



Aircrew Training,  
Glider

NATIONAL HEADQUARTERS CIVIL AIR PATROL  
Maxwell Air Force Base, Alabama

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## Chapter 1 – General Guidance

This document identifies CAP-approved syllabi for use in training members participating in CAP glider activities, using aero-tow or ground launch; via auto or winch. Other syllabi will be considered for approval based on an identified need. Requests should be routed via Wing CC, Region CC to CAP/DO 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.

Note: Guidance on proficiency flying can be found in CAPS 71-4, *AFAM-approved Proficiency Flight Profiles* and CAPS 71-5, *Corporate-approved Proficiency Flight Profiles*. CAP's approach to CAP Tow Pilot training is outlined in CAPS 71-1, *Aircrew Training, Airplane*, while CAP Tow Pilot Trainer requirements are defined in CAPR 70-1, *CAP Flight Management*.

CAP, in conjunction with the [Soaring Safety Foundation](#), provides on-line training designed to prepare pilots, student pilots and ground support personnel for an effective, safe and rewarding experience. Most of these on-line courses are mandatory for the applicable qualifications and operations; however, anyone can take any of the courses offered on the SSA Website, to include:

- [SSF/CAP Wing Runner Course](#)
- [SSF/CAP Tow Pilot Course](#)

In addition, aircraft specific training that may be helpful to glider pilots, such as the Blanik L-23 Cockpit Familiarization Course, can be found within eServices on the AXIS Learning Management System.

## Chapter 2 – Glider Pilot Training

Although the CAP glider program exists primarily to support cadet orientation flights, flight instruction, and continuation training, the program's continued success and future growth also depend on its ability to attract, train, and retain senior member glider pilots.

Accordingly, CAPR 70-1, *CAP Flight Management*, permits senior member CAP pilots to take flight training towards a glider rating. Non-pilot senior members may also train for a glider airman's certificate when cadets are not using the gliders. Generally, Cadets have priority for glider use, for either Orientation Flights or flight training; however, this must be balanced with the need for additional glider pilots.

### 2.1 Initial Flight Training

In accordance with CAPR 70-1, *CAP Flight Management*, all CAP members are authorized to participate in primary and advanced glider flight training provided by CAP Glider Flight Instructors, toward solo and/or the attainment of an FAA pilot's certificate. Initial glider flight training will be conducted using the *CAP Glider Pilot Flight Training Course* contained in this pamphlet or a comparable training program approved in writing by CAP/DO. The Soaring Society of America Flight Training Handbook or commercially produced glider training products will be used to support this curriculum. All flight training, dual or solo, will be conducted in accordance with 14 CFR 61 and all flight training will be directly supervised by a current CAP Glider Flight Instructor.

### 2.2 Launch Methods

CAP adheres to 14 CFR 61.31(j) requirements regarding additional training on launch methods required for operating a glider. CAP glider pilots are responsible for uploading copies of their logbook endorsements for launch method training into Ops Quals to document accomplishment of 14 CFR 61.31. requirements. Although 14 CFR 61.31 does not distinguish between ground launch methods (auto tow or winch launch), CAP has developed recommended training approaches for each method. Since a CAP glider Form 5 does not include a CAP-unique endorsement for launch method and launch method is not identified in WMIRS sortie planning, the PIC and FRO are responsible for ensuring that the pilot is trained and current in the type of launch operation to be conducted.

### 2.3 Preparation for Form 5 Evaluation

Pilots who are new to the CAP glider program, whether with an existing glider rating or newly rated, should receive familiarization flights from a CAP Glider Instructor Pilot and be recommended for an evaluation. The *CAP Glider Pilot Onboarding* program provided in this pamphlet provides a safe and effective method for conducting introductory training in CAP glider aircraft. Prior to this introductory flight, if the pilot is qualified for the Orientation Pilot endorsement in accordance with CAPR 70-1, they should become familiar with CAPP 60-40, *Cadet Orientation Flight Program Guide*, and practice those maneuvers that must be discussed and demonstrated during the evaluation.

### 2.3 Continuation Flight Training

Proficiency profiles supporting glider proficiency flying can be found in CAPS 71-4 *AFAM-approved Proficiency Profiles* and CAPS 71-5 *Corporate-approved Proficiency Profiles*. CAP Senior Members and Cadets are encouraged to refer to these profiles as a means of structuring their proficiency flying.

