

CAP STANDARD 71-1  
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## Aircrew Training, Airplane

NATIONAL HEADQUARTERS CIVIL AIR PATROL  
Maxwell Air Force Base, Alabama

OPR: CAP/DO

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## Introduction

This document identifies CAP-approved syllabi for use in traditional flight academies, during training leading to an airplane certification or rating, transition into high performance or G1000 airplanes, for training of tow pilots, and for required refresher training. Other syllabi will be considered for approval based on an identified need. Requests should be routed via Wing CC, Region CC to CAP/DO for approval. Include an outline of the curriculum and vendor name and contact information, if applicable. Written approval from CAP/DO must be received prior to use.

For guidance on proficiency flying consult CAPS 71-4, *AFAM-approved Proficiency Flight Profiles* and CAPS 71-5, *Corporate-approved Proficiency Flight Profiles*.

## Powered Flight Academy

The following syllabus is designed to take a Cadet to pre-solo/solo. Ground school materials, flying handbooks, instructional standards, and operations guidance are provided by individual flight academies based on their local environment. The syllabus is structured into eight events; however, progression is based upon achievement of specified “completion levels” as defined below. An event is not considered complete until the specified level of performance has been demonstrated. The Flight Instruction Log the follows the syllabus content provides an easy way to record task accomplishment and completion level.

### COMPLETION LEVEL KEY

<b>LEVEL 1</b>	Student is able to participate in the maneuver as it is demonstrated by the flight instructor.
<b>LEVEL 2</b>	Student is able to perform the assigned maneuver with explanation, and minimum assistance from the flight instructor.
<b>LEVEL 3</b>	Student is able to perform the assigned maneuver with a minimum of explanation, and with no assistance from the flight instructor.
<b>LEVEL 4</b>	Student is able to perform the assigned maneuver to the level of competence necessary for safe, solo flight, with no explanation or assistance from the flight instructor.

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## LESSON 1 - DUAL FLIGHT

The first lesson consists of familiarization with the airplane and its operating procedures, the sensations of flight, local flight areas, and the use of flight controls and instruments. A one-hour round-trip flight to the practice area or nearby airport is effective in stimulating a new student's interest.

<u>OPERATION</u>	<u>COMPLETION LEVEL</u>	<u>COMMENTS</u>
1. Airplane Familiarization <ul style="list-style-type: none"> <li>• Pre-flight inspection - use checklist</li> <li>• Cockpit familiarization</li> <li>• A/C flight manual</li> <li>• A/C certificates and documents</li> </ul>	Level 1	Approx .5 hr this lesson
2. Engine Start <ul style="list-style-type: none"> <li>• Use of checklist</li> <li>• Safety precautions</li> <li>• Clearing area</li> </ul>	Level 1	
3. Radio Operation <ul style="list-style-type: none"> <li>• Audio panel &amp; switches</li> <li>• Squelch operation</li> </ul>	Level 1	
4. Taxiing <ul style="list-style-type: none"> <li>• Use of throttles &amp; brakes</li> <li>• Control position for windy conditions</li> </ul>	Level 1	
5. Pre-takeoff Check <ul style="list-style-type: none"> <li>• Use checklist</li> </ul>	Level 1	
6. Takeoff. Traffic Pattern & Climb out <ul style="list-style-type: none"> <li>• Area familiarization</li> </ul>	Level 1	Stress good traffic scan right from the start.
7. Flight Controls - Four Fundamentals <ul style="list-style-type: none"> <li>• Control effects &amp; Usage</li> <li>• Stability</li> <li>• Trim</li> <li>• Straight &amp; Level Pitch &amp; bank control</li> </ul>	Level 1	Do by visual reference (VR) & instrument reference (IR). Do not use hood, but show all instrument reactions.  Demonstrate adverse yaw.

- Turns - medium bank (approx. 30 degrees)
- Effects of power (turning tendencies)
- Leveling off from climbs & descents
- Climbs & descents (straight & turning)
- Use of flaps

Correct way first, and then un-coordinated.

8. Traffic Pattern, Approach. Landing & Parking

Level 1

Stress correct landing attitude

9. Post-Flight Discussion

10. Preview Next Lesson

- Review straight & level, turns, climbs & descents. Introduce steep turns. slow-flight & power-off stalls

on each landing.

"Good flight" - ALWAYS!  
Most students can climb, descend & turn at end of lesson 1.

## LESSON 2 - DUAL FLIGHT

At the end of the second lesson, the student should be able to perform the four basic maneuvers (straight & level, turns, climbs, and descents) with minimum assistance and slow-flight and power-off stalls under the direction of the instructor.

<u>OPERATION</u>	<u>COMPLETION LEVEL</u>	<u>COMMENTS</u>
1. Pre-Flight Discussion		Limit all IR training to a time permitting basis.
2. Pre-Flight Inspection	Level 2	
3. Engine Start	Level 2	
4. Radio Operation	Level 2	
5. Taxiing	Level 2	
6. Pre- Takeoff Check	Level 2	
7. Takeoff and Departure <ul style="list-style-type: none"> <li>• Departure &amp; level off procedures</li> </ul>	Level 2	Re-emphasize good traffic scan techniques.
8. Climbing Turns	Level 2	VR & IR to predetermined altitude
9. Straight & Level	Level 2	VR&IR
10. Medium Turns	Level 2	VR&IR
11 Steep Turns	Level 1	Warm-up with 45 degree of bank, then 50 - 60 degrees.
12. Airspeed & Configuration Changes	Level 1	Use this to lead into MCA & stalls.
13 Slow Flight/Minimum Controllable Airspeed (MCA)	Level 1	Without flaps at first, then with different flap settings up to full flaps.
14. Power-Off Stalls	Level 1	Start with recoveries without power, and then show how power reduces the altitude lost.
15. Descents & Gliding Turns	Level 2	
16. Traffic Pattern, Approach, Landing & Parking	Level 2	Stress the correct landing attitude on every landing.
17. Post-Flight Discussion		
18. Preview Next Lesson		

- Review previous maneuvers.
- Introduce approach/landing stalls.

