

CADET ORIENTATION FLIGHT SYLLABUS

Tools for Pilots, Cadets & Cadet Programs Officers



CAPP 52-7 April 2009



CADET ORIENTATION FLIGHT SYLLABUS

O-FLIGHT PROGRAM MOTTO: *Safe, Fun, Educational*

The #1 reason cadets join Civil Air Patrol is to fly. To motivate them to achieve in the Cadet Program, fly them regularly. It is because of the flying program that CAP is able to accomplish its other goals in leadership, fitness, and character. This guide explains how to conduct the cadet orientation flight program.

CONTENTS

Pre-Flight: A Perspective on Safety.....	1
Program Overview.....	2
Resources for Local Leaders.....	6
Orientation Flight Syllabi.....	15

SUMMARY OF CHANGES

This edition of CAPP 52-7 replaces the version dated 1 April 2007. The only substantive change is a clarification that senior members (except the pilot in command) are prohibited from participating in cadet orientation flights flown as Air Force-assigned missions. See paragraph 3 on page 3. This edition also includes several new resources to help local leaders conduct the program.

Pre-flight: A PERSPECTIVE ON SAFETY

The primary goal of the Civil Air Patrol cadet orientation flight program is to share with cadets the thrill of flying. However, that objective will be achieved only if safety is a priority.

The greatest burden for keeping everyone safe when flying falls to the pilot. Nervous moms will tell you that safety is their first concern, and rightly so. By honoring the special trust that parents place in them, pilots can become better aviators. Nothing focuses the mind like having someone's child in your cockpit.

Moreover, orientation flights are opportunities for cadets to become safety conscious. Pilots and Cadet Programs Officers should look for teachable moments where they can weave the following points into the day's activities:

The Drug-Free Ethic. You cannot react quickly and perform as a skilled aviator while under the influence of alcohol or drugs. Professional pilots and technicians are subjected to random drug tests. Flying is a sobering responsibility.

Planning to Stay Safe. Safety doesn't happen by accident, it requires planning. Pilots demonstrate this fact by checking the weather, examining their aeronautical charts, pre-flighting the aircraft, filing a flight plan, and briefing the passengers before they take-off.

Disciplined Airmanship. Staying safe means following the rules. Pilots stick to the syllabus or flight plan. They have their checklists at the ready and they follow them. They don't horse around or tolerate showboating.

Everything we do involves risk. To stay safe, manage those risks through Operational Risk Management. ORM is a common sense way to detect, assess, and control risk. This process involves having a team identify the activity's potential hazards, assess the risks, and decide on risk controls before the activity begins. To learn more about ORM, visit the safety section at gocivilairpatrol.com.

The only way to keep cadets having fun is to keep them safe.

PROGRAM OVERVIEW

1. GOAL & MOTTO

The Cadet Orientation Flight Program introduces youth to general aviation through hands-on orientation flights in single engine aircraft and gliders. The program's motto describes what cadet flying is all about: "Safe, Fun, Educational."

The program is limited to current CAP cadets under 18 years of age. At no time will cadets sustain any costs associated with this program.

2. ROLE OF LOCAL LEADERS

Wing Headquarters manages the program budget and reimbursement process and ensures local leaders conduct the program properly. Some wings may choose to support the program by appointing a senior member to coordinate all flights and manage the program. Wings may supplement this pamphlet only with the consent of NHQ/DO and NHQ/CP.

Squadron Commanders should try to provide each new cadet with an orientation flight within 60 days of joining CAP. Squadron commanders should also strive to provide each cadet with at least 1, but preferably 2, flights per year by conducting orientation flight days once per quarter. (While it may not be possible to fly every cadet quarterly, by holding four orientation flight days per year, each cadet should receive 1 or 2 flights per year.) To manage the program, each commander should appoint an orientation flight coordinator. The aerospace education officer or activities officer could be an ideal candidate.

Orientation Flight Coordinators are senior members who plan cadet flying activities. Some of their key tasks include:

- Developing schedules and sortie plans
- Coordinating to obtain pilots and aircraft, to include working with neighboring squadrons and/or group or wing headquarters
- Managing cadet sign-up rosters
- Entering flight data into WMIRS
- Coordinating with other staff officers who support cadet flying such as public affairs and aerospace education officers
- Updating the CAPF 66, *Cadet Master Record*, to record which syllabus flights the cadet has completed and which are remaining.

3. ELIGIBILITY REQUIREMENTS

Orientation flights are available only to current CAP cadets under 18 years of age. Senior members are not authorized to participate in flights being conducted as Air Force-assigned missions unless they are serving as the pilot in command or escorting a cadet who requires special assistance.

4. FLIGHT REQUIREMENTS

All flights must be conducted in accordance with CAPR 60-1, *CAP Flight Management*. The hallmarks of a successful orientation flight include:

Focusing on safety. Every flight will conform to the syllabus and be consistent with safety. Flights will only be conducted in daylight and in visual meteorological conditions (VMC).

Flying single-engine aircraft or gliders. Flights will be accomplished only in single engine aircraft and in gliders.