## Chapter 3 - Glider Pilot Onboarding

All previously rated glider pilots shall complete the following CAP Glider Pilot Onboarding Training Program with a CAP Glider IP prior to their Initial CAPF 5 Flight Evaluation.

Training Items	Completed to the appropriate FAA PTS (CFIG signature and date)
<b>Ground Training Review</b>	
Aircraft POH Familiarization Operating Limitations – Emergency Procedures – Normal Procedures Performance – Weight & Balance – Glider Systems Assembly/Disassembly	
Glider Pre-flight Inspection	
Tow Line and Tow Ring Inspection	
Glider Ground Handling	
Glider Tie-down Procedures	
CAP Flight Release Procedures	
Use of Checklists	
Other Operational Issues	
CAPP 60-40 Knowledge	
<b>Flight Training Review</b>	
Before Take-off Procedures	
Take-off	
Aero-tow – straight and turns	
Ground Launch – as applicable	
Box the Wake	
Normal Release	
Medium and Steep turns	
Slow Flight	
Stalls – straight and turning	
Pattern entry	
Use of Radio – if installed	
Before Landing Checklist	
Landing and Roll-out	
After Landing Procedures	
<b>Emergency Procedures Review</b>	
Review American Standard Soaring Signals On the ground and coordinate with tow plane to observe in flight	
Pre-mature Termination of Tow – Take-off Roll (verbal only)	
Pre-mature Termination of Tow – below 200' (verbal only)	
Pre-mature Termination of Tow – above 200'	
Glider Can Not Release (verbal only)	
Glider and Tow Plane Can Not Release (verbal only)	

This onboarding program can be completed in a little as two flights. Additional flights should be added to ensure the trainee is flying at or above the appropriate PTS standard prior to conducting a Form 5 evaluation.

## Chapter 4 - Glider Pilot Flight Training Course

### 4.1 Objective

Through the medium of basic to advanced sailplane flight instruction, the student will develop self-confidence, task and self-discipline, and fundamental leadership skills while progressing their aeronautical knowledge and skills on the path to a private glider license.

### 4.2 Ground Training

CAP IPs should use appropriate content selected from the following courses when constructing ground training to meet the requirements of 14 CFR 61.87:

#### Online Course

- SSA (Soaring Society of America) Wing-Runner Course  
<http://www.soaringsafety.org/learning/wingrunner/wingrunner.html>
- Ground Handling  
[https://www.capnhq.gov/CAP.LMS.Web/Course/course\\_start.aspx?c=32](https://www.capnhq.gov/CAP.LMS.Web/Course/course_start.aspx?c=32)
- Basic Risk Management  
[https://www.capnhq.gov/SafetyEducation/ORM\\_Basic\\_Course.pps](https://www.capnhq.gov/SafetyEducation/ORM_Basic_Course.pps)
- AOPA “Know Before You Go”  
<https://www.aopa.org/training-and-safety/online-learning/online-courses/>
- AOPA “Weather Wise: Air Masses and Fronts”  
[https://flash.aopa.org/asf/wxwise\\_fronts/wxwise\\_fronts.cfm](https://flash.aopa.org/asf/wxwise_fronts/wxwise_fronts.cfm)
- AOPA “Do The Right Thing: Decision Making for Pilots”  
<https://www.aopa.org/training-and-safety/online-learning/safety-advisors-and-safety-briefs/do-the-right-thing>

#### Primary Course Text

The primary course text considered during the construction of this syllabus was the *Glider Flight Training Manual* by Thomas Knauff.

#### Additional Course Text

In addition to the Knauff text, students are encouraged to reference FAA Handbook 8083-13A, *Glider Flying Handbook*. An online version of this text can be found at [https://www.faa.gov/regulations\\_policies/handbooks\\_manuals/aircraft/glider\\_handbook/media/faq-h-8083-13a.pdf](https://www.faa.gov/regulations_policies/handbooks_manuals/aircraft/glider_handbook/media/faq-h-8083-13a.pdf)



## **4.3 Flight Training**

CAP Glider Flight Training is organized into seven phases, as described below.

### **PHASE 1**

In the Phase 1 block of instruction, the IP should focus on demonstration and student performance of flight controls and functions, angle of attack, shallow turns, use of trim, adverse yaw, drag, speed control, Checklist usage, and collision avoidance. Specific ground discussion topics in this block should at a minimum include aircraft control and trim and coordinated turns.