### LESSON 3 - DUAL FLIGHT

At the completion of this lesson, the student should perform the four basic flight maneuvers with a reasonable degree of proficiency, and should accomplish slow-flight and power-off stalls with minimum assistance from the instructor. The student should be responsible for pre-flight inspection, starting procedures, radio communication, taxiing, and parking without direction from the instructor, except in unusual or unfamiliar situations.

<u>OPERATION</u>	<u>COMPLETION LEVEL</u>	<u>COMMENTS</u>
1. Preflight Discussion		Limit all IR training to a time permitting basis.
2. Preflight, Starting Engine, & Taxiing	Level 3	
3. Takeoff & Departure	Level 2	
4. Climbs & Climbing Turns	Level 2	
5. Level-off from Climbs and Descents	Level 3	
6. Straight & Level, Medium-bank Turns	Level 3	
7. Airspeed & Configuration Changes	Level 2	Re-emphasize good traffic scan techniques.
8. Minimum Controllable Airspeed	Level 2	VR & IR to predetermined altitude.
9. Power-off Stalls	Level 2	VR&IR
10. Approach/Landing Stalls	Level 1	VR&IR
11. Descents & Descending Turns	Level 3	Warm-up with 45 degree of bank. then 50 - 60 degrees.
12. Traffic Pattern, Approach, Landing & Parking	Level 2	Use this to lead into MCA & stalls.
13. Post-flight Discussion		Without flaps at first, then with different flap settings up to full flaps.
14. Preview Next Lesson Power-on Stalls		Start with recoveries without power, and then

- Ground Reference Maneuvers
- Landing Approaches
- Forced Landings & Emergencies

show how power reduces the altitude lost.

## LESSON 4 - DUAL FLIGHT

Upon completion of this lesson the student should have the ability to recognize and recover from stalls with little or no assistance from the instructor, fly prescribed patterns by ground references, and execute a traffic pattern and landing approach with the instructor's direction.

<u>OPERATION</u>	<u>COMPLETION LEVEL</u>	<u>COMMENTS</u>
1. Pre-flight Discussion		Emphasize the need for good altitude, heading & airspeed control during all maneuvers.
2. Preflight Inspection, Starting Engine, & Taxiing	Level 3	
3. Takeoff (Normal & X-wind) & Departure	Level 2	
4. Straight & Level, Med. Turns, Climbs, & Descents	Level 3	VR&IR
5. Steep Turns	Level 2	Use 45 degrees of bank.
6. Minimum Controllable Airspeed	Level 3	
7. Approach/Landing Stalls	Level 2	
8. Power-on Stalls	Level 2	Use power-on stalls to intro, takeoff//departure stalls.
9. Takeoff/Departure Stalls	Level 1	Emphasize minimum altitude loss during recovery.
10. Emergency Procedures <ul style="list-style-type: none"> <li>• Forced Landings</li> <li>• System Emergencies</li> </ul>	Level 1	Use memorized, "immediate action" checklist, and printed checklists.
11. Ground Reference Maneuvers <ul style="list-style-type: none"> <li>• Parallel Track (road or section line)</li> <li>• Rectangular Course</li> <li>• S-turns Across a Road</li> </ul>	Level 2	Instructor demo if needed. Show effects of wind on ground track and turn radius.

12. Traffic Pattern, Approach,  
Landing, Parking

Level 2

13. Post-flight Discussion

14. Preview Next Lesson

- Traffic Pattern
- Takeoffs & Landings
- Emergency Procedures

## LESSON 5 - DUAL FLIGHT

This lesson is a review of the flight maneuvers and procedures already covered in preparation for concentrated work on traffic patterns, takeoffs, and landings. Reasonable proficiency in coordination, airspeed control, and ground reference maneuvers should be achieved prior to the completion of this lesson.

<u>OPERATION</u>	<u>COMPLETION LEVEL</u>	<u>COMMENTS</u>
1. Pre-flight Discussion		
2. Pre-flight Inspection, Starting Engine	Level 4	
3. Takeoff (Normal & X-wind) & Departure	Level 3	
4. Straight & Level, Med. Turns, Climbs, Descents	Level 4	VR& IR
5. Steep Turns	Level 3	
6. Minimum Controllable Airspeed	Level 3	VR & IR Relate recovery technique to go-around
7. Approach/Landing Stalls	Level 3	Imminent and full stalls
8. Ground Reference Maneuvers <ul style="list-style-type: none"> <li>• Crabs and Slips</li> </ul>	Level 3	Demonstrate crab then slip. Explain differences and uses.
9. Takeoff/Departure Stalls	Level 2	
10. Emergency Procedures <ul style="list-style-type: none"> <li>• Forced Landings</li> <li>• System Emergencies</li> </ul>	Level 2	Re-emphasize pitch vs. airspeed. Do at various flap and approach power settings.
11. Glides & Descents	Level 4	
12. Traffic Pattern, Approach, & Landing	Level 2	1 or 2 times as time permits.
13. Parking and Shutdown	Level 4	
14. Post-flight Discussion		
15. Preview Next Lesson <ul style="list-style-type: none"> <li>• Takeoffs &amp; Landings (Normal &amp; X-wind)</li> <li>• Accelerated Stalls</li> <li>• Go-Arounds</li> <li>• Wake Turbulence Avoidance</li> </ul>		