A thrilling experience. Cadets should be allowed to handle the flight controls, under the pilot's supervision, during the non-critical phases of flight (e.g.: not during take-off, landing, or an emergency).

Fulfilling at least 80% of the flight syllabus's goals. Each flight has an educational purpose, as discussed in the various syllabi. The goal is to complete the syllabus objectives in one sortie.

Lasting 0.7 - 1.2 hours in duration. Actual flight time will depend on local conditions. All flights can safely be accomplished in 0.7 to 1.0 flight hours. National Headquarters may limit the reimbursements if flights are longer than 1.2 hours.

Maximizing the use of the aircraft. It is the cadet seated in the front seat who is the primary "student" during an orientation flight. However, in powered aircraft, a second or third cadet should fly in the back seat, as weight and balance allows. Cadets may have as many back seat flights as possible. Back seat flights are observation flights only and are not reimbursable. You must have a cadet in the front seat if back seat rides are flown.

Properly seating the participants. The pilot of powered aircraft will occupy the left front seat. The pilot of glider aircraft will occupy the rear seat, proficiency permitting (or the left seat of gliders that have side-by-side seating).

Avoiding extreme maneuvers. Pilots will not perform extreme maneuvers, aerobatics, spins or emergency procedures (unless, of course, there's an emergency).

5. PILOT REQUIREMENTS

Cadet orientation flight pilots will be qualified and selected in accordance with CAPR 60-1, *CAP Flight Management*. Moreover, cadet orientation pilots are required to:

1. Ensure that participating cadets are under age 18 and are current CAP members.
2. Pre-flight and operate the aircraft in a safe manner, consistent with CAP and federal aviation regulations.
3. Brief cadets on how to operate around the aircraft.
4. Adhere to the flight syllabus.
5. Enter the flight information online through WMIRS (see paragraph 8).

Pilots should be familiar with the cadet *Aerospace Dimensions* modules, available in the “cadet library” on the CAP website. The flight syllabi work hand-in-hand with the modules. By being familiar with the subject matter the cadets are studying, pilots can make the orientation flights that much more educational.

6. CADETS' RESPONSIBILITIES

A cadet's first responsibility is to arrive ready to fly on orientation flight day. This is an expensive program involving a great deal of planning and coordination. Therefore, it is important for cadets to arrive on time and ready to fly. Commanders should ask cadets to bring the following with them:

- The uniform of the day
- Sunglasses
- Chewing gum
- Snacks and water
- Camera (optional)

7. FINANCIAL REIMBURSEMENTS

Each wing is allotted funds for cadet orientation flights. Wings must manage the financial aspects of the program in accordance with CAPR 173-3, *Payment for Civil Air Patrol Support*. That same regulation also specifies the reimbursement rates for aircraft used to support cadet flying.

Sometimes, pilots or squadrons want to fly cadet orientation flights but not seek reimbursement. Since National Headquarters is tracking all of the cadet orientation flights flown, please enter the code “75” in the *Syllabus Number* field for orientation flights not seeking reimbursement.

8. ONLINE REPORTING

Before National Headquarters reimburses orientation flight expenses, the flight data must be entered into WMIRS, the Web Mission Information Reporting System, available at <https://missions.cap.af.mil/login.htm>

The rules and procedures for entering cadet orientation flight information are the same as those used for reporting other CAP flight activities (see the WMIRS web site for details).

- **Squadron commanders**, or their representatives, are responsible for entering the orientation flight data into WMIRS. For technical support, please see the contact information on the WMIRS web site.
- **Wing commanders** are responsible for managing the cadet orientation flight program in their wings to include expending funds, allocating resources and determining reasonable ferrying conditions. They are responsible for auditing the flight information for accuracy and timeliness and for avoiding fraud, waste or abuse.

9. FERRY FLIGHTS

Wings should develop and publish a matrix indicating the number of orientation flights needed to justify ferrying an aircraft from one location to another. A sample matrix is shown below:

Ferry aircraft to:		ABC	DEF	GHI	JKL
Ferry aircraft from:	ABC (Gotham)		4	6	8
	DEF (Tatooine)	4		4	6
	GHI (Mordor)	6	4		4
	JKL (Krypton)	8	6	4	

10. AWARD CERTIFICATE

Commanders should present CAPC 77, *Certificate of First Flight*, to cadets upon completing their first CAP orientation flight.

RESOURCES FOR LOCAL LEADERS

11. CADET STAFF

To provide cadets with leadership opportunities, the squadron may appoint Cadet Briefing Officers. These individuals should be cadet officers or NCOs who are particularly knowledgeable about aviation. Cadet Briefing Officers assist the pilots in preparing cadets for their orientation flights. Suggested duties include:

- Leading the Pre-Flight Activity (see section 15)
- Reviewing the flight syllabus with cadets, before take-off
- Discussing how the flight syllabus relates to the topics studied in *Aerospace Dimensions*
- Helping cadets find the departure airport on a sectional chart and examining the route or landmarks in the general area where the flights will be located
- Ensuring cadets have the following (optional) equipment: sunglasses, a digital camera, snacks, chewing gum, water
- Discussing safety precautions to observe when on the tarmac (no headgear, stand clear of propellers, no running)
- Advising cadets to visit the restroom before take-off
- Introducing the pilots and cadets to one another
- Answering general questions about the flight
- Following-up with cadets after landing to discuss the success of their flight, look for ways to improve the program, and check their morale

