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

Training is the process of using an approved syllabus, taught by a qualified instructor, to develop specific competencies: knowledge, skills and attitudes. This document, CAPS 71-1, *Aircrew Evaluation, Airplane*, provides CAP-approved syllabi for conducting non-mission training for pilots of powered airplanes. The scope of the training described herein ranges from onboarding of new pilots and the conduct of cadet flight academies, to transition into new makes/models, high performance or technologically advanced aircraft, then on to required refresher training events, as well as retraining and remediation of deficiencies. The training described in this document shall be taught/supervised by a qualified CAP Instructor Pilot.

Once training to a specific competency-level has been completed, evaluation is required to determine if the learner can perform the job to specified criteria, in a real-world environment. If so, this results in a qualification and/or endorsement. If not, additional training is required (reference retraining and remediation above). For guidance on the evaluation process consult CAPS 72-5, *Aircrew Evaluation*, and CAPS 72-6, *Aircrew Evaluation Criteria*.

Qualified personnel use *proficiency* events to sustain and increase their competence with a goal of achieving mastery. For guidance on proficiency flying consult CAPS 71-4, *AFAM-approved Proficiency Flight Profiles* and CAPS 71-5, *Corporate-approved Proficiency Flight Profiles*.

Onboarding of New Pilots

New pilots are eligible to complete an onboarding syllabus prior to taking their first Form 5 in a CAP aircraft. Depending on the pilot and available resources, this training might be focused entirely on introducing CAP-unique rules, regulations, information systems, operational and financial procedures (ex: a very experienced high-wing Cessna pilot). On the other-hand, a pilot might require all those elements as well as transition into a Cessna high-wing aircraft with G1000 along with a high-performance endorsement (ex: a low flight time Private pilot who trained in a Piper Archer with conventional instruments.)

Use of CAPP 70-12, *Pilot Onboarding*, Attachments 1 and 2 is encouraged as a means of determining the new pilot's level of qualifications and experience. A CAP IP mentor should use this information to design an appropriate instructional plan within the broad guidance provided here. If onboarding requires more than a single introductory sortie, Wing DO and DOV should be involved in the development and approval of the training plan and there should be early agreement on how many sorties, if any, can be funded. Onboarding training should be flown under a A0 or B0 mission symbol.

Ground Training

Using CAPP 70-12 as a guide, the pilot should become familiar with the information systems/applications, publications, regulations and procedures that guide CAP flight operations. As applicable, the ground training portion of any required transition training found in this document should also be accomplished (e.g., high performance, G1000 VFR). Note: Transition to complex aircraft will not be performed in conjunction with onboarding of a new pilot.

Flight Training

At its most basic, the flight training portion of onboarding will walk through the process described in CAPP 70-12, Part 3, while allowing the pilot an opportunity to practice, in a CAP aircraft, the maneuvers that will be evaluated during their Form 5. Typically, this training is performed in a single sortie (see sortie guidance on following page). In those instances where transition training is required, additional sorties are permitted to address the requirements of each transition syllabus. For example, a new member holding a Private Pilot certificate and requiring high performance and G1000 VFR transition training would be entitled to an introductory sortie, plus at least two additional sorties (G1000 VFR Flight Training requirement), but not less than 4 flying hours in total (high performance transition requirement).

Onboarding Sortie Content

Preflight Planning

- Electronic Flight Bag use
- AMRAD discrepancies and KOEL
- Performing a Preflight Risk Assessment
- Obtaining a Flight Release
- Passenger and Crew Briefing

Preflight

- Airworthiness and the AIF
- Previously undocumented discrepancies

Ground Operations

- Aircraft Ground Handling
- Sterile Cockpit Procedures

Area Work

- Slow flight
- Stalls
- Steep turns
- Ground reference maneuvers
- Autopilot procedures
- Basic instrument maneuvers
- Lost and diversion procedures

Arrival (for instrument rated pilots only)

- Radio navigation
- GPS navigation, WAAS and RAIM
- Holding
- Precision/non-precision approach
- Missed approach