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## LESSON 6 - DUAL FLIGHT

- The first half of this lesson is a review of previous flight maneuvers, and accelerated stalls are introduced. Concentrated takeoffs and landings should begin in the second half of this lesson.
- At the completion of this lesson the student should demonstrate a high degree of proficiency in all flight maneuvers, and be able to make takeoffs and landings with minimal assistance from the instructor.

<u>OPERATION</u>	<u>COMPLETION LEVEL</u>	<u>COMMENTS</u>
1. Pre-flight Discussion		Emphasize precision in airspeed & altitude control.
2. Takeoff (Normal & X-wind) & Departure	Level 4	
3. Steep Turns	Level 4	
4. Minimum Controllable Airspeed & Approach/Landing Stalls	Level 4	Do Approach/Landing. Stalls out of MCA.
5. Ground Reference Maneuvers <ul style="list-style-type: none"> <li>• Rectangular Course</li> </ul>	Level 4	Relate rectangular course to the traffic pattern.
6. Takeoff/Departure Stalls	Level 3	Imminent and full stalls.
7. Accelerated Stalls	Level 2	
8. Emergency Procedures <ul style="list-style-type: none"> <li>• Forced Landings</li> </ul>	Level 3	Simulated in the traffic pattern.
9. Traffic Pattern	Level 3	Emphasize communications and traffic vigilance.
10. Wake Turbulence Avoidance	Level 3	
11. Approach & Landing (Normal & X- wind)	Level 3	
12. Go-Arounds & Balked Landing	Level 4	
13. Post-flight Discussion		
14. Preview Next Lesson <ul style="list-style-type: none"> <li>• Slips to landings</li> <li>• Emergency Procedures</li> </ul>		

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## LESSON 7 - DUAL FLIGHT

At the completion of this lesson the student should be able to make unassisted takeoffs and landings (even in light crosswinds), and accurately fly the traffic pattern. A short review of previous flight maneuvers is introduced to break up the monotony of traffic pattern flying.

<u>OPERATION</u>	<u>COMPLETION LEVEL</u>	<u>COMMENTS</u>
1. Pre-flight Discussion		
2. Takeoffs (Normal & X-wind)	Level 4	
3. Approach/Landing Stalls	Level 4	
4. Accelerated Stalls	Level 3	
5. Emergency Procedures	Level 4	
<ul style="list-style-type: none"> <li>• Partial Power Loss</li> <li>• Complete Power Loss</li> <li>• Electrical Failure</li> <li>• Aborted Takeoffs</li> </ul>		
6. Forward Slips to Landing	Level 3	During no-flap landings simulating electrical failure. Beware of student fatigue.
7. Takeoffs & Landings	Level 4	
8. Wake Turbulence Avoidance	Level 4	
9. Post-flight Discussion		Critique this flight with first solo in mind for next lesson.
10. Preview Next Lesson		
<ul style="list-style-type: none"> <li>• Accelerated Stalls</li> <li>• Forward Slips to Landing</li> <li>• Emergency Procedures</li> </ul>		

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## LESSON 8 - DUAL AND SOLO FLIGHT

At the conclusion of the dual portion of this lesson, the student should have achieved a reasonably high degree of proficiency in all flight training maneuvers, and be able to make consistent, safe takeoffs and landings without instructor assistance or direction. Student should also be capable of recovering from poor approaches and bad bounces during landing. He/she should have demonstrated the ability to solve all ordinary problems encountered during local flights.

<u>OPERATION</u>	<u>COMPLETION LEVEL</u>	<u>COMMENTS</u>
1. Pre-flight Discussion		
2. Takeoffs (Normal & X-wind)	Level 4	
3. Accelerated Stalls	Level 4	
4. Emergency Procedures	Level 4	
• Forced Landings		
5. Takeoffs & Landings	Level 4	
6. Forward Slips to Landing	Level 4	During no-flap landings only.
7. SOLO FLIGHT		CONGRATULATIONS!
8. Post-Flight Discussion		Student rests. Instructor critiques student's performance, encouraging continued flight instruction towards private certificate.

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### FLIGHT INSTRUCTION LOG

STUDENT:					INSTRUCTOR:									
Flight #	1	2	3	4	5	6	7	8	9	10	11	12	13	14
LESSON #														
Pre-flight Inspection														
Engine start, Taxi and Run-up														
Radio Operations and Communications														
Takeoff (Normal)														
Crosswind Takeoff														
Climbs and Level-off														
Straight and Level														
Turns (Shallow and Medium)														
Steep Turns (50-60 degrees of bank)														
Descents (Glides) and Level-off														
Slow Flight and Minimum Controllable Airspeed														
Power-off Stalls and Approach/Landing Stalls														
Power-on Stalls and Takeoff/Departure Stalls														
Accelerated Stalls														
Emergency Procedures and Forced Landings														
Ground Reference Maneuvers														
Landings (Normal)														
Crosswind Landings														
Go-Arounds and Balked Landing Recovery														
Slips (side-slips and Forward slips) to Landing														
Use of Flaps														
Basic Instrument Flight														
Parking, Shutdown and Securing Airplane														
Vigilance, collision & wake turbulence avoid														
Judgment														
Use of Checklists														
Flight Time (This Flight)														
Total Flight Time														

Fill in the completion level the student has attained for each maneuver. A lesson is not completed until the required completion level for each maneuver in that lesson has been attained.

