Lesson Plan Procedure
5. Sample Schedules for TOP Flights, and, if appropriate, an Associated AE Workshop
6. TOP Flight Certificate



# *CAP EDUCATORS*

*Experience TOP Flights*



**As a Civil Air Patrol Aerospace Education Member (AEM), you may participate in a free orientation flight as one of your membership benefits. This exciting program of instruction, discovery, and flight will allow you to share your flight experience with your students to increase their aviation-related STEM interest and knowledge.**

To arrange your Teacher Orientation Program Flight, please contact [ae@capnhq.gov](mailto:ae@capnhq.gov). You will be connected with your state's Director of Aerospace Education to then coordinate with the Operations team in your state to locate a pilot and plane to fly you at your closest airport!

It is more fun to fly with a friend, so, encourage one of your peers to join CAP with you and you can fly together. The BEST experience is with several members of your school or school system joining together and planning a fun-filled TOP Flight Day! All participants must be CAP members. Contact [ae@capnhq.gov](mailto:ae@capnhq.gov) for more information.



## WMIRS Instructions for Teacher Orientation Program (TOP) Flights

1. The Wing DAE should develop/maintain a working relationship with the Wing DO and/or designee and give all pertinent information for a WMIRS Mission TOP Flight Request to be entered in eServices.
  - a. A WMIRS TOP Flight mission request can be entered for one day's flight(s)- or for a month or longer- depending on the Wing's preference.
  - b. Funding is available each year so all wings should plan TOP flights. If funding becomes an issue, the Wing DAEs will be informed by NHQ/AE to have any open mission adjusted or closed.
2. Entering a WMIRS New Mission (**only enter what is NOT designated for the NOC**):
  - a. **Training Mission** should be checked.
  - b. **Requesting Wing** should be entered.
  - c. **Mission Name** can be a specific school or teacher name, or simply TOP Flights.
  - d. **Ignore Mission Group at this time.**
  - e. **Description** should list how many teachers at one location OR can be an open TOP Flight mission description for multiple sorties in coming weeks or months.
  - f. **Training Request** is Teacher Orientation Program.
  - g. **Mission Start and End Dates** can be for a few days; a few weeks; or, a few months. Enter back-up dates, as well.
  - h. **Estimated Costs** – enter for communications, vehicle, and/or AC expenses.
  - i. **Mission Scenario** should indicate as detailed information as is needed or desired in the Wing to designate flights, expenses, or extended dates for flights.
  - j. **Number of Non-CAP Crew/Personnel** should be "0" as all teachers flying should be Aerospace Education Members or other teacher members of CAP.
  - k. **Customer Information** CAP is Agency; name of entering person (or pilot) as Customer POC, with e- mail address and contact phone #.
3. **Once the mission request is entered, the National Operations Center (NOC) or CAP NHQ/AE will update the mission with appropriate funding source (A- Teacher Orientation Program flight) and mission symbol (A-19).**
  - a. After this update, the mission will be ready for Wing Coordination. (Wing CC, or designee, will be automatically notified of this pending status needing attention.)
  - b. After Wing Coordination, the mission will be ready for CAP-USAF Liaison Region approval. (CAP-USAF Liaison Region will be auto-notified of this pending status.)
  - c. Once all approvals are ready, the mission will be ready to enter sorties.
  - d. Each mission will have sorties for each take-off and landing.
4. Questions or concerns should be directed to the NOC. ([OPSCenter@capnhq.gov](mailto:OPSCenter@capnhq.gov))
5. Prior to, or, at the completion of the mission, the original requester goes back into WMIRS and completes the form with all relevant data, including the names in each sortie flown.



**Civil Air Patrol ~ Aerospace Education**  
**—Teacher Orientation Program Flights—**



## Teacher Evaluation

*This is now an online evaluation which teachers should be asked to complete after the flight.*

*They should also be asked to send a photo or two to the pilot and/or [ae@capnhq.gov](mailto:ae@capnhq.gov) for their experience to be share on social media or in publications. The photos should include the teacher's name, school, grade level, and whatever they teach. They should also include their pilot's name.*

## TOP Flight Online Evaluation QR Code





## Civil Air Patrol ~ Aerospace Education —Teacher Orientation Program Flights—



### Sample Pre-flight Lesson Plan for TOP Flights

Objective: Participants will learn procedures for pre-flight inspection, and, learn about the control surfaces of airplane, the use of flight controls and instruments in cockpit during flight, aerial photography as a teaching tool, and other subjects dealing with an “Introduction to Flying.”

Procedure for Pilots and Others Involved in the TOP Flight Experience:

1. Prior to flight- Introduce themselves and give backgrounds as pilot(s) and/or ground crew.
  - a. Discuss safety issues pertinent before, during and after the flight.
  - b. Using an appropriate checklist, demonstrate a routine pre-flight inspection of the airplane. During this inspection, point out specific parts of the airplane and identify its function.
  - c. If appropriate, demonstrate how the airplane is fueled.
  - d. Using the checklist, show teachers the routine cockpit checks prior to takeoff.
  - e. Discuss weather and how this affects flight.
  - f. Discuss what teachers will experience and make suggestions as to how this experience can be used to motivate students (such as aerial photography of their school, videos of the flight showing demonstrations of principles of flight, flying the plane, etc., and how areas of STEM are involved in aviation).
2. During flight – Explain how the airplane responds to controls. Point out instruments and use for takeoff, flying, and landing. Allow the teacher to take the yoke, if appropriate and reasonable.
3. After flight –Answer questions teachers may have. The pilot should sign and present the TOP Flight [certificate\(s\)](#) to the teacher(s), with photos at the plane with the pilot.
4. Have teachers fill out [TOP Flight online evaluation form](#) and discuss how CAP can be a resource for the classroom. Offer to visit the classroom to discuss CAP’s missions for America using CAP planes and ground teams. Discuss CAP’s membership programs, and how students can be involved in CAP’s cadet program.