### **PHASE 2**

In the Phase 2 block of instruction, students focus on ground handling, aerotow, medium and steep turns, instructor-aided landings, Min controllable airspeed, reduced-G, forward stalls. Ground instruction topics should include a minimum of aerotow concepts and landing techniques.

### **PHASE 3**

In the Phase 3 block of instruction, the students are introduced to takeoff, show proficiency in aerotow, begin thermalling, TLAR (that looks about right) patterns, turning stalls, wake turbulence, flight manuals, and should begin having critical phase of flight checklists memorized. Ground instruction topics should include TLAR patterns, takeoff, stalls, unusual patterns, premature termination of the tow (PT3), radio communications, and off-field landings.

### **PHASE 4**

The Phase 4 block of instruction is designed to prepare the students for more advanced conditions and situations, and includes focus areas of cross-wind takeoff, aerotow, 360/720 steep turns, stalls, TLAR patterns, equipment malfunctions, PT3s, slack line recovery, slips, high-drag configurations. Ground instruction should include discussions of slips, equipment malfunctions, and SSA in-flight signals.

### **PRE-SOLO**

When a student is performing a "Pre-Solo" flight, the student is expected to be completing all elements of flight without IP involvement or interventions. Instructional topics should focus on demonstration of safe aircraft control, student-led in-flight decision making and communication w/o IP inputs.

### **SOLO**

For a student to solo in a Glider, all CAPR 70-1 and 14 CFR Part 61 solo requirements must be met, and appropriate logbook endorsements made.

### **POST-SOLO**

Post-solo training should be structured around the FAA Practical Test Standards and SSA Badge flying (A, B, C, Bronze).

## 4.4 Grading Procedures

### General

This section details the grading procedures on the CAP Glider Training grade card. As soon as practical following the completion of a flight, the IP should debrief and grade the student using the grading scales below.

### Assessing Student Performance

The goal of the grading process is to provide a quantifiable record of a student's performance on specific maneuvers on each flight, not to assign a pass/fail mark or identify failures of the students. It is therefore vital that IPs provide measurable feedback by identifying both areas of strong proficiency and areas needing additional attention when completing the grade card.

### Absolute Grading Scale

When measuring individual maneuver performance, IPs shall judge the student's maneuver performance against the course training standards (CTS) provided in the following section. Maneuvers should be graded on the student's performance and should not consider the student's type and amount of training.

Maneuver Grade	Symbol	Description
Demonstration	<b>D</b>	The instructor <i>demonstrated</i> the maneuver, but the student does not attempt
Unsatisfactory (Optional)	<b>U</b>	The student lacks sufficient knowledge, skill, or ability to perform the operation without instructor intervention for safety of flight
Practiced	<b>P</b>	The student <i>practiced</i> the maneuver in a safe manner, but not to a level required to satisfy 14 CFR 61.87
Solo	<b>S</b>	The student performed the task/maneuver to a level of proficiency that the instructor believes is appropriate to satisfy 14 CFR 61.87 requirements for <i>solo</i> flight.
Excellent (Optional)	<b>E</b>	The Student has performed the task to the FAA Private Glider Practical Test Standard

For each maneuver and task performed during the flight, the IP shall assign one of the above grades. If IPs do not feel comfortable assigning grades on the full 5-point scale (D-U-P-S-E), they may opt to only use the simplified, 3-point scale described in the course text (D-P-S).

## 4.5 Evaluation Standards

### Purpose

These standards outline the general tasks required of graduates of this syllabus. Students should aim to accomplish all tasks as specified.

### General Standards

Aircraft control must be smooth and positive. Momentary deviations are acceptable if corrections are timely and flight safety is not compromised. Consider thermal effects and

other weather conditions when assigning grades, however, exceeding aircraft tolerances, even momentarily, is unacceptable. Procedural knowledge must be in accordance with applicable directives and allow the sortie to be accomplished effectively. Unless otherwise noted, all area maneuvers begin at approximately the no-wind best L/D pitch picture.

### **Tasks**

The table below lists the standards of performance that each required glider task or maneuver should be performed to achieve a grade of "Excellent". Listed with the maneuvers are also the references to the FAA practical test standard and course texts for specific discussion on the tasks/maneuvers.