Flight #	INSTRUCTORS COMMENTS	OBJECTIVES FOR NEXT FLIGHT *	Instructor's Signature
			Student's Signature
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			

\* Include the number of the lesson to be flown and/or specific maneuvers to be accomplished in continuation of the same lesson.

## Private Pilot

CAP/DO approves use of the Part 61 Private Pilot curricula provided by the commercial off-the-shelf (COTS) vendors listed below:

- Aviation Supplies and Academics, Inc.  
<https://www.asa2fly.com/The-Complete-Private-Pilot-Syllabus-PDF-P4016.aspx>
- Gleim, Aviation  
<https://www.gleimaviation.com/shop/ppsyll/>
- Jeppesen  
<https://ww2.jeppesen.com/training-and-pilot-supplies/courseware/>
- King Schools, Inc.  
<http://www.kingschools.com/cfi/documents/king-schools-private-pilot-syllabus.pdf>
- Rod Machado's Aviation Learning Center  
<https://rodmachado.com/products/rod-machados-free-flight-training-syllabus>
- Sporty's Pilot Shop  
<https://www.sportys.com/pilotshop/sporty-s-private-pilot-training-course-outline-and-syllabus.html>

## Instrument Rating

CAP/DO approves use of the Part 61 Instrument Rating curricula provided by the COTS vendors listed below:

- Aviation Supplies and Academics, Inc.  
<https://www.asa2fly.com/Pilots-Manual-Instrument-Rating-Syllabus-PDF-P3806.aspx>
- Gleim, Aviation  
<https://www.gleimaviation.com/shop/ipsyll/>
- Jeppesen  
<https://ww2.jeppesen.com/training-and-pilot-supplies/courseware/>
- King Schools, Inc.  
[http://www.kingschools.com/cfi/documents/King\\_Instrument\\_Syllabus\\_Complete\\_120722.pdf](http://www.kingschools.com/cfi/documents/King_Instrument_Syllabus_Complete_120722.pdf)
- Sporty's Pilot Shop  
<https://www.sportys.com/pilotshop/learn-to-fly/instrument-rating-course.html>

*Note: Inclusion of links or references to individuals or companies does not constitute an endorsement of any information, product or service you may receive from such sources.*

## Commercial Pilot

CAP/DO approves use of the Part 61 Commercial Pilot curricula provided by the COTS vendors listed below:

- Aviation Supplies and Academics, Inc.  
<https://www.asa2fly.com/Pilots-Manual-Commercial-Pilot-Syllabus-PDF-P3808.aspx>
- Gleim, Aviation  
<https://www.gleimaviation.com/shop/cpsyl/>
- Jeppesen  
<https://ww2.jeppesen.com/training-and-pilot-supplies/courseware/>

## Flight Instructor

CAP/DO approves use of the Part 61 Flight Instructor curricula provided by the COTS vendors listed below:

- Aviation Supplies and Academics, Inc.  
<https://www.asa2fly.com/Pilots-Manual-Flight-Instructor-Syllabus-PDF-P3807.aspx>
- Jeppesen  
<https://ww2.jeppesen.com/training-and-pilot-supplies/courseware/>

## Flight Instructor - Instrument

CAP/DO approves use of the Part 61 Flight Instructor - Instrument curricula provided by the COTS vendors listed below:

- Aviation Supplies and Academics, Inc.  
<https://www.asa2fly.com/Pilots-Manual-Flight-Instructor-Instrument-Syllabus-PDF-P2191.aspx>
- Jeppesen  
<https://ww2.jeppesen.com/training-and-pilot-supplies/courseware/>

*Note: Inclusion of links or references to individuals or companies does not constitute an endorsement of any information, product or service you may receive from such sources.*

# Transition

## High Performance

Previously, CAP required pilots who had not completed primary training in a high-performance (HP) airplane to accrue a minimum of 100 hours total time before they were eligible to take a Form 5 in a CAP HP airplane. As HP airplanes have become predominate in CAP's inventory and Cadet training has emerged as a key mission area, this approach has become untenable. 14 CFR 61.31.(f). establishes general requirements for additional training prior to operating high-performance aircraft. The following paragraphs describe CAP's approach to this additional training in preparation for a CAP Form 5 evaluation.

### Approach

Initial training in HP airplanes shall be accomplished in an actual C182. Use of full flight simulator or flight training device is authorized as a supplement; however, the minimum number of hours required shall be actual flying in a HP airplane.

### Ground Course

General information, specifications and systems of the C182.

Ref: C182 POH

Critical Airspeeds

Operating Limitations, KOEL. Ch 2.

Emergency Procedures. Ch 3

Normal Procedures, Familiarity with Checklists. Ch 4

Performance charts. Ch 5

Weight and Balance. Ch 6

Maintenance Issues

Constant speed prop systems familiarization.