## Civil Air Patrol ~ Aerospace Education **Teacher Orientation Program Flights**



### **Flight Day with Pre-Flight Session Only Sample Schedule for One or More Teachers**

- 9:00-9:10 Welcome and Introductions
- 9:10-9:30 Pre-flight Overview
- Safety
  - Airplane Parts
  - Connecting the Experience to the Classroom
  - Aerial Photography to Share with Students
  - How CAP Uses Planes for Search & Rescue and Other Missions
  - Aviation Careers
- 9:30-10:30 Teacher O'Flights (plan one hour per flight)
- Plan activities or aviation-related videos for pre and post flight time, if needed, or
  - Plan a field trip to aviation sites near flight line for pre and post flight time, if needed
  - Provide rest and refreshment area
  - Present [certificates](#) to teachers after flight
  - Have teachers complete [TOP Flight online evaluation form](#)
- **Teachers should plan on being at the airport not less than 2 hours. With more than one teacher, time at the airport should be expected to be not less than 2.5 hours.**

NOTE: Try to fly two teachers at a time; one in front seat and one in back seat. For first sortie, let front seat teacher fly the plane; then land and switch front and back seats. For second sortie, the other teacher gets a chance to fly the plane.



## Civil Air Patrol ~ Aerospace Education —Teacher Orientation Program Flights—



### Optional One-Day Workshop Sample Schedule

|             |   |
|-------------|---|
| 9:00-9:20   | Welcome and Introductions<br>Workshop Overview  |
| 9:20-10:00  | Flight Basics (activities enhance the instruction) <ul style="list-style-type: none"><li>• Bernoulli's Principle (<a href="#">sample lesson</a>;) )</li><li>• Four Forces of Flight (<a href="#">sample video</a>)</li></ul>  |
| 10:00-10:15 | Break   |
| 10:15-11:15 | Parts of the Airplane (activities enhance the instruction) <ul style="list-style-type: none"><li>• Axes of Movement (<a href="#">sample video</a>)</li><li>• Outside Control Surfaces (<a href="#">sample video</a>)</li></ul>  |
| 11:15-12:00 | Flight Orientation/Plans for Afternoon Flights  |
| 12:00-1:00  | Lunch   |
| 1:00-4:00   | Teacher O'Flights <ul style="list-style-type: none"><li>• Plan activities or aviation-related videos for pre and post flight time, or</li><li>• Plan a field trip to aviation sites near flight line for pre and post flight time</li><li>• Provide rest and refreshment area</li><li>• Present <a href="#">certificates</a> to teachers, with photos</li><li>• Have teachers <a href="#">TOP Flight online evaluation form</a></li></ul> |

**An alternate schedule is to divide the teachers into two groups with one doing classroom instruction while the other half flies. Have lunch and switch group assignments.**

NOTE: Try to fly two teachers at a time in each plane; one in front seat and one in back seat. For first sortie, let front seat teacher fly the plane; then, land and switch front and back seats. For second sortie, the other teacher gets a chance to fly the plane.



## Civil Air Patrol ~ Aerospace Education Teacher Orientation Program Flights



### Optional Two-Day Workshop Sample Schedule (or, make your own!)

|             |   |
|-------------|---|
| 9:00-9:30   | Welcome and Introductions<br>Workshop Overview  |
| 9:30-10:30  | Flight Basics (activities or video enhance instruction) <ul style="list-style-type: none"><li>• Bernoulli's Principle (<a href="#">sample lesson</a>)</li><li>• Four Forces of Flight (<a href="#">sample video</a>)</li></ul>                      |
| 10:30-10:45 | Break   |
| 10:45-12:00 | <a href="#">Parts of the Airplane</a> (activities or video enhance instruction) <ul style="list-style-type: none"><li>• Axes of Movement (<a href="#">sample video</a>)</li><li>• Outside Control Surfaces (<a href="#">sample video</a>)</li></ul> |
| 12:00-1:00  | Lunch   |
| 1:00-1:30   | Instrument Panel (sample <a href="#">video of G1000 glass cockpit</a> )   |
| 1:30-2:00   | Aerospace Careers ( <a href="#">EAA video series</a> is good to use)  |
| 2:00-2:20   | Break   |
| 2:20-3:20   | Aeronautical Charts ( <a href="#">sample video</a> )<br>(Pilot could present this video and conduct activities with charts)   |
| 3:30-4:00   | Flight Orientation/Plans for Tomorrow's Flights   |

Schedule teachers for flights the following day in 1.5 hour increments.

#### Teacher O'Flights

- Plan activities or aviation-related videos for pre and post flight time, or
- Plan a field trip to aviation sites near flight line for pre and post flight time
- Provide rest and refreshment area
- Present [certificates](#) to teachers
- Have teachers complete [TOP Flight online evaluation form](#)

NOTE: Try to fly two teachers at a time in each plane; one in front seat and one in back seat. For first sortie, let front seat teacher fly the plane; then, land and switch front and back seats. For second sortie, the other teacher gets a chance to fly the plane.



# CIVIL AIR PATROL TOP Flight



## Certificate of Completion

This is to certify that

\_\_\_\_\_

has completed \_\_\_\_\_ aviation-related STEM contact hours in CAP's Teacher Orientation Program

\_\_\_\_\_

Pilot

\_\_\_\_\_

Aircraft



Flight is good.

\_\_\_\_\_

Airport

\_\_\_\_\_

Date