12. SUGGESTED PLANNING TIMELINE

Project Officer	Coordinate for pilots & aircraft	Coordinate for pilots & aircraft	Announce activity: - Primary date - Rain date - Location - Sign-up procedures	Begin preparing schedule & sortie plan Select & prepare Cadet Briefing Officer (optional)	Finalize schedule & sortie plan Verify that resources are sufficient (pilots, aircraft)	Confirm schedule with pilots Verify that all participating cadets are under age 18 and are current members	Discuss weather forecast with pilots; decide whether to go, delay, or postpone flights	Supervise ground operations and the execution of the schedule & sortie plan Enter flight data into WMIRS
Pilots	Volunteer to fly; discuss scheduling & availability	Volunteer to fly; discuss scheduling & availability				Confirm schedule with project officer	Discuss weather forecast with project officer; decide whether to go, delay, or postpone flights	Fly
Public Affairs Officer						Invite local media to event	Follow up with local media	Take pictures and interview cadets & pilots Prepare press release
Cadet Briefing Officer					Begin planning Pre-Flight Activity	Brief cadets on schedule & what to bring with them		Brief cadets prior to flights
Cadets			Begin signing-up	Deadline to sign-up			Review flight syllabus Prepare uniform, organize gear	Fly
	-6 weeks	-5 weeks	-4 weeks	-3 weeks	-2 weeks	-1 week	-1 day	Flying Day

13. RECIPE FOR A SUCCESSFUL O-FLIGHT DAY

- Coordinate for aircraft and pilots about 6 weeks in advance.
- Ask your hometown airport to lend you a conference room to use as a base of operations.
- Coordinate with an FBO to take care of your fuel and other service needs.
- Have all cadets sign-up in advance to participate. Ensure each knows what time they need to report to the airport. Ensure parents are aware of their cadet's commitment to participate.
- Ensure parents are comfortable with the orientation flight program. Use the Parents' Fact Sheet (section 16) to help answer their questions and show that CAP is committed to their child's safety.
- Give parents a cell phone number where they can reach one of the seniors at the airport.
- Prepare a detailed schedule / sortie plan, as illustrated in paragraph 14 below.
- Have at least one senior member or cadet sponsor member stationed on the ground to supervise cadets and prepare for the next sortie, to limit the aircraft's downtime.
- Have meaningful activities to occupy cadets as they wait their turn to fly.
- Take lots of pictures and send a press release to local media.
- Allow parents to meet the pilot and see the aircraft before their cadet flies.
- Working with the pilots, discuss plans for inclement weather.
- Have a supply of First Flight Certificates ready.
- Have a copy of the Cadet Orientation Flight Syllabus at the ready.
- Ensure all participating cadets are current members under age 18.

14. SAMPLE SCHEDULE & SORTIE PLAN

	Cessna 172 N99100	Cessna 182 N9930E	Command Post Officer
FERRY FLIGHT 0730-0800	NA	XYZ Field to ABC Field Pilot: Capt Earhart Co-Pilot: Capt Eaker	
SORTIE 1 0830-0925	Pilot: Maj Lindbergh ABC Field to XYZ Field Front: Cdt Curry, Flt #2 Back: Cdt Arnold	Pilot: Capt Earhart ABC Field to XYZ Field Front: Cdt Feik, Flt #1 Back: Cdt Goddard	Command Post opens at 0800 Maj Curry
1005-1100	XYZ Field to ABC Field Front: Cdt Arnold, Flt #2 Back: Cdt Curry	XYZ Field to ABC Field Front: Cdt Goddard, Flt #4 Back: Cdt Feik	
1100-1130	Break, prep for next sortie	Break, prep for next sortie	Maj Curry
SORTIE 2 1130-1225	Pilot: Maj Lindbergh ABC Field to XYZ Field Front: Cdt Wright, Flt #2 Back: Cdt Doolittle	Pilot: Capt Eaker ABC Field to XYZ Field Front: Cdt Armstrong, Flt #5 Back: Cdt Mitchell	2d Lt Loening
1235-1330	XYZ Field to ABC Field Front: Cdt Doolittle, Flt #3 Back: Cdt Wright	XYZ Field to ABC Field Front: Cdt Mitchell, Flt #3 Back: Cdt Armstrong	
1330-1400	Break, prep for next sortie	Break, prep for next sortie	2d Lt Loening
SORTIE 3 1400-1500	Pilot: Col Spaatz ABC Field to XYZ Field Front: Cdt Garber, Flt #1 Back: Cdt Wilson	Pilot: Capt Eaker ABC Field to XYZ Field Front: Cdt Sorenson, Flt #2 Back: Cdt Borman	2d Lt Loening
1500-1600	XYZ Field to ABC Field Front: Cdt Wilson, Flt #2 Back: Cdt Garber	XYZ Field to ABC Field Front: Cdt Borman, Flt #2 Back: Cdt Sorenson	
FERRY FLIGHT 1630-1700	NA	ABC Field to XYZ Field Pilot: Capt Earhart Co-Pilot: Capt Eaker	NA

15. PRE-FLIGHT ACTIVITY

Many cadets are not only new to flying, they will be visiting a general aviation airport for the first time. During this activity, cadets learn about the airport's anatomy. This optional activity is a good way to occupy cadets as they wait their turn to fly. Further, it provides cadet officers and NCOs with a leadership opportunity.