Pattern Work

- Perform a normal takeoff to partial and full flap landings
- Perform a short field takeoff to a short field landing (full stop)
- Perform a soft field takeoff to a soft field landing (full stop)
- Practice proper crosswind takeoff and landing techniques
- Perform a simulated forced landing to a low approach or full stop
- Perform no-flap landing to a full stop
- Execute at least one go-around

Post-flight

- Documenting discrepancies in AMRAD
- Documenting the flight in WMIRS

Return to Flight

There are a variety reasons why a CAP pilot might become unqualified then desire to return to CAP flying. Occasionally, a pilot may become unqualified as a result of an unsatisfactory Form 5 or a suspension for cause or mishap. In these cases, specific deficiencies in the pilot's performance will be identified and a plan for remediation developed. The approved remediation plan is the CAP-approved return-to-flight syllabus for all suspended pilots. These events must be flown under the C 24 mission symbol.

More often, a loss of qualifications results from an event that was beyond the pilot's direct control, such as deployment outside CONUS, a temporarily grounding medical issue, or an operational interruption (e.g., COVID 19). Because these circumstances vary considerably, CAP relies on the familiarity and expertise of those closest to the situation to develop the most suitable approach to the member's return-to-flight. With appropriate approval, these events can be flown under an A 24 or B24 mission symbol.

Previously CAP-qualified pilots should be familiar with CAP-unique rules, regulations, operational procedures, information systems, and financial procedures. Accordingly, it is recommended that these events be structured like a Flight Review, even if one is not required by 14 CFR.

Ground Training

As appropriate, the pilot should avail themselves of one or more of the resources available to pilots, including the AOPA Air Safety Institute's *Return to Flight Proficiency Plan* or NAFI's *Return to Flight Safety Guidance*. The CAP IP will present one-hour of ground training if required by 14 CFR 61.56 or otherwise at their discretion.

Flight Training

Keeping in mind that the objective of return-to-flight training is to prepare the member to pass a Form 5, the sortie profile provided on the following page is provided as general guidance. The CAP IP is authorized to modify the content of the sorties to meet the particular requirements of the pilot, the situation, and the length of inactivity..

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.

Return-to-Flight Sortie Content

Preflight Planning

- Recent changes regulations, procedures and tools

Area Work

- Slow flight
- Stalls
- Steep turns
- Ground reference maneuvers
- Basic instrument maneuvers
- Lost and diversion procedures

Arrival (for instrument rated pilots only)

- Radio navigation
- GPS navigation, WAAS and RAIM
- Autopilot procedures
- Holding
- Precision/non-precision approach
- Missed approach

Pattern Work

- Perform a normal takeoff to partial and full flap landings
- Perform a short field takeoff to a short field landing (full stop)
- Perform a soft field takeoff to a soft field landing (full stop)
- Practice proper crosswind takeoff and landing techniques
- Perform a simulated forced landing to a low approach or full stop
- Perform no-flap landing to a full stop
- Execute at least one go-around

Post-flight

- Debrief and documentation

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

LEVEL 1	Student is able to participate in the maneuver as it is demonstrated by the flight instructor.
LEVEL 2	Student is able to perform the assigned maneuver with explanation, and minimum assistance from the flight instructor.
LEVEL 3	Student is able to perform the assigned maneuver with a minimum of explanation, and with no assistance from the flight instructor.
LEVEL 4	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.

OPERATION	COMPLETION LEVEL	COMMENTS
1. Airplane Familiarization • Pre-flight inspection - use checklist • Cockpit familiarization • A/C flight manual • A/C certificates and documents	Level 1	Approx .5 hr this lesson
2. Engine Start • Use of checklist • Safety precautions • Clearing area	Level 1	
3. Radio Operation • Audio panel & switches • Squelch operation	Level 1	
4. Taxiing • Use of throttles & brakes • Control position for windy conditions	Level 1	
5. Pre-takeoff Check • Use checklist	Level 1	
6. Takeoff. Traffic Pattern & Climb out • Area familiarization	Level 1	Stress good traffic scan right from the start.
7. Flight Controls - Four Fundamentals • Control effects & Usage • Stability • Trim • Straight & Level Pitch & bank control	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 9. Post-Flight Discussion 10. Preview Next Lesson • Review straight & level, turns, climbs & descents. Introduce steep turns. slow-flight & power-off stalls	Level 1	Stress correct landing attitude 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.