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TASKS	61.87 (S)	PTS (E)	Knauff (REF A)	FAA-HBK-8083-13A (REF B)	GRADING CRITERIA
PRE-FLIGHT PLANNING	1	I, II	p.50-53	p.6-6	Performs pre-flight inspection using a checklist and can perform a positive control check. Can calculate weight and balance, understands IMSAFE check before flying.
GROUND HANDLING	2,11	II B	p.49	p.6-4/6-5	Handles the glider in a manner that will not result in damage, properly secures controls while moving glider, uses appropriate number of people to move the glider
TAKEOFF – NORMAL	3	IV B	p.56	p.7-3	Established Course of actions, completes prescribed checklist, uses proper signals for takeoff, lifts off at an appropriate airspeed, maintains directional control and proper position and alignment behind the tow plane until the tow plane lifts off.
AEROTOW	12	IV C	p.62	p.7-6	Makes smooth and correct control applications to maintain vertical and lateral positions during high (slightly above the wake) and low (slightly below the wake) tow, maintains tow position during turns. Maintains Tow plane wheels on the Horizon.
SLACK LINE	N/A	IV D	p.87-88	p.7.9	Understands elements related to the causes, hazards, and corrections related to slack lines, recognizes slack line and applies immediate, positive, and smooth corrective action to eliminate slack line in various situations
TOW RELEASE	N/A	IV F	p.66	p.7-8	Maintains High tow position and normal tow line tension, clears the area before releasing, observes the towline to confirm release, makes a coordinated level release and immediate turn away from tow plane.
STRAIGHT GLIDES	15	VII A	p.25-28	p.7-27	Tracks toward a specific landmark at a given airspeed, demonstrates effective use of flaps, spoilers, or dive brakes in relation to pitch, maintains heading $\pm 10$ degrees and specified airspeed $\pm 10$ knots
URNS - HEADING/360/720	4.15	VII B	p.44-47	p.7-28	Enters and maintains an appropriate rate of turn with smooth, proper, and coordinated control applications, maintains desired airspeed $\pm 10$ knots and rolls out on specified heading $\pm 10$ degrees
STEEP TURNS	N/A	VII C	p.44-47	p.7-31	Understands elements related to steep turns, including load factor, effect on stall speed, and overbanking tendency, establishes the recommended entry airspeed, maintains 45-degree bank $\pm 5$ degrees and desired airspeed $\pm 10$ kts, recovers with smooth and coordinated control $\pm 10$ degrees of desired heading
MIN CONTROLLABLE AIRSPEED	N/A	IX A	p.81	p.7-31	Establishes and maintains airspeed at which and further increase in AoA or configuration would result in a stall, adjusts airspeed to avoid stalls in turbulent air or as bank increases, applies smooth, coordinated control inputs, maintains heading $\pm 10$ degrees and desired bank angle $\pm 10$ degrees during turns

TASKS	61.87 (S)	PTS (E)	Knauff (REF A)	FAA-HBK-8083-13A (REF B)	GRADING CRITERIA
FORWARD STALL	14	IX B	p.68	p.7-32 to 34	Understands elements related to stall and recovery and the hazards of stalling during uncoordinated flight, selects entry altitude that will allow maneuver to be completed no lower than 1500 ft. AGL, establishes and maintains pitch attitude that will result in a stall during straight flight, maintains bank angle of up to 15 degrees, recovers using smooth and coordinated control applications throughout
TURNING STALL	14	IX B	p.76	p.7-34	Understands elements related to stall and recovery and the hazards of stalling during uncoordinated flight, selects entry altitude that will allow maneuver to be completed no lower than 1500 ft. AGL, establishes and maintains pitch attitude that will result in a stall during turning flight, maintains bank angle of up to 15 degrees ±10 degrees, recovers using smooth and coordinated control applications throughout
TRAFFIC PATTERN	5	III B	p.89-93	p.7-22,7-23	Follows established traffic pattern procedures, maintains awareness of other traffic in pattern, maintains proper ground track with crosswind corrections, adjusts glidepath and track promptly to compensate for lift, sink, or turbulence in the pattern to cross designated points at appropriate altitudes, make smooth, coordinated turns with no greater than 45 degrees of bank, adjusts flaps, spoilers or dive brakes as appropriate, completes prescribed checklist
NORMAL LANDING	16	IV Q	p.94-116	p.7-22,7-23	Adjusts flaps, spoilers or dive brakes as appropriate, maintains approach speed +10/-5 kts, makes smooth, timely, and positive control application during round-out and touchdown, touches down smoothly within designated landing area with no appreciable drift, with the longitudinal axis aligned with the desired landing path. maintains control during the after-landing roll
POST FLIGHT PROCEEDURES	N/A	XI	N/A	p.6-4	Understands local parking procedures and selects a suitable parking area considering wind, traffic, and nearby persons or property, taxis to parking area, secures glider properly, completes post flight inspection and completes prescribed checklist
CHECKLIST USAGE	N/A	Intro, IV A/Q	p.159,171	p.6-7,6-8	Follows prescribed checklists when appropriate, demonstrates division of attention and proper visual scanning when using checklist. Recall and perform Pre-Takeoff and Pre-landing checklists from memory.
CRM/SRM	N/A	Intro	N/A	N/A	Effectively uses all available resources (human and other) during tasks to operate safely
AERO DECISION MAKING	N/A	Intro	N/A	p.13-9 to 10	Assess critical factors affecting decision making using PAVE Model - Pilot, Aircraft, enVironment, External Pressures, uses analysis to drive decisions