Suggested Instructor(s)

- A pilot, aerospace officer, or similar individual should draw upon his or her knowledge to conduct the ground activities listed below.
- Cadet Officers and NCOs could assist in leading the ground activities below, if they are knowledgeable about flying.

Duration of Preflight Activities

Approximately 45 minutes, but can be adjusted to fit the time available

Objectives

1. Identify key features of a general aviation airport and describe their function
2. Identify key features of an aeronautical sectional chart
3. Assist the instructor in observing the weather conditions and obtaining a forecast
4. Defend the idea that aviators need to be healthy, drug-free, and alert
5. Actively observe an aircraft preflight

Best Practices to Consider

- Create a sortie schedule in advance to make efficient use of the aircraft and to limit the cadets' down-time on the ground.
- Divide the cadets into groups of 2-4 cadets so that they may all have a good view of the aircraft preflight.
- Fly 2 cadets at a time (if the aircraft allows). Fly to a neighboring field, land, have the front seat cadet move to the back seat and vice versa, then return to the home field.
- Start the day by having the first group of cadets complete this Preflight Activity, which should take about an hour. Then send them off to fly. Shortly after the first group launches, the second group should arrive and begin this Preflight Activity. Repeat the cycle as many times as needed.

Pre-Flight Activity Lesson Outline

1. Examine the Airport's Anatomy (10 min)

This might be the cadets' first trip to a small airfield. Find a safe location with a good view of the field to point out and explain the function of the following features (where applicable):

- Windsock
- Active runways
- Taxiways
- Beacon
- Runway markers
- FBOs (fixed base operators)
- Tower
- ILS (instrument landing system)

2. Review the Aeronautical Chart (10 min)

Have the cadets locate their airport on a sectional chart. Point out important features in the area, such as mountains, restricted airspace, VORs, etc. If flying to another airport, have the cadets locate it on the chart and determine the heading they'll be flying each way.

3. Observe the Weather (10 min)

Have the cadets assist the pilot in command (PIC) or ground instructor in checking the weather conditions, winds aloft, radar, etc.

4. Drug Free Ethic (2 min)

The PIC should pause to mention the importance of following a drug-free ethic. Drugs and alcohol don't mix with flying. On a similar note, crew rest is important, too. Pilots need to be healthy and fully alert.

5. Restroom Break (10 min)

Last chance for the fliers to use the facilities.

6. Preflight (20 min)

The Pilot-in-Command (or anyone knowledgeable about flying) should lead the cadets through a basic preflight and safety briefing.* Explain what is being checked and why. Conduct the standard passenger briefing. Encourage the cadets to ask questions.

** Of course, the PIC maintains responsibility for pre-flighting the aircraft. But to save time, each group of 2-4 cadets might "preflight" one aircraft on the ground, while another aircraft, pre-flighted once by the PIC, is used for the actual flying.*

16. PARENTS' FACT SHEET

The *Parents' Guide to the CAP Cadet Program* explains the basics of the cadet orientation flight program, but some parents may want more information. This fact sheet aims to fill that need. A "clean" version of this fact sheet is available in the O-Flight section at gocivilairpatrol.com.

Do cadet orientation flights count as bona fide flight instruction?
No. The flights are educational and fun, but are not intended as formal flight training. If your son or daughter wants to earn a pilot's license, you'll want to look into our cadet flight academies. (See cap.gov/ncsa.)

What do cadets learn while aloft?
Each flight has a theme. Flights focus on basic maneuvers, aircraft instruments, weather, etc. A detailed syllabus guides the pilot.

PRACTICAL MATTERS

How much do the flights cost?
CAP never charges cadets for orientation flights.

Do I need to sign a permission slip?
In most cases, no. Your signature on your son's or daughter's membership application is sufficient.

Can cadets fly more than once?
Yes. Each cadet may receive up to 5 flights in a powered aircraft and 5 flights in a glider.

What if my son or daughter gets airsick?
CAP pilots closely monitor how the cadets are feeling while aloft. Airlickness bags are always available, and the pilot can land the aircraft within a few minutes' time. Also, it helps to have a light snack but not a full meal shortly before flying. If your son or daughter is prone to motion sickness, please tell your local leaders beforehand.

What if my son or daughter is scared of flying?
Cadets are never obligated to fly, but we hope they at least give it a try. CAP works to ease cadets' anxieties in a number of ways. Through classroom instruction, cadets learn the basic science that makes flight possible. They'll meet the pilot and find him or her to be trustworthy and reassuring. On the day of their flight, cadets will help the pilot pre-flight the airplane and get to see firsthand that their plane is airworthy. They'll see their fellow cadets flying and having a fantastic time. If your son or daughter is particularly nervous, please talk with your local CAP leaders beforehand. They'll be glad to help.