FAA-H-8083-23B Pilot's Handbook of Aeronautical Knowledge, P7-6

Aerodynamics issues, P-factor, torque, slipstream.

FAA-H-8083-23B Pilot's Handbook of Aeronautical Knowledge, P5-30

### Flight Tasks – 4 hours dual instruction (minimum)

Normal and short field takeoffs and landings – 25 at a minimum

Stalls, emphasis on power-on

Systems management, emphasis on constant speed prop, leaning techniques

Emergency Procedures

Bold Face Items

Go-arounds

Completion of these requirements shall be recorded in the pilot's logbook in accordance with 14 CFR 61.31.(f) and a scan of the entry uploaded in Ops Quals to support validation.

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I certify that [First name, MI, Last name], [grade of pilot certificate], [certificate number], has received the required training of § 61.31(f) in a [make and model] high performance airplane. I have determined that [he or she] is proficient in the operation and systems of a high-performance airplane.

/s/ [date] J. J. Jones 987654321

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## Complex

Where required, CAP Regions and/or Wings establish syllabi required to transition pilots into any retractable gear aircraft they may have assigned.

## Turbocharged

Where required, CAP Regions and/or Wings establish syllabi required to transition pilots into any turbocharged aircraft they may have assigned.

## Mountain Flying

Where applicable, CAP Regions and/or Wings establish syllabi required to ensure that both non-mission and mission pilots are competent to operate from airports located in mountainous terrain. This training may be distinct from that used for mission-related training (e.g., Mountain Fury) or the syllabi may be combined to serve both purposes.

## Garmin G1000

The following paragraphs describe CAP's approach to transitioning CAP VFR, Instrument and Instructor pilots into Garmin G1000 airplanes in preparation for a CAP Form 5 evaluation leading to a G1000 endorsement. Completion of CAP G1000 VFR, IFR and IP Transition Training shall be documented on CAPF 70-11, *G1000 Transition Training Record*, which shall be uploaded into Ops Quals to support validation. The VFR Pilot course can be combined with HP transition if the limitations and requirements of both curricula are met. Completion of the HP requirements shall be recorded in the pilot's logbook in accordance with 14 CFR 61.31.(f).

Instructor-led courseware content supporting this syllabus is provided in AXIS. Instructors may use those materials or substitute equivalent materials that address all the required topics. Use of the additional self-paced content and references provided is optional. Independent completion of the ground training content provided in AXIS will not satisfy the requirement for ground instruction. Attendance at instructor-led training is required.

### G1000 VFR

#### *Ground Instruction – VFR Part 1*

**OBJECTIVE:** Through ground instruction, to build the CAP flight crew member's knowledge in correctly and safely using G1000 avionics to aviate, navigate, and communicate under VFR.

**RESOURCE:** CAP G1000 VFR Course, Part 1 on AXIS

<b>Topic</b>	<b>Slides</b>
Welcome & introductions	1
Content, objectives, flight management, components, start-up	2-9
Primary Flight Display (PFD)	10-27
Audio panel	28-34
Multifunction Display (MFD)	35-52
Systems, abnormalities, KOEL	53-71
Review, questions	72-73

#### *Flight Instruction – VFR Part 1 Scenario*

**OBJECTIVE:** Through a scenario-based flight session that includes demonstrations and hands-on experience, to build the CAP flight crew member's knowledge and skills in correctly and safely using G1000

avionics to aviate, navigate, and communicate under VFR. The scenario requires the CAP pilot-in-training (PT) to demonstrate basic knowledge and proficiency in:

- Setting and interpreting flight instruments on the PFD to *aviate* (airspeed, attitude, altitude)
- Creating, storing, retrieving a flight plan + using nav radios to *navigate* (including diversion)
- Setting and using the com radios (including basic CAP functions) to *communicate*

**SCENARIO:** Transport CAP aircraft and crew to and from a CAP mission base in order to participate in an urgent multi-state SAR mission. Events should be accomplished in a flight that includes a 3-leg course using airports within 50 nm of each point, if practicable.

<b>Event</b>
<ul style="list-style-type: none"> <li>• System start</li> <li>• Create, store, retrieve, activate VFR flight plan</li> <li>• Set com &amp; nav frequencies (<i>including CAP radios as appropriate</i>)</li> </ul>
<ul style="list-style-type: none"> <li>• Normal takeoff &amp; departure</li> <li>• Normal cruise checklist (to include leaning)</li> <li>• Navigate toward destination</li> <li>• Use MFD functions to check weather, traffic, terrain, destination info</li> </ul>
<ul style="list-style-type: none"> <li>• Due to “weather” or “mechanical” issue, use NRST to divert</li> <li>• Steep turn to reverse course</li> <li>• Maintain control (<i>aviate</i>); navigate to new airport; communicate as needed</li> </ul>
<ul style="list-style-type: none"> <li>• Return to Base (RTB) – maneuvers (slow flight, stalls, unusual attitudes)</li> </ul>
<ul style="list-style-type: none"> <li>• Normal approach &amp; landing</li> </ul>
<ul style="list-style-type: none"> <li>• Break</li> </ul>
<ul style="list-style-type: none"> <li>• Post-flight debriefing (<i>learner-based grading / collaborative critique</i>)</li> </ul>

### **Ground Instruction – VFR Part 2**

**OBJECTIVE:** Through ground instruction, to build the CAP flight crew member’s knowledge in correctly and safely using G1000 avionics to aviate, navigate, and communicate under VFR.

