



# CAPF 70-5 Training Module 5: Flight Practice

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Group 2 DOV

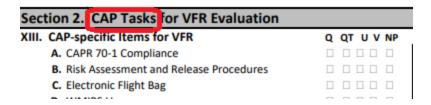


- Form 70-5 Task Criteria
- Tips and Common Errors for Aerial Maneuvers
- Tips and Common Errors for Takeoffs and Landings
- Aircraft Information File (AIF)
- Aircraft Maintenance (CAPR 66-1)
- Mishap Reporting (Separate Module)



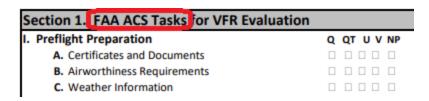
Section 1. FAA ACS Tasks for VFR Evaluation					
I. Preflight Preparation	Q	QT	U	٧	NP
A. Certificates and Documents					
B. Airworthiness Requirements					
C. Weather Information					

Sections are defined as FAA ACS Tasks or...



CAP Tasks





- FAA ACS Tasks are based on Airmen Certification Standards
  - Previously known as Practical Test Standards (PTS)
- Available at the FAA website
  - https://www.faa.gov/training\_testing/acs/
- For example:



FAA-S-ACS-6B (with Change 1)

Private Pilot – Airplane Airman Certification Standards



Section 1. FAA ACS Tasks for VFR Evaluation		
I. Preflight Preparation	Q	QT U V NP
A. Certificates and Documents		
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#### I. Preflight Preparation

#### For example:

Task	B. Airworthiness Requirements
References	14 CFR parts 39, 43, 91; FAA-H-8083-2, FAA-H-8083-25
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with airworthiness requirements, including airplane certificates.
Knowledge	The applicant demonstrates understanding of:
PA.I.B.K1	General airworthiness requirements and compliance for airplanes, including:
PA.I.B.K1a	Certificate location and expiration dates
PA.I.B.K1b	b. Required inspections and airplane logbook documentation
PA.I.B.K1c	c. Airworthiness Directives and Special Airworthiness Information Bulletins
PA.I.B.K1d	d. Purpose and procedure for obtaining a special flight permit
PA.I.B.K2	Pilot-performed preventive maintenance.
PA.I.B.K3	Equipment requirements for day and night VFR flight, to include:
PA.I.B.K3a	a. Flying with inoperative equipment
PA.I.B.K3b	b. Using an approved Minimum Equipment List (MEL)
PA.I.B.K3c	c. Kinds of Operation Equipment List (KOEL)
PA.I.B.K3d	d. Required discrepancy records or placards
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
PA.I.B.R1	Inoperative equipment discovered prior to flight
Skills	The applicant demonstrates the ability to:
PA.I.B.S1	Locate and describe airplane airworthiness and registration information.
PA.I.B.S2	Determine the airplane is airworthy in a scenario given by the evaluator.
PA.I.B.S3	Apply appropriate procedures for operating with inoperative equipment in a scenario given by the evaluator.

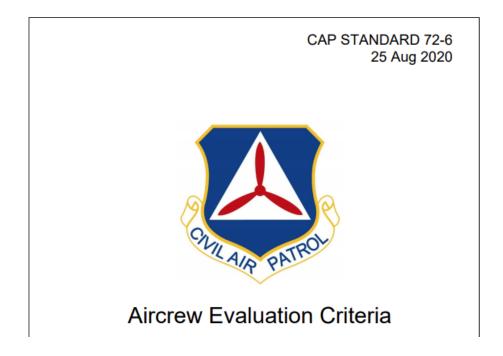


Task	A. Steep Turns
References	FAA-H-8083-2, FAA-H-8083-3; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with steep turns.  Note: See Appendix 7: Aircraft, Equipment, and Operational Requirements & Limitations.
Knowledge	The applicant demonstrates understanding of:
PA.V.A.K1	Purpose of steep turns.
PA.V.A.K2	Aerodynamics associated with steep turns, to include:
PA.V.A.K2a	Coordinated and uncoordinated flight
PA.V.A.K2b	b. Overbanking tendencies
PA.V.A.K2c	c. Maneuvering speed, including the impact of weight changes
PA.V.A.K2d	d. Load factor and accelerated stalls
PA.V.A.K2e	e. Rate and radius of turn
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
PA.V.A.R1	Failure to divide attention between airplane control and orientation.
PA.V.A.R2	Collision hazards, to include aircraft and terrain.
PA.V.A.R3	Low altitude maneuvering including stall, spin, or CFIT.
PA.V.A.R4	Distractions, improper task management, loss of situational awareness, or disorientation.
PA.V.A.R5	Failure to maintain coordinated flight.
Skills	The applicant demonstrates the ability to:
PA.V.A.S1	Clear the area.
PA.V.A.S2	Establish the manufacturer's recommended airspeed; or if one is not available, an airspeed not to exceed V <sub>A</sub> .
PA.V.A.S3	Roll into a coordinated 360° steep turn with approximately a 45° bank.
PA.V.A.S4	Perform the Task in the opposite direction, as specified by evaluator.
PA.V.A.S5	Maintain the entry altitude ±100 feet, airspeed ±10 knots, bank ±5°, and roll out on the entry heading ±10°.