What should my cadet bring with them?
In addition to their uniform, cadets might want to bring some chewing gum, bottled water, sunglasses, and a copy of their flight syllabus. CAPP 52-7, available at cap.gov/pubs.

Can I take pictures?
Absolutely. Bring a camera to the airport and take pictures of your son or daughter while they are on the ground.

What can I do to help?
Moms and Dads might be needed to help with transportation, to provide snacks, and chaperone cadets. If you're willing to help, please talk with your local CAP leaders.

Cadet orientation flights are safe, fun, and educational. Oftentimes, Moms and Dads are more nervous about the flights than the cadets. We hope this detailed fact sheet has reassured you about our commitment to your child's safety.



**CADET ORIENTATION FLIGHTS:
SAFE, FUN, EDUCATIONAL**

Fact Sheet for Moms & Dads

CAP gives cadets the opportunity to experience the wonder of flight. Orientation flights are among the most exciting aspects of cadet life.

SAFETY QUESTIONS

Who is the pilot?
Only adult volunteers who are members of CAP and have been fingerprinted and screened by the FBI may serve as cadet orientation pilots. Local leaders will introduce you to the pilot if you ask.

What are the pilot's qualifications?
CAP pilots are licensed by the FAA. Moreover, pilots must meet additional requirements set by CAP. For powered aircraft, they will have over 200 hours as pilot-in-command in the class of aircraft they're flying, or 100 flights in the case of gliders. Further, all pilots will have passed an annual written exam that tests their aeronautics, passed an annual check flight with a CAP check pilot, demonstrated a thorough knowledge of the cadets' flight syllabus, and received the approval of their wing commander. In short, CAP requires much more from the pilots who fly your son or daughter than the federal government does.

Do cadets actually fly the plane?
CAP does allow cadets to handle the controls while aloft. Learning how planes fly is the main goal of the program. However, the pilot remains

In command at all times, and only the pilot will fly the airplane during takeoff, landing, and other critical moments of the flight.

Do cadets fly in inclement weather?
No. Cadets fly only in fair weather, under conditions that the FAA calls "visual flight rules."

THE FLIGHT ITSELF

What type of aircraft do cadets fly?
With few exceptions, most cadets will fly in a CAP-owned single-engine Cessna, or a glider.

How long is the flight?
In powered aircraft, cadets are aloft for 45 to 60 minutes. If two cadets fly at once, they share 90 to 120 minutes of flight time. In glider aircraft, the flight time will depend on the soaring conditions.

Where do the cadets fly?
A small airport near your hometown will probably serve as the day's base of operations. The cadets may stay in the immediate vicinity, or fly to a nearby airport, land, switch seats, and return to the original airport.

17. SAMPLE PRESS RELEASE

Change the text shown in *blue* to make this story your own



CIVIL AIR PATROL
Hometown Cadet Squadron
United States Air Force Auxiliary

POINT OF CONTACT: Major Carl Spaatz, CAP (123) 555.1212 cell carl@spatz.com

Hometown USA, 1 December 2009 --

Local Youth Take to the Skies With the Civil Air Patrol

Ten area teens experienced the thrill of aviation, through orientation flights with the Civil Air Patrol at Hometown Municipal Airport today. The cadets flew a combined 10 hours in CAP's sophisticated Cessna 182's.

"It was awesome!" reports Cadet John Curry, age 14, of Hometown. "I've always wanted to fly, and today, for the first time, I got to handle the controls and see what flying is all about."

The hour-long flights in single-engine Cessna aircraft introduced the cadets to the science that makes flight possible. They learned about navigation, weather, aircraft instruments, flight maneuvers, and more.

The cadets' day began by helping pre-flight their aircraft. Working with their pilot, they taxied their aircraft to Hometown Airport's runway 99, gave it full throttle and took off, climbing to 3,000 feet. While aloft, it was the cadets who were handling the controls, during the non-critical stages of the flight.

"You really have to pay attention when you're at the controls," explained Cadet Mary Feik, 16, "but once you get past your initial nervousness, it's fantastic."

Once they reached their assigned altitude, the cadets turned southwest and navigated to Neighboring Airport, where they made a brief stop. Then it was another cadet's turn at the controls for the flight home. CAP pilots repeated this round-trip throughout the day.

"I've been flying cadets for five years, and it's always exciting for me just to see the look on the kids' faces," said one of the pilots, CAP Major Hap Arnold of Hometown. Major Arnold and two other pilots volunteered their time, while the Civil Air Patrol provided the aircraft and fuel, at no cost to the cadets or the pilots.

The area youth participating were [names of cadets]

The pilots included [names of pilots]

The Civil Air Patrol Cadet Program is open to youth aged 12 through 18. Additionally, there are volunteer opportunities for adults, pilots and non-pilots alike. For more information, contact Major Carl Spaatz at 555-1212, or visit GoCivilAirPatrol.com.

-30-

ATTACHMENTS:

Photo-01. Suggested Cutline: Cadets Mary Feik, 14, and Eddie Rickenbacker, 12, assist Major Ira Eaker in pre-flighting their Civil Air Patrol aircraft before enjoying an orientation flight.