TASKS	61.87 (S)	PTS (E)	Knauff (REF A)	FAA-HBK-8083-13A (REF B)	GRADING CRITERIA
RADIO COMMUNICATIONS	N/A	III A	N/A	N/A	Selects appropriate frequencies to be used, transmits using recommended phraseology, acknowledges radio communications and complies with instructions, uses appropriate procedures for simulated radio communication failure
COLLISION AVOIDANCE	6	N/A	p.41	p.197	Scans for traffic >90 deg in direction of turn, before turnings additionally performs clearing turns, 2 90deg, or 1x 180deg turns scanning for traffic prior to Airwork maneuvers
EMERGENCY PROCEDURES	9	N/A	p.259-	p.8-2	Maintain aircraft control, analyze the situation and take proper action, land as soon as conditions permit/--Attitude, Airspeed, Decision
CROSSWIND T/O AND LANDING	3,16	IV B, IV Q	p.59, p.129-131	p.7-5, 7-25, 7-26	Maintains proper wind-drift and crosswind correction, and directional control
DOWNWIND LANDING	N/A	IV S	p.262-263	p.7-27	Adjusts flaps, spoilers or dive brakes as appropriate, maintains approach speed $\pm 5$ kts, maintains proper directional control during touchdown and roll-out, applies brake smoothly to bring glider to a stop
THERMALLING	18	VA A	p.83-87	p.10-5 to 10-10	Recognizes presence of a thermal, determines direction to turn, exhibits coordinated control and planning when entering and maneuvering to remain in the thermal, applies correct technique to re-enter if lift is lost, remains oriented to ground references, wind, and other aircraft, maintains airspeed
BOXING THE WAKE	N/A	IV E	p.169-170	p.7-10	Maneuvers the glider, while on tow, slightly outside the tow plane's wake in a rectangular, box-like pattern, maintains proper control and coordination. Box Pattern will start from the Center Low Tow position, and move to the left in a clockwise rotation around the wake.
PT3 - NOTE TYPE ON BACK	19	IV G	p.117-125	p.8-10	Exhibits knowledge of aero tow abnormal occurrences, such as tow plane power loss, towline break, or tow/glider release failure, demonstrates simulated PT3 occurrences (400 ft., then, 200 and 500 ft. for Pre-solo)
UNASSISTED TAKEOFF				p 7-3	Stick full deflection to raise lowered wing, brief tow pilot, PIC calls take up slack and takeoff with go, go, go
SIM OFF-FIELD LANDING	N/A	X A	p.248-258	p.8-18	Determines suitable landing area and demonstrates procedures to accomplish an off-airport landing
ASSEMBLY AND DISASSEMBLY	13	II A	N/A	p.6-2	Selects suitable assembly/disassembly area, follows appropriate checklist, uses proper tools, handles components properly, cleans and lubricates parts, performs post-assembly checklist, including positive control check
PERFORMANCE AIRSPEEDS	8	V A&B	p.206	p.7-36-38	Determines minimum sink airspeed for a given situation and maintains selected speed $\pm 5$ kts and desired heading and bank angle $\pm 10$ degrees during turns, determines speed to fly for performance between thermals and maintains $\pm 5$ knots

TASKS	61.87 (S)	PTS (E)	Knauff (REF A)	FAA-HBK-8083-13A (REF B)	GRADING CRITERIA
SPIN/SPIRAL DIVE RECOVERY	15,19	Intro	p.44-47	p.7-28	Recognizes and understands difference between spins and spiral dives, can describe procedures for Spin and spiral dive recovery