OPERATION	COMPLETION LEVEL	COMMENTS
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 • Departure & level off procedures	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.

OPERATION	COMPLETION LEVEL	COMMENTS
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.

OPERATION	COMPLETION LEVEL	COMMENTS
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 • Forced Landings • System Emergencies	Level 1	Use memorized, "immediate action" checklist, and printed checklists.
11. Ground Reference Maneuvers • Parallel Track (road or section line) • Rectangular Course • S-turns Across a Road	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.

OPERATION	COMPLETION LEVEL	COMMENTS
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 • Crabs and Slips	Level 3	Demonstrate crab then slip. Explain differences and uses.
9. Takeoff/Departure Stalls	Level 2	
10. Emergency Procedures • Forced Landings • System Emergencies	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 • Takeoffs & Landings (Normal & X-wind) • Accelerated Stalls • Go-Arounds • Wake Turbulence Avoidance		

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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.

OPERATION	COMPLETION LEVEL	COMMENTS
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 • Rectangular Course	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 • Forced Landings	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 • Slips to landings • Emergency Procedures		

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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.

OPERATION	COMPLETION LEVEL	COMMENTS
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	
• Partial Power Loss		
• Complete Power Loss		
• Electrical Failure		
• Aborted Takeoffs		
6. Forward Slips to Landing	Level 3	During no-flap landings simulating electrical failure.
7. Takeoffs & Landings	Level 4	Beware of student fatigue.
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		
• Accelerated Stalls		
• Forward Slips to Landing		
• Emergency Procedures		

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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.

OPERATION	COMPLETION LEVEL	COMMENTS
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/ppsyl/
- 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/ipsyl/
- 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
- 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.

Other Makes or Models

Training missions are the appropriate vehicle for use when transitioning pilots into another aircraft make or model. These sorties should be flown under an A23 or B23 mission symbol (e.g., "aircraft upgrades"). CAP has not established a formal syllabus for transition into each aircraft make/model as this is highly dependent on a pilot's previous flying experience. As a result, syllabi for transition into other makes/models are at the discretion of the assigned instructor pilot. Ground training resources for each aircraft make/model (e.g., Cessna Aircraft Differences, GA-8 Airvan Familiarization, and MT-7 Maule Familiarization) are provided in AXIS.

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.

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

Technologically Advanced Aircraft

CAP operates hundreds of technologically advanced aircraft (TAA) equipped primarily with Garmin avionics, such as G1000/G1000 NXi, G500 and G3X Touch. In addition, CAP has a few GA8 aircraft equipped with the Aspen EFD1000. Competency in the operation of these systems requires familiarization training, which can be conducted under an A23 or B23 mission symbol. CAP has established a formal syllabus for transition into Garmin's G1000/G1000 NXi aircraft (see the following subparagraphs). Syllabi for transition into other TAA aircraft are at the discretion of the assigned instructor pilot. Ground training resources for each avionics configuration, to include each primary flight display (PFD), multifunction display (MFD), autopilot, and GPS navigator are provided in AXIS.

Garmin G1000/G1000 NXi

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

Topic	***Slides***
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.

Event
• System start • Create, store, retrieve, activate VFR flight plan • Set com & nav frequencies (*including CAP radios as appropriate*)
• Normal takeoff & departure • Normal cruise checklist (to include leaning) • Navigate toward destination • Use MFD functions to check weather, traffic, terrain, destination info
• Due to "weather" or "mechanical" issue, use NRST to divert • Steep turn to reverse course • Maintain control (aviate); navigate to new airport; communicate as needed
• Return to Base (RTB) – maneuvers (slow flight, stalls, unusual attitudes)
• Normal approach & landing
• Break
• Post-flight debriefing (*learner-based grading / collaborative critique*)

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

Topic	***Slides***
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.