Photo-02. Suggested Cutline: Cadet Amelia Earhart, 16, smiles as she prepares for takeoff during the Civil Air Patrol's orientation flight day at Hometown Airport.

18. O-FLIGHT PAPER REGISTER

Use this sheet to record flight data for later entry into WMIRS

Mission Number: _____

Date: _____

Sortie Number	Pilot Name & CAPID	Aircraft Tail Number & Type	Call Sign	Take Off Airport	Landing Airport	Estimated Sortie Hours	Actual Sortie Hours	Estimated Take Off Time (Z)	Actual Take Off Time (Z)	Syllabus Number	Front Seat Cadet Name & CAPID	Back Seat Cadet #1 Name & CAPID (if applicable)	Back Seat Cadet #2 Name & CAPID (if applicable)
1													
2													
3													
4													
5													
6													
7													
8													

ORIENTATION FLIGHT SYLLABI

Pilots should try to make the flights as “hands-on” as possible for the cadets, safety permitting

19. ORIENTATION FLIGHTS IN GLIDER AIRCRAFT

Glider flights allow cadets to experience the thrill and wonder of silent flight. The program provides for the reimbursement of up to five glider syllabus rides in addition to the usual reimbursement of five powered syllabus rides. National Headquarters will reimburse for both the glider and the tow plane, and the reasonable ferrying costs, at the published CAPR 173-3 rates.

If ground launched, launch as necessary to provide at least 80% of the syllabus objectives. Thermal as necessary to provide at least 80% of the syllabus objectives. Gliders will not be thermalled below 1500 feet AGL.

Cadets may, at the glider orientation pilot’s discretion, handle the controls after the orientation pilot has successfully demonstrated the procedures, but only during flight conditions allowed by CAPR 60-1. “Handling the controls” means touching the flight controls in any manner.

The correct technical term is sailplane, but we use the common term “glider” throughout this guide.

20. ORIENTATION FLIGHTS IN POWERED AIRCRAFT

Flights in powered aircraft allow cadets to experience the thrill and wonder of general aviation. The program provides for the reimbursement of up to five powered syllabus rides in addition to the five glider rides mentioned above. National Headquarters will reimburse for the aircraft and its reasonable ferry costs at the published CAPR 173-3 rates.

Cadets may, at the orientation pilot’s discretion, handle the controls after the orientation pilot has successfully demonstrated the procedures, but only during flight conditions allowed by CAPR 60-1. “Handling the controls” means touching the flight controls in any manner.

The flight syllabi are formatted to fit a standard checklist binder or kneepad.

CADET ORIENTATION FLIGHT SYLLABUS

GLIDER

1

SYLLABUS 1

Themes: Ground handling, preflight, takeoff & landing

Estimated Time: 1 sortie

Cadet Textbook Reference: *Aerospace Dimensions*, Module 1

1. Ground Handling

- Show how to ground handle the glider.
- Emphasize surface areas not to be touched.

2. Preflight Inspection

- Show how to preflight launch equipment & glider.
- Show & explain the towrope's or cable's function.
- Mention documents required to be aboard (AROW).
- Show main parts of glider & explain their function.

3. Launch Procedures

Aero Tow:

- Explain the duties & purpose of ground launch personnel.
- Discuss aero tow launch signals.

Ground Launch:

- Explain the duties & purpose of the ground launch personnel.
- Discuss ground launch signals.

4. Before Takeoff

- Show & tell about the routine cockpit checks.
- Explain the sequence of events prior to takeoff.
(Example: Tow hook connection & checks, taking up tow line slack, etc.)

5. Takeoff

- Show & tell about the glider's position behind the tow plane at takeoff & when airborne.
- Describe the glider's position during takeoff roll & initial climb.
- Describe emergency actions to be taken at different altitudes.

6. Climb Out

- Discuss glider's position in relation to tow plane or launch vehicle:
- Describe the high tow position during aero tow.
 - Discuss glider pitch attitude and position during ground launch.

7. Release

- Show & tell about the release to include clearing, release confirmation, & release procedures.

8. In Flight

- Show & tell about the use of flight controls in gliding flight, to include drag devices.
- Point out the glider's attitude in relation to the horizon & at different airspeeds.
- Show & tell about performance airspeeds: lift-over drag & minimum sink airspeeds.
- Identify familiar landmarks, ground features, and the position of the airport with respect to glider altitude and position.

9. Approach to Landing

- Show & tell about the traffic pattern. Discuss the reasons for a standardized entry procedure.
- Show & tell about the pre-landing checklist.
- Explain the use of a crab to maintain position (if needed).
- Identify the base turn and leg of the pattern.
- Show & tell about the final approach; discuss aim point, touch-down point, & stop point, and discuss use of drag devices.

10. Landing & Rollout

- Show & tell about the landing attitude.
- Point out the correct procedure for landing rollout.