**RESOURCE:** CAP G1000 VFR Course, Part 2 on AXIS

<b>Topic</b>	<b>Slides</b>
Welcome, review, questions, Part 2 overview	1-4
KAP 140 – overview, altitude/VS functions	5-14
KAP 140 – heading, nav, limitations	15-21
GFC 700 – overview, autopilot, flight director	22-30
GFC 700 – basic operations and limitations	31-39
Review, questions	40-41

### **Flight Instruction – VFR Part 2 Scenario**

**OBJECTIVE:** Through a scenario-based flight session that includes demonstrations and hands-on experience, to build the CAP flight crew member’s knowledge and skills in correctly and safely using G1000 avionics to aviate, navigate, and communicate under VFR. The scenario requires the CAP pilot-in-training (PT) to demonstrate basic knowledge and proficiency in:

- Setting and interpreting instruments and autopilot to *aviate* (airspeed, attitude, altitude)
- Creating, storing, retrieving a flight plan + using nav radios to *navigate* (including diversion)
- Setting and using the com radios (including basic CAP functions) to *communicate*

**SCENARIO:** Transport CAP aircraft and crew to another city to attend a Wing Conference and return. Events should be accomplished in a flight that includes a 3-leg course using airports within 50 nm of each point, if practicable.

<b>Event</b>
<ul style="list-style-type: none"> <li>• System start</li> <li>• Create, store, retrieve, activate VFR flight plan</li> <li>• Set com &amp; nav frequencies (<i>including CAP radios as appropriate</i>)</li> <li>• Ground Trim Demonstration               <ul style="list-style-type: none"> <li>○ Using MET, trim from neutral to full nose up and note time required</li> <li>○ Using manual elevator trim wheel, note number of turns required to retrim</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Normal takeoff &amp; departure</li> <li>• Normal cruise checklist (to include leaning)</li> <li>• Navigate toward destination</li> <li>• Use MFD functions to check weather, traffic, terrain, destination info</li> <li>• Use KAP 140 or GFC 700 in ALT, VS, HDG, NAV modes</li> <li>• Autopilot Override</li> <li>• Autopilot or Electric Trim Failure emergency procedure</li> <li>• Airborne Trim Demonstration               <ul style="list-style-type: none"> <li>○ Manual flight, level, 80-100 KIAS, use MET to trim full nose up</li> <li>○ Maintain a/c control while using manual elevator trim wheel to retrim</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• PFD Failure</li> <li>• AHRS/ADC Failure</li> <li>• Autopilot descent through “clouds” (with “ATC” assistance)</li> </ul>
<ul style="list-style-type: none"> <li>• Return to Base (RTB) – maneuvers (unusual attitudes)</li> </ul>
<ul style="list-style-type: none"> <li>• Normal approach &amp; landing</li> </ul>
<ul style="list-style-type: none"> <li>• Break</li> </ul>
<ul style="list-style-type: none"> <li>• Post-flight debriefing (<i>learner-based grading / collaborative critique</i>)</li> </ul>

## **G1000 IFR**

### *Ground Instruction – IFR Part 1*

**OBJECTIVE:** Through ground instruction, to build the CAP flight crew member’s knowledge in correctly and safely using G1000 avionics to aviate, navigate, and communicate under IFR.

**RESOURCE:** CAP G1000 IFR Course, Part 1 on AXIS

<b>Topic</b>	<b>Slides</b>
Welcome, review, questions, overview	1-4
IFR flight plan – enter, store, retrieve, activate	5-9
IFR flight plan – modify; intercepts	10-20
Instrument Approach Procedures – RNAV(GPS) approaches	21-30
Instrument Approach Procedures – ILS approaches	31-38
Instrument Approach Procedures – missed approach, VTF	39-44
SIDs, STARs, holding	45-51
Review, questions	52-53

### *Flight Instruction – IFR Part 1 Scenario*

**OBJECTIVE:** Through a scenario-based flight session that includes demonstrations and hands-on experience, to build the CAP flight crew member’s knowledge and skills in correctly and safely using G1000 avionics to aviate, navigate, and communicate under IFR. The scenario requires the CAP pilot-in-training (PT) to demonstrate basic knowledge and proficiency in:

- Setting and interpreting flight instruments on the PFD to *aviate* (airspeed, attitude, altitude)
- Creating, storing, retrieving a flight plan + using nav radios to *navigate* (including diversion)
- Setting and using the com radios (including basic CAP functions) to *communicate*

**SCENARIO** Transport CAP aircraft and crew to and from a CAP mission base in order to participate in an urgent multi-state SAR mission. Events should be accomplished in a flight that includes a 3-leg course using airports within 50 nm of each point, if practicable.