NAME (LAST, FIRST, MI)	ASSIGNED GLIDER												Primary Instructor		Secondary Instructor											
	WEIGHT			AGE			Wing			FLIGHT			PRIOR EXPERIENCE													
	Phase 1	Phase 2		Phase 3			Phase 4			Presolo		Solo														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	PS	PS	PC	S	Min		
Syabus Phase																										
Flight Number																										
PRE-FLIGHT PLANNING																										
GROUND HANDLING																										
TAKEOFF - NORMAL																										
AEROTOW																										
SLACK LINE RECOVERY																										
TOW RELEASE																										
STRAIGHT GLIDES																										
TURNS																										
STEEP TURNS																										
MIN CONTROLLABLE AIRSPEED																										
FORWARD STALL																										
TURNING STALL																										
TRAFFIC PATTERN (TLAR)																										
NORMAL LANDING																										
POST FLIGHT PROCEDURES																										
CHECKLIST USAGE																										
CRM/SPRM																										
AERO DECISION MAKING																										
RADIO COMMUNICATIONS																										
COLLISION AVOIDANCE																										
EMERGENCY PROCEDURES																										
SPECIAL SYLLABUS ITEMS																										
CROSSWIND T/O AND LANDING																										
PT3 - NOTE TYPE ON BACK																										
THERMALLING																										
FORWARD SLIPS																										
SPINSPIRAL DIVE RECOVERY																										
BOXING THE WAKE																										
UNASSISTED TAKEOFF																										
NON-STANDARD PATTERNS																										
SIM OFF-FIELD LANDING																										
DOWNWIND LANDING																										
TOW HEIGHT (K ft)																										
AIRCRAFT CALLSIGN																										
FLIGHT DURATION (10ths)																										
DATE																										
INSTRUCTOR NAME																										
CAP GLIDER GRADECARD																										
																										(Front)



## Chapter 5 – Glider Pilot Ground Launch Training (Winch)

This chapter contains recommended syllabi for CAP Glider Pilot Ground Launch training designed to enhance safe and effective operation when conducting winch launch of CAP gliders. CAP does not track the competency levels identified here within Ops Quals. They represent a desired experience level with that launch method when exercising the privileges associated with the specified qualification (pilot, orientation pilot or check pilot).

### 5.1 Competency Levels

The following competency levels are recommended with respect to CAP Glider Pilot operations using winch launch.

- a. Glider Pilot – Winch Launch: A CAP Glider Pilot who has a logbook endorsement for ground launch and has met the requirements of paragraph 5.2 below.
- b. Orientation Glider Pilot –Winch Launch: A CAP Glider Orientation Pilot who has fulfilled 5.1.a., has completed 20 winch launches as PIC, 10 winch launches from the rear seat, to include one 200-foot launch failure.
- c. Glider Check Pilot –Winch Launch: A Check Pilot who has fulfilled 5.1.a and b. and a total of 50 winch launches.

### 5.2 Winch Pilot Requirements

The following training is recommended for CAP pilots using winch launch:

- a. Review Winch Launching guides such as the FAA Glider Flying Handbook or “Ground Launches” by Derek Piggott.
- b. Receive a minimum of one hour of face to face ground instruction on winch launch techniques and procedures from a winch qualified Glider Flight Instructor. Topics should include local procedures and operations, site-specific weather and emergency concerns, impacts of different types of winches.
- c. Observe and critique three winch flights from the ground with a Winch Instructor or winch qualified Glider Flight Instructor, and correctly identify the four launch phases.
- d. Demonstrate mastery of CAP launch process, in-flight signals, and radio communications.
- e. Demonstrate recovery from failures at 10ft, 200-300ft and above 400ft.
- f. A CAP Glider IP will endorse and sign the pilot’s logbook in accordance with 14 CFR 61.31 to reflect the completed training. This endorsement should be uploaded to Ops Quals.

### 5.3 Winch Pilot Training Guidelines

Subjects which must be covered for every CAP Winch Pilot prior to initial certification and endorsement are below.