11. Post Flight: Questions & Answers

CADET ORIENTATION FLIGHT SYLLABUS

GLIDER

2

SYLLABUS 2

Theme: Normal glider flight maneuvers

Estimated Time: 1 sortie

Cadet Textbook Reference: *Aerospace Dimensions*, Module 1

1. Preflight

- a. Discuss previously completed flights, as appropriate.
- b. Discuss principles for staying safe during this flight.

2. In Flight (minimum altitude of 1500' AGL)

- a. Trim for level flight; show & tell how the glider remains stable in hands-off flight.
- b. Emphasize attitude flying.
- c. Emphasize the importance of clearing.
- d. Discuss the effects of lift, drag, and gravity, and how gravity propels the glider.
- e. Discuss the relationship of lift, angle of attack, and relative wind.
- f. Show & tell straight and turning glides at various speeds (minimum sink, best lift over drag, and pattern speed).
- g. Show & tell shallow banked turn; discuss the horizontal component of lift, adverse yaw, turn coordination, slipping and skidding.
- h. Explain load factor during turns.

3. Post Flight: Questions & Answers

CADET ORIENTATION FLIGHT SYLLABUS

GLIDER

3

SYLLABUS 3

Theme: Advanced glider flight maneuvers

Estimated Time: 1 sortie

Cadet Textbook Reference: *Aerospace Dimensions*, Module 1

1. Preflight

- a. Discuss previously completed flights, as appropriate.
- b. Discuss principles for staying safe during this flight.

2. In Flight (minimum altitude of 1500' AGL)

- a. Perform clearing turns emphasizing collision avoidance.
- b. Demonstrate slow flight during straight & turning descents.
- c. Demonstrate straight ahead and turning stalls as appropriate, emphasizing stall recognition and recovery.
- d. Demonstrate medium and steep bank turns as appropriate.
 - (1) Discuss over-banking tendency.
 - (2) Discuss proper rudder coordination.
 - (3) Discuss aft control stick requirements to keep the nose up.
- e. Explain load factor during turns.
- f. Discuss steep spirals and spins; emphasize the difference and the dangers of excessive load factors in steep spirals.
- g. Demonstrate forward and side slips and discuss their purpose.

3. Post Flight: Questions & Answers

CADET ORIENTATION FLIGHT SYLLABUS

GLIDER

4

SYLLABUS 4

Theme: Use of instruments in soaring flight

Estimated Time: 1 sortie

Cadet Textbook Reference: Aerospace Dimensions, Module 2

1. Preflight

- Discuss previously completed flights, as appropriate.
- Discuss principles for staying safe during this flight.
- Explain the pitot/static system and its relationship to the airspeed indicator, altimeter, and variometer.
- Explain the magnetic compass and its inherent errors.

2. In Flight

- Explain the difference between absolute altitude (AGL), true altitude (MSL), and pressure altitude (PA).
- Demonstrate how to read the altimeter.
- Demonstrate how to read the airspeed indicator and discuss the difference between indicated airspeed, true airspeed, and ground speed.
- Identify how altitude and airspeed are related.
- Demonstrate how to read the variometer and discuss the indications of rising and/or falling thermal activity (air currents).
- Demonstrate turns using the magnetic compass; discuss compass turning errors (variation, deviation, magnetic dip, and oscillation error).

3. Post Flight: Questions & Answers

CADET ORIENTATION FLIGHT SYLLABUS

GLIDER

5

SYLLABUS 5

Themes: Weather

Estimated Time: 1 sortie

Cadet Textbook Reference: Aerospace Dimensions, Module 3

1. Preflight

- Discuss previously completed flights, as appropriate.
- Discuss principles for staying safe during this flight.
- Discuss thermal soaring: the effect of heating, thermal structure, locating thermals (cumulus clouds, dust devils, surface dust & smoke, soaring birds, other sailplanes, etc.).
- Discuss methods of soaring, as appropriate:
 - Ridge and slope soaring
 - Wind effects and requirements, soaring in upslope lift, lee-side turbulence, slope and ridge requirements
 - Sea breeze soaring
 - Mountain wave soaring; formation, visual indications, associated turbulence

2. In Flight (cover those topics appropriate to local conditions)

- Demonstrate thermal soaring; discuss thermal entry and when & how to turn into the thermal; discuss thermalling with other sailplanes, best airspeed, and flying between thermals.
- Demonstrate sea breeze or shear line soaring.
- Demonstrate ridge or slope soaring; emphasize best speed to fly, general rules for turning on the ridge, approaching other sailplanes, and other "rules of the road."
- Demonstrate wave soaring; explain wave structure, wave crests, and rotor; identify lenticular clouds, if present.

3. Post Flight: Questions & Answers

CADET ORIENTATION FLIGHT SYLLABUS

POWERED

1

SYLLABUS 6

Themes: Ground handling, preflight, take-off & landing

Estimated Time: 0.7 hours

Cadet Textbook Reference: Aerospace Dimensions, Module 1

1. Ground Handling

- Demonstrate proper ground handling; identify those surface areas that are not to be touched.

2. Preflight Inspection

- Show and tell while performing a routine pre-flight inspection.
- Identify the required documents that must be kept on board.
- Show and tell about the airplane's basic anatomy.
- Discuss principles for staying safe during this flight.