Section 2. CAP Tasks for VFR Evaluation	
XIII. CAP-specific Items for VFR	Q QT U V NP
A. CAPR 70-1 Compliance	
B. Risk Assessment and Release Procedures	
C. Electronic Flight Bag	
B. LLIE ALBOY LL	

• See:





Section 2. CAP Tasks for VFR Evaluation	
XIII. CAP-specific Items for VFR	QQTUVNP
A. CAPR 70-1 Compliance	
B. Risk Assessment and Release Procedures	
C. Electronic Flight Bag	
B 111 110 C 11	

#### • See:

#### **CAP Tasks for VFR Evaluation**

Task ID	Task	Q	QT	U
XIII. A.	CAPR 70-1 Compliance	Complied with CAP rules and	Complied with CAP rules and	Failed to comply with CAP rules
		regulations for flight operations.	regulations, to include	and regulations for flight
			previously rescinded guidance.	operations.
XIII. B.	Risk Assessment and Release	Identified and assessed all	Identified and assessed risks	Failed to identify key risks or
	Procedures	applicable risks, developed and	(with minor exceptions),	consider effective mitigations or
		communicated a mitigation plan	developed and communicated a	communicate plans to the
		to the appropriate flight release	mitigation plan to the	appropriate flight release
		authority.	appropriate flight release	authority.
			authority.	



#### **Maneuvers - Preparation**

- Not focusing on step-wise procedures in this presentation. There are plenty of good references for that, including:
  - The aircraft POH of course (always the primary reference)
  - Group 2's Maneuver Procedure Guide

https://group2ca.cap.gov/media/cms/Group2C182Tandairportsguide 18C9756C51B81.pdf

- Raise the wing to clear turns!
- Clearing the airspace prior and between maneuvers
- Checklist?
  - Pre-Landing Checklist prior to Power-Off (Approach to Landing) Stall
  - Cruise Checklist after recovering from most maneuvers
- Eye's Outside
  - Instruments are only backup for VFR flight maneuvers
- All phases of air work maneuvers must remain above 1500 feet AGL
  - MINIMUM



#### Maneuvering During Slow Flight

- From ACS: Establish and maintain an airspeed at which any further increase in angle of attack, increase in load factor, or reduction in power, would result in a stall warning (e.g., airplane buffet, stall horn, etc.).
  - Stall warning horn may chirp as you establish but should not stay on
- On G1000 aircraft set your heading and altitude bugs.
- Altitude control is a very common problem with this maneuver.
  - This is often caused by poor entry technique
    - Set Power to allow aircraft to slow
    - Retrim aircraft after each change to flaps
    - Once full flaps are deployed and aircraft is nearing target airspeed, expect to add power.
  - Or not adequately looking outside to detect changes in pitch
- AOA is increasing as you enter this maneuver Think RUDDER



- Power Off (Approach to Landing) Stall
  - From ACS:
    - Establish a stabilized descent
    - Transition smoothly from the approach or landing attitude to a pitch attitude that will induce a stall.
  - Private Pilots Recover after Full Stall
  - Commercial Pilots CP specifies recovery as either first indication or full stall.
  - Common problems occur during recovery
    - Failure to establish a positive rate of climb
    - Inappropriate flap retraction (too early and/or too much)
      - First notch retraction after pitch and power is adjusted is good.
    - Just like other high AOA maneuvers Think RUDDER



- Power On (Departure) Stall
  - There is flexibility in the ACS about the "starting" configuration.
    - Consult with your CP
    - I recommend starting close to rotation speed
    - Slowly but steadily increase pitch so that airspeed starts to slow and continue back pressure on yoke.
  - Private Pilots Recover after Full Stall
  - Commercial Pilots CP specifies recovery as either first indication or full stall.
  - Common problems
    - Improper rudder inputs SPIN AWARENESS
      - High power causes slipstream making rudder VERY effective.
      - Lack of coordination is the recipe for a SPIN
  - If things start going badly...
    - Reduce to idle power and let the nose drop
  - If things start going really badly...