<b>Event</b>
<ul style="list-style-type: none"> <li>• System start</li> <li>• Create, store, retrieve, activate IFR flight plan</li> <li>• Set com &amp; nav frequencies (<i>including CAP radios as appropriate</i>)</li> </ul>
<ul style="list-style-type: none"> <li>• Normal takeoff &amp; departure</li> <li>• Normal cruise checklist (to include leaning)</li> <li>• Use MFD functions to check weather, traffic, terrain, destination info</li> <li>• Navigate toward destination (use autopilot as appropriate/as directed)</li> </ul>
<ul style="list-style-type: none"> <li>• Load, activate, &amp; fly IAPs (<i>by hand</i>) <ul style="list-style-type: none"> <li>-- Non-precision w/ procedure turn; GPS (LPV), circling approach, MAP</li> </ul> </li> <li>• -- Holding (published and "random")</li> </ul>
<ul style="list-style-type: none"> <li>• Return to Base (RTB) – maneuvers (<i>as appropriate</i>)</li> </ul>
<ul style="list-style-type: none"> <li>• Instrument approach &amp; normal landing</li> </ul>
<ul style="list-style-type: none"> <li>• Break</li> </ul>
<ul style="list-style-type: none"> <li>• Post-flight debriefing (<i>learner-based grading / collaborative critique</i>)</li> </ul>

### **Ground Instruction – IFR Part 2**

**OBJECTIVE:** Through ground instruction, to build the CAP flight crew member's knowledge in correctly and safely using G1000 avionics to aviate, navigate, and communicate under IFR.

**RESOURCE:** CAP G1000 IFR Course, Part 2 on AXIS

<b>Topic</b>	<b>Slides</b>
Welcome, review, questions, overview	1-5
KAP 140 – modes, IFR functions, limitations	6-23
GFC 700 – modes, IFR functions, flight director, autopilot	24-32
GFC 700 – IAPs (ILS, VOR, LOC)	33-53
GFC 700 – IAPs (back course, RNAV(GPS))	54-63
GFC 700 – vertical navigation (VNV, VPTH), missed approach	64-77
Review, questions	78-79

### **Flight Instruction – IFR Part 2 Scenario**

**OBJECTIVE:** Through a scenario-based flight session that includes demonstrations and hands-on experience, to build the CAP flight crew member's knowledge and skills in correctly and safely using G1000 avionics to aviate, navigate, and communicate under IFR. The scenario requires the CAP pilot-in-training (PT) to demonstrate basic knowledge and proficiency in:

- Setting and interpreting instruments and autopilot to *aviate* (airspeed, attitude, altitude)
- Creating, storing, retrieving a flight plan + using nav radios to *navigate* (including diversion)
- Setting and using the com radios (including basic CAP functions) to *communicate*

**SCENARIO:** Transport CAP aircraft and crew to another city to attend a Wing Conference and return. Events should be accomplished in a flight that includes a 3-leg course using airports within 50 nm of each point, if practicable.

<b>Event</b>
<ul style="list-style-type: none"> <li>• System start</li> <li>• Create, store, retrieve, activate IFR flight plan</li> <li>• Set com &amp; nav frequencies (<i>including CAP radios as appropriate</i>)</li> </ul>
<ul style="list-style-type: none"> <li>• No-flap takeoff &amp; departure</li> <li>• Normal cruise checklist (<i>to include leaning</i>)</li> <li>• Use MFD functions to check weather, traffic, terrain, destination info</li> <li>• Navigate toward destination (<i>use autopilot</i>)</li> <li>• Autopilot Override</li> <li>• Autopilot or Electric Trim Failure emergency procedure</li> </ul>
<ul style="list-style-type: none"> <li>• Load, activate, &amp; fly IAPs (<i>using autopilot</i>) <ul style="list-style-type: none"> <li>-- Non-precision w/ procedure turn; GPS (LPV), circling approach, MAP</li> </ul> </li> </ul>

<b>Event</b>
<ul style="list-style-type: none"> <li>• Holding (published and “random”)</li> <li>• Abnormal situations (IAP with PFD failure; IAP with AHRS/ADC failure)</li> </ul>
<ul style="list-style-type: none"> <li>• Return to Base (RTB) – maneuvers (<i>as appropriate / as directed</i>)</li> </ul>
<ul style="list-style-type: none"> <li>• Instrument approach &amp; no-flap landing</li> </ul>
<ul style="list-style-type: none"> <li>• Break</li> </ul>
<ul style="list-style-type: none"> <li>• Post-flight debriefing (<i>learner-based grading / collaborative critique</i>)</li> </ul>

## **G1000 Instructor**

### *Ground Instruction – Instructor Course*

**OBJECTIVE:** Through ground instruction, to build the CAP flight instructor’s knowledge in correctly and safely teaching G1000 avionics to aviate, navigate, and communicate.

**RESOURCE:** CAP G1000 Instructor Course on AXIS

<b>Topic</b>	<b>Slides</b>
Welcome & introductions	1
Objectives, content, flight management skills	2-4
Objectives & tips for VFR Part 1	5-12
Objective & tips for VFR Part 2	13-15
Objectives & tips for IFR Part 1 and IFR Part 2	16-21
Review, questions	22-24

### *Flight Instruction – Instructor Scenarios*

**OBJECTIVE:** Through a scenario-based flight session that includes demonstrations and hands-on experience, to build the CAP flight instructor’s knowledge and skills in correctly and safely teaching G1000 avionics to aviate, navigate, and communicate.

The scenarios require the CAP instructor-in-training (IT) to demonstrate instructional knowledge and proficiency in:

- Setting and interpreting instruments and autopilot to *aviate* (airspeed, attitude, altitude)
- Creating, storing, retrieving a flight plan + using nav radios to *navigate* (including diversion)
- Setting and using the com radios (including basic CAP functions) to *communicate*
- Autopilot system normal operation, override and emergency procedures

**NOTE:** If practicable, the events of each flight scenario should be conducted during a flight that involves a 3-leg course, using airports located within 50 nm of the next point.