**Instructional winch launches must include satisfactory demonstration by the Winch Pilot of at least:**

- a. CAP Standardized Pre-Launch and Post-Launch Checklist usage
- b. Winch launch signals
- c. Wind analysis and compensation
- d. Zero-G push-over recovery off-tow

- e. Abort altitude (<10 ft) rope break mastery
- f. Low altitude (200-300 ft) rope break mastery
- g. Pattern altitude (>400 ft) rope break mastery
- h. Glider tow speeds and limitations
- i. Glider climb angles and energy management
- j. Mandatory radio procedures and terminology
- k. Aeronautical Decision Making/Risk Management

**Discussion items must include a minimum of:**

- a. Operator and Winch Pilot pre-flight coordination
- b. Emergency procedures
- c. Rope break and power loss on all stages of take-off and climb
- d. Weak Link type and rating identification
- e. Winch airspeeds and aircraft handling characteristics for specific glider being used
- f. FAA and CAP currency requirements
- g. Local procedures and winch type characteristics
- h. CAP Orientation Flight Program Guide differences and challenges for winch operations
- i. Local frequency usage and airport standard operations

## Chapter 6 - Glider Pilot Ground Launch Training (Auto Tow)

This chapter contains recommended syllabi for CAP Glider Pilot Ground Launch training designed to enhance safe and effective operation when conducting auto launch of CAP gliders. CAP does not track the competency levels identified here within Ops Quals. They represent a desired experience level with that launch method when exercising the privileges associated with the specified qualification (pilot, orientation pilot or check pilot).

### 6.1 Competency Levels

The following competency levels are recommended with respect to CAP Glider Pilot operations using auto launch.

- a. Glider Pilot - Auto Launch: A CAP Glider Pilot who has a logbook endorsement for ground launch and has met the requirements of paragraph 6.2 below.
- b. Orientation Glider Pilot - Auto Launch: A CAP Glider Orientation Pilot who has fulfilled 6.1.a., has completed 20 auto launches as PIC, and 10 auto launches from the rear seat, to include one 200-foot launch failure.
- c. Glider Check Pilot - Auto Launch: A Check Pilot who has fulfilled 6.1.a and b. and a total of 50 auto launches.

### 6.2 Auto Launch Pilot Requirements

The following training is recommended for CAP pilots using auto launch:

- a. Review auto Launching guides such as the FAA Glider Flying Handbook or “Ground Launches” by Derek Piggott.
- b. Receive a minimum of one hour of face to face ground instruction on auto launch techniques and procedures. Topics should include local procedures and operations, site-specific weather and emergency concerns, impacts of different types of vehicles.
- c. Observe and critique three auto launch flights from the ground with an Auto Tow Instructor or auto launch qualified Glider Flight Instructor, and correctly identify the four launch phases
- d. Demonstrate mastery of CAP launch process, in-flight signals, and radio communications.
- e. Demonstrate recovery from failures at 10ft, 200-300ft and above 400ft
- f. A CAP Glider IP will endorse and sign the pilot’s logbook in accordance with 14 CFR 61.31 to reflect the completed training. This endorsement should be uploaded to Ops Quals.

### 6.3 Auto Launch Pilot Training Guidelines

Subjects which must be covered for every CAP Auto Launch Pilot prior to initial certification and endorsement are listed below.

**Instructional auto launches must include satisfactory demonstration by the Glider Pilot of at least:**

- a. CAP Standardized Pre-Launch and Post-Launch Checklist usage
- b. Auto launch signals
- c. Wind analysis and compensation
- d. Zero-G push-over recovery off-tow
- e. Abort altitude (<10 ft) rope break mastery

- f. Low altitude (200-300 ft) rope break mastery
- g. Pattern altitude (>400 ft) rope break mastery
- h. Glider tow speeds and limitations
- i. Glider climb angles and energy management
- j. Mandatory Radio procedures and terminology
- k. Aeronautical Decision Making/Risk Management

**Discussion items must include a minimum of:**

- a. Operator and Glider Pilot pre-flight coordination
- b. Emergency procedures
- c. Rope break and power loss on all stages of take-off and climb
- d. Weak Link type and rating identification
- e. Auto tow airspeeds and aircraft handling characteristics for specific glider being used
- f. FAA and CAP Currency Requirements
- g. Local procedures and winch type characteristics
- h. CAP Orientation Flight Syllabus differences and challenges for Auto Launch Operations
- i. Local Frequency usage and airport standard operations

## Chapter 7 - Winch Operator Training

The following provisions are standardized CAP Winch Launch Instructor and Trainee requirements designed to enhance safe and effective operations of critical towing equipment used to support CAP glider flight activities.