## P-A-R-E

Spin recovery technique...

- Power: Power to Idle
- Ailerons: Neutralize Ailerons (They tend to aggravate a spin)
- Rudder: Press the opposite rudder to the direction you are turning
- Elevator: Push to break the stall

Disclaimer: The POH of course takes precedence for all procedures, however you will note that the Cessna flight manuals generally follow the PARE procedure.



SECTION 3 EMERGENCY PROCEDURES

CESSNA MODEL 182T NAV III

#### SPINS

Intentional spins are prohibited in this airplane, but should an inadvertent spin occur, the following recovery procedure should be used:

- 1. RETARD THROTTLE TO IDLE POSITION.
- 2. PLACE AILERONS IN NEUTRAL POSITION.
- APPLY AND HOLD FULL RUDDER OPPOSITE TO THE DIRECTION OF ROTATION.
- 4. JUST AFTER THE RUDDER REACHES THE STOP, MOVE THE CONTROL WHEEL BRISKLY FORWARD FAR ENOUGH TO BREAK THE STALL. Full down elevator may be required at aft center-of-gravity loadings to assure optimum recoveries.
- HOLD THESE CONTROL INPUTS UNTIL ROTATION STOPS. Premature relaxation of the control inputs may extend the recovery.
- AS ROTATION STOPS, NEUTRALIZE RLIDDER, AND MAKE A SMOOTH RECOVERY FROM THE RESULTING DIVE.

#### NOTE

If the rate of the spin makes determining the direction of rotation difficult, the magenta turn rate indicator at the top of the HSI compass card will show the rate and direction of the turn. The HSI compass card will rotate in the opposite direction. Hold opposite rudder to the turn vector direction.



#### Steep Turns

- Stabilize the aircraft at an airspeed at or below Va
- Recommend a small increase in power as you roll through 30 degrees of bank
  - 100-200 RPM for 172
  - 1 or 2" MP for 182/206
  - Remove power on rollout
  - Consider two turns of the trim (nose up)
    - Remove trim on rollout
- There is NO requirement to immediately reverse the direction of the turn
- Practice, practice, practice and then fly it the same way on the evaluation ride
- Keep looking outside and scan for traffic
- If altitude deviations become erratic, consider ending maneuver and ask CP for another try.
- Demonstrating sound ADM is most important!



#### **Takeoffs and Landings**

#### Short Field Takeoff

- Use all available runway
- Power up with brakes applied, check engine instruments
- Again, high AOA maneuver, rudder coordination is imperative!
- In the unlikely event of power loss, expect to perform a SIGNIFICANT push to bring the nose down to prevent a stall.
- After climbing over obstacle, do NOT retract flaps until above recommended speed
- Climbout speed until clearing the obstacle doesn't have to equal Vx

#### Short Field Landing

- Airspeed and Power management are key to success. You will be making minor adjustments all the way down, emphasis on minor.
- Go around if stabilization is poor or you are outside your landing area (remember what we are simulating here)
- Poor technique can lead to a tail strike (or worse).

#### Soft Field Takeoff

Failure to release back pressure as you apply full power can lead to a tailstrike!



#### **Takeoffs and Landings**

#### Power Off Landing

- DO NOT AIM FOR THRESHOLD
- 500-foot markers or 1/4 to 1/3 down the landing surface
- You have lots of tools to lose altitude, almost none to gain
- Maintain sufficient airspeed (to arrest descent) till in ground effect.
- Common error is starting to bleed significant airspeed at 30-50 feet.

#### Go Around

- Remember the 5 C's
  - Cram (Prop Forward!) Full Throttle (or Specified T/O Power)
  - Climb <u>Establish a climb!!</u> Consider GA button for GFC equipped aircraft, then follow the flight director.
  - Clean Retract first notch of flaps ONLY, then wait for positive rate of climb and minimum airspeed requirements
  - Cool Ensure mixture set appropriately, open cowl flaps
  - Confess The radio is the <u>lowest</u> priority



All CAP Aircraft required to have an AIF per CAPR 70-1

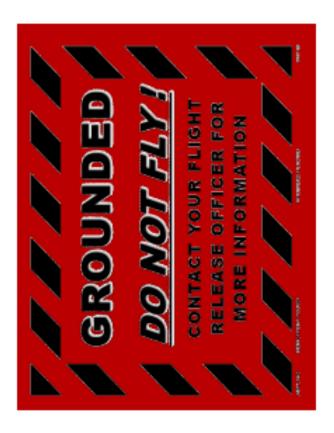
Contents and Format of AIF Specified in CAPS 72-4

Let's look at some of the common items the PIC uses...