## Tow Pilot

In addition to the requirements of 14 CFR 61.69, CAP requires that prospective tow pilots complete a minimum of 3 flights as the sole manipulator of the controls of an aircraft conducting *actual* glider tows, while under the supervision of a current and qualified *CAP Tow Pilot Trainer*. *At least 10 tows must be completed within the 12 calendar months immediately preceding submission for appointment.* (Requirements in excess of 14 CFR 61.69 are given in *italics*.) Ground and flight instruction of CAP Tow Pilots must address the following requirements, at a minimum:

Discussion items:

- 1) Tow pilot and glider pilot pre-flight coordination
- 2) Aborted take-off under tow
- 3) Partial and full power loss on take-off and climb
- 4) Situations that would require immediate release
- 5) Rope strengths and safety links
- 6) Procedures for coordinating issuance of NOTAMS

Performance items:

- 1) Tow plane and glider signals
- 2) Tow speed and bank limitations
- 3) Radio procedures
- 4) Simulated rope-break
- 5) Climb to a minimum of 2,000' under tow
- 6) Tow plane handling during box-the-wake maneuvers
- 7) Simulated landing with glider in tow
- 8) Proper altitude, pattern and engine management

Once the tow pilot in training has satisfactorily completed the training described above and has met the requirements of 14 CFR 61.69, the CAP Tow Pilot Trainer will make the endorsement required by 14 CFR 61.69(a)(5) in the trainee's logbook.

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I certify that [First name, MI, Last name], [grade of pilot certificate], [certificate number], has accomplished at least three flights in an aircraft while towing a glider.

/s/ [date] J. J. Jones 987654321

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The Tow Pilot trainee is responsible for uploading documentation required to show that the CAPR 70-1 prerequisites shown below have been met (e.g., the Glider IP's endorsement, the Tow Pilot Trainers endorsement, and documentation of number and recency of tows).

### Tow Pilot

*Prior to start of Tow Pilot Training:*

- Minimum 500 hours PIC time, 250 hours of which is in single engine airplanes.
- CAP/SSF on-line Tow Pilot Course

*After Tow Pilot training and all FAR 61.69 tow pilot requirements are met*

- Qualified IAW FAR 61.69 to tow Gliders.
- Must have completed 10 tows of gliders within the preceding 12 calendar months.

# Refresher

## Check Pilot Refresher

Check Pilots are required to retake the National Check Pilot Standardization Course (NCPSC) at least once every four years after their appointment to this role.

## G1000 Refresher Course

CAPR 70-1 requires pilots with a G1000 endorsement to take a G1000 Refresher Course once every 36 months. The starting date for this requirement is 31 Mar 20 or the date of the last G1000 transition training event, whichever is later.

### *On-line Instruction – Refresher*

**OBJECTIVE:** Through **on-line, self-paced** instruction, to apprise CAP flight crew of trends related to G1000 aircraft, new capabilities, and review information and procedures relevant to risk reduction. The content of this course will change over time based on changes to aircraft equipment, system software, CAP's operational experience and program improvements. Completion of the on-line course will fulfill the 36-month requirement within OpsQuals.

**RESOURCE:** Garmin G1000 Refresher Course on AXIS.

### *Flight Instruction – Refresher*

**OBJECTIVE:** Through a scenario-based flight session that includes demonstrations and hands-on experience, to build the CAP flight crew member's knowledge and skills regarding new capabilities. Currently, this profile is only required for pilots who will be flying G1000 NXi aircraft equipped with System Software 2501.08 or later. This profile will be flown with a CAP IP who has previously completed this training or who has received both ground and flight training from Textron as part of their Cessna High Wing G1000 NXi Transition Training Course. This profile will not be flown more than once as an AFAM (A23 or B23) by any pilot. Sortie duration should not exceed 1.5 hours.

**SCENARIO:** Conduct AF-Approved Pilot Proficiency Profile #7, Block 1, in a G1000 NXi aircraft with System Software 2501.08 or later. Recovery via a coupled instrument approach.

<b>Event</b>
<ul style="list-style-type: none"><li>• Complete ESP-specific ground instruction</li><li>• Review G1000 NXi Differences and ESP normal, abnormal and emergency procedures</li><li>• Brief ESP and E-AFCS Overspeed Protection (these modes will not be attempted)</li></ul>
<ul style="list-style-type: none"><li>• During ground operations, Disable and Enable ESP</li><li>• Power-off stall till ESP active</li><li>• Steep turns with ESP inhibited (using CWS and/or AP DISC)</li><li>• Steep turn till ESP active; allow A/P control force to roll the aircraft back to 30 degrees</li><li>• Steep turn till ESP active; override servo input until A/P engages in LVL/LVL mode</li><li>• Nose high till ESP active; allow control force to correct attitude</li><li>• AFCS Under Speed Protection (USP) in altitude critical mode</li><li>• AFCS Under Speed Protection (USP) in non-altitude critical mode</li><li>• Coupled Go-around</li></ul>
<ul style="list-style-type: none"><li>• Post-flight debriefing (<i>learner-based grading / collaborative critique</i>)</li></ul>

## Change Record

Issue Date	Change Summary
8 Jun 20	Added sample endorsements for High Performance and Tow Pilot. Revised briefing and performance requirements for Tow Pilot. Clarified G1000 training requirements and required the use of CAPF 70-11.
25 Aug 20	Removed incorrect expansion of CFI and replaced with flight instructor.