Event

• System start
• Create, store, retrieve, activate VFR flight plan
• Set com & nav frequencies (*including CAP radios as appropriate*)
• Ground Trim Demonstration
  o Using MET, trim from neutral to full nose up and note time required
  o Using manual elevator trim wheel, note number of turns required to retrim

• Normal takeoff & departure
• Normal cruise checklist (to include leaning)
• Navigate toward destination
• Use MFD functions to check weather, traffic, terrain, destination info
• Use KAP 140 or GFC 700 in ALT, VS, HDG, NAV modes
• Autopilot Override
• Autopilot or Electric Trim Failure emergency procedure
• Airborne Trim Demonstration
  o Manual flight, level, 80-100 KIAS, use MET to trim full nose up
  o Maintain a/c control while using manual elevator trim wheel to retrim

• PFD Failure • AHRS/ADC Failure • Autopilot descent through “clouds” (with “ATC” assistance)
• Return to Base (RTB) – maneuvers (unusual attitudes)
• Normal approach & landing
• Break
• Post-flight debriefing (*learner-based grading / collaborative critique*)

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

Topic	*Slides*
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 1Scenario

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.

Event
• System start • Create, store, retrieve, activate IFR flight plan • Set com & nav frequencies (*including CAP radios as appropriate*)
• Normal takeoff & departure • Normal cruise checklist (to include leaning) • Use MFD functions to check weather, traffic, terrain, destination info • Navigate toward destination (use autopilot as appropriate/as directed)
• Load, activate, & fly IAPs (*by hand*) -- Non-precision w/ procedure turn; GPS (LPV), circling approach, MAP • -- Holding (published and "random")
• Return to Base (RTB) – maneuvers (*as appropriate*)
• Instrument approach & normal landing
• Break
• Post-flight debriefing (*learner-based grading / collaborative critique*)

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

Topic	***Slides***
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.

Event
• System start • Create, store, retrieve, activate IFR flight plan • Set com & nav frequencies (*including CAP radios as appropriate*)
• No-flap takeoff & departure • Normal cruise checklist (*to include leaning*) • Use MFD functions to check weather, traffic, terrain, destination info • Navigate toward destination (*use autopilot*) • Autopilot Override • Autopilot or Electric Trim Failure emergency procedure
• Load, activate, & fly IAPs (*using autopilot*) -- Non-precision w/ procedure turn; GPS (LPV),circling approach, MAP

Event
• Holding (published and "random") • Abnormal situations (IAP with PFD failure; IAP with AHRS/ADC failure)
• Return to Base (RTB) – maneuvers (*as appropriate / as directed*)
• Instrument approach & no-flap landing
• Break
• Post-flight debriefing (*learner-based grading / collaborative critique*)

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

Topic	*Slides*
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.

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.

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.

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

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.**

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.

Event
• Complete ESP-specific ground instruction • Review G1000 NXi Differences and ESP normal, abnormal and emergency procedures • Brief ESP and E-AFCS Overspeed Protection (these modes will not be attempted)
• During ground operations, Disable and Enable ESP • Power-off stall till ESP active • Steep turns with ESP inhibited (using CWS and/or AP DISC) • Steep turn till ESP active; allow A/P control force to roll the aircraft back to 30 degrees • Steep turn till ESP active; override servo input until A/P engages in LVL/LVL mode • Nose high till ESP active; allow control force to correct attitude • AFCS Under Speed Protection (USP) in altitude critical mode • AFCS Under Speed Protection (USP) in non-altitude critical mode • Coupled Go-around
• Post-flight debriefing (*learner-based grading / collaborative critique*)

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.
1 OCT 20	Added discussion of the boundaries between training and proficiency to the introduction and removed discussion of submitting syllabi for approval. Added guidance for onboarding new pilots, conducting return-to-flight training for pilots with expired or suspended qualifications, and transition into other makes/models or TAA.