#### Front Cover and Inside Front Pocket





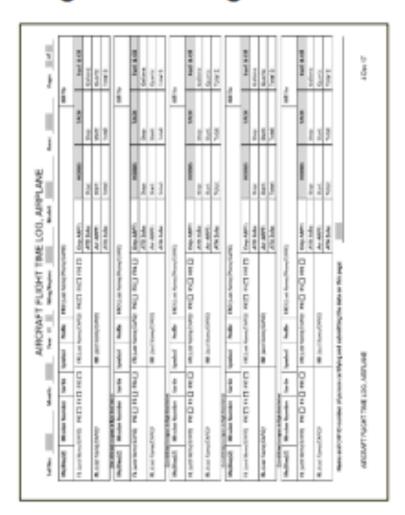


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### Tab 1 – Aircraft Flight Time Log





#### Tab 3 – VOR and Fire Extinguisher



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INSPE	ECTION GUID	ANCE	
and have	offer each calendar t	web. Pibb er sin	ns stud be impedied whee inflially placed is g maintainance offices may perform this in diams shall be recorded.
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# OWN AIR PRINCE

#### **Aircraft Maintenance**

#### CAPR 66-1

- Oil Changes (Mid-Cycle between 100 hour inspections) are done between 40 and 60 hours tach time.
- 100 hour inspections Don't be fooled by the "10 hour over" exemption.
- In CAWG, every 100 hour inspection is also an Annual Inspection

#### Special Restriction:

- 9.4. Restriction for CAP and AFROTC/AFJROTC Cadet Orientation Flights Subsequent to Major Aircraft Maintenance Activity. To ensure an additional margin of safety for orientation flights, CAP or AFROTC/AFJROTC cadet orientation flights will not be flown in aircraft within 10 hours of tachometer time following any of these maintenance actions: (This shall be annotated in the eAircraft Discrepancy system with the tachometer time at which the aircraft was released.)
  - 9.4.1 Engine change
  - 9.4.2 Major engine overhaul
  - 9.4.3 Any maintenance requiring removal or replacement of one or more cylinders
  - 9.4.4 Replacement of one or more magnetos



#### **Aircraft Maintenance**

- Other Items of Note:
- 17.3. Tie-Down Chains. Chains shall not be used directly from aircraft mooring points to an anchor point because of excessive impact loads on wing spars. When chain tie-downs are used, they shall be attached to wire rope anchors...



#### **Aircraft Maintenance**

#### Other Items of Note:

# Attachment 1 Maintenance that May Be Performed by CAP Pilots and Uninsured Mechanics

This list identifies maintenance tasks that may be performed on CAP aircraft by CAP pilots and uninsured A&P mechanics:

- 1. Replacing defective cotter pins only. A licensed FAA mechanic must perform any maintenance operation requiring replacement of safety wire.
- 2. Lubrication not requiring removal of items such as cover plates, cowling and fairings.
- 3. Replenishing hydraulic fluid in hydraulic reservoirs.
- 4. Repairing upholstery and decorative furnishings of the cabin or cockpit interior when such repair does not require disassembly of any operating system and does not interfere with an operating system or affect the primary structure of the aircraft.
- Replacement of bulbs, reflectors and lenses of position or landing lights when removing the cowling is not required.
- 6. Servicing aircraft batteries when opening the cowling is not required.
- Replacement/adjustment of nonstructural standard fasteners incidental to operations.
- Tire inflation.
- 9. All preventive service must be recorded in the aircraft and/or engine log book showing the service/work performed, date it was performed and name and certificate number of the person performing the task whether it be a pilot or mechanic.



### **Homework Assignment for Practice Flights**

- AXIS module "Aircrew Professionalism"
- AXIS module "Aircraft Ground Handling Training" (CAPP 70-10/11)
- 1st sortie with CAP instructor to demo maneuvers
- Practice, practice on your own
- 2nd sortie with CAP instructor to "evaluate" maneuvers



# **CAPF 70-5 Training Module 5**

# Questions?



# **Homework Assignment for Module 6**

- Read Section 7 of C182T POH
  - Airplane and Systems Description