3. Before Take-Off:

- Using the checklist, show and tell about routine cockpit checks.
- Explain the sequence of events prior to take-off.

4. Take-Off

- Discuss airplane position during takeoff roll and initial climb; demonstrate rudder controls.
- Describe emergency actions to be taken at different altitudes, as discussed during the "before take-off" checklist.

5. In-Flight (minimum altitude of 2500' AGL)

- Show and tell about the use of flight controls.
- Point out the airplane's attitude in relation to the horizon and different airspeeds.
- Identify familiar landmarks, ground features, and the position of the airport with respect to the airplane's altitude and position.

6. Approach to Landing

- Explain the approach to the traffic pattern; explain the reasons for a standardized entry procedure and perform the before landing check.
- Discuss the elements of the traffic pattern.
- Discuss the final approach and the importance of maintaining the correct airspeed.

7. Landing & Roll-Out

- Explain the landing attitude.
- Point out the correct procedure for landing roll-out.

8. Post Flight: Questions & Answers

POWERED

1

SYLLABUS 6

CADET ORIENTATION FLIGHT SYLLABUS

POWERED

2

SYLLABUS 7

Themes: Normal flight maneuvers

Estimated Time: 1.0 hours

Cadet Textbook Reference: Aerospace Dimensions, Module 1

1. Preflight

- a. Discuss previously completed flights, as appropriate.
- b. Discuss principles for staying safe during this flight.

2. In-Flight (minimum altitude of 2500' AGL)

- a. Trim for level flight; point out the stability of the aircraft in hands-off flight.
- b. Emphasize attitude flying.
- c. Show and tell about the trim controls and straight flying to a checkpoint using visual references.
- d. Discuss the effects of lift, drag, and gravity on the airplane.
- e. Discuss the relationship of lift, angle of attack, and relative wind.
- f. Demonstrate a shallow banked turn and point out how the airplane will maintain the turn with controls neutral.
- g. Explain load factor during turns.

3. Post Flight: Questions & Answers

CADET ORIENTATION FLIGHT SYLLABUS

POWERED

3

SYLLABUS 8

Themes: Advanced flight maneuvers

Estimated Time: 1.0 hours

Cadet Textbook Reference: Aerospace Dimensions, Module 1

1. Preflight

- a. Discuss previously completed flights, as appropriate.
- b. Discuss principles for staying safe during this flight.

2. In-Flight (minimum altitude of 2500' AGL)

- a. Perform climbing turns, emphasizing collision avoidance.
- b. Demonstrate slow flight (minimum controllable airspeed - MCA).
- c. Demonstrate straight ahead and turning stalls, as appropriate.

All stalls are to be imminent stalls (first aerodynamic indication of an oncoming stall, which is usually the stall warning alarm); back seat passengers are not allowed when demonstrating stalls.

- d. Demonstrate medium and steep bank turns; discuss proper rudder coordination and control stick requirements to keep the nose up.
- e. Explain load factor during turns.
- f. Discuss steep spirals and spins; emphasize the difference and dangers of excessive load factors in steep spirals.

- g. Demonstrate ground reference maneuvers used in search activities (parallel track, S-turns, expanding square).

3. Post Flight: Questions & Answers

CADET ORIENTATION FLIGHT SYLLABUS

POWERED

4

SYLLABUS 9

Themes: Use of instruments in flight

Estimated Time: 0.7 hours

Cadet Textbook Reference: Aerospace Dimensions, Module 2

1. Preflight

- Discuss previously completed flights, as appropriate.
- Discuss principles for staying safe during this flight.
- Explain the use of basic navigation instruments (clock, altimeter, airspeed indicator, and magnetic compass).
- Explain the pitot/static system and its relationship to the airspeed indicator, altimeter, and vertical velocity indicator.

2. In-Flight (minimum altitude of 2500' AGL)

- Explain the difference between absolute altitude (AGL), true altitude (MSL) and pressure altitude (PA).
- Demonstrate how to read the altimeter.
- Demonstrate how to read the airspeed indicator; discuss indicated airspeed, true airspeed, and ground speed.
- Point out how attitude and airspeed are related.
- Demonstrate how shallow climbs and descents affect the vertical velocity and airspeed indicators.
- Demonstrate turns using the magnetic compass; discuss compass turning errors - variation, deviation, magnetic dip, and oscillation error.

3. Post Flight: Questions & Answers

CADET ORIENTATION FLIGHT SYLLABUS

POWERED

5

SYLLABUS 10

Themes: Weather

Estimated Time: 0.7 hours

Cadet Textbook Reference: Aerospace Dimensions, Module 3

1. Preflight

- Discuss previously completed flights, as appropriate.
- Discuss principles for staying safe during this flight.
- Discuss cloud types and their effect upon flight.
- Discuss how terrain affects air stability.
- Demonstrate preflight weather briefing and discuss its importance.

2. In-Flight

- Demonstrate effects that weather has upon flying.
- Demonstrate the crab method (forward slip) to compensate for wind.
- Discuss wake turbulence avoidance.
- Demonstrate temperature differences at a few altitudes and discuss how altitude affects rate of climb.

3. Post Flight: Questions & Answers