### 7.1 Competency Levels

The following competency levels are defined with respect to CAP winch launch operations. The requirements at each competency level may be waived on a case-by-case basis by the Wing or higher Commander when the organization has taken delivery of a newly assigned winch.

- a. CAP Winch Operator (WO): Member qualified to operate a winch per paragraph 7.2 and is designated by a wing or higher commander.
- b. CAP Winch Instructor (WI): Instructor may be a winch manufacturer representative, a person trained by a manufacturer representative or a person trained by a CAP designated Winch Instructor who has safely completed a minimum of 30 winch launches, has been signed off by the winch manufacturer representative or CAP designated Winch Evaluator, and is designated by a wing or higher commander.
- c. CAP Winch Evaluator (WE): Evaluator may be a winch manufacturer representative, a person trained by a manufacturer representative, or a CAP designated Winch Instructor who has safely completed a minimum of 50 winch launches, has been signed-off by the winch manufacturer representative or a CAP designated Winch Evaluator, and is designated by a wing or higher commander.

### 7.2 Winch Operator Requirements

The following minimum training requirements must be met by CAP members to perform the duties of CAP Winch Operator:

- a. Trainee must be a CAP senior member.
- b. Prior to operational training, Trainees must receive a minimum of 2 hours face to face ground instruction, to include discussion of set up, shut down, maintenance, winch-specific safety concerns, emergency procedures, standard radio calls and winch launch operations. This includes actions on both ends of the winch tow line (winch end and glider end).
- c. Trainees must have at least three glider flights on a similar type of winch.
- d. Training must include both normal and emergency procedures.
- e. While next to the Instructor, Trainees must observe a minimum of 10 winch launches performed by a designated Instructor while being instructed on launch procedures. The 10 winch launches must be specific to the type of winch launch speed control winch or tension control winch.
- f. Trainees must conduct a minimum of 10 winch launches in the operator's seat under the supervision of a designated Instructor. The 10 winch launches must be specific to the type of winch launch speed control winch or tension control winch.
- g. Complete CAP Winch Operator Quiz, when available.
- h. Trainees and operators will maintain documentation displaying winch launch training and recurrent winch launch activity using a logbook or equivalent record.
- i. After the Trainee has satisfactorily completed all training requirements and is able to safely conduct unsupervised winch launches, the Instructor will then endorse and sign the Trainee's logbook or record to reflect the completed training using the verbiage below. The Trainee will then upload the endorsement to Ops Quals and

check “Qualified” in the “Pilot > Prerequisites” section indicating successful completion of winch launch training, for approval by the wing or higher commander.

Trainee’s Name (Last, First MI. / CAPID):  
\_\_\_\_\_

I verify that the Trainee has successfully completed all specified requirements and is competent to perform the duties of Winch Operator on the speed control winch or tension control winch for which they were trained.

### **7.3 Winch Operator Training Guidelines**

**Instructional winch launches must include a minimum of:**

- a. CAP Standardized Pre-Launch and Post-Launch Checklist usage
- b. Winch launch signals
- c. Wind analysis and compensation
- d. Tow speeds and limitations
- e. Mandatory radio procedures and terminology
- f. Simulated rope-break and engine failure procedures at low and high altitudes
- g. Proper RPM and engine management for avoiding overheating and over-tension of ropes
- h. Rope retrieval

**Discussion items must include a minimum of:**

- a. Operator and Glider Pilot pre-flight coordination
- b. Emergency Procedures
- c. Rope break and power loss on all stages of take-off and climb
- d. Use of Guillotine or explosive safety devices
- e. Rope/cable cutting, splicing, repair, and inspection
- f. Weak Link type and rating identification

### **7.4 Winch Operator Currency**

To ensure that Winch Operators maintain a level of proficiency, CAP Winch Operators at every competency level must provide documentation of at least three launches within the preceding 12 months. If a CAP Winch Operator is outside of this currency, he or she will perform a minimum of one launch under the supervision of a CAP Winch Instructor or Winch Operator.



## Chapter 8 – Auto Tow Operator Training

The following provisions are standardized CAP Auto Tow Instructor and Trainee requirements designed to enhance safe and effective operations of critical launching equipment used to support CAP glider flight activities.

*Note: The terms, Auto Tow and Auto Launch are synonymous and may be used interchangeably.*

### 8.1 Competency Levels

The following competency levels are defined with respect to CAP auto tow operations. The requirements at each competency level may be waived on a case-by-case basis by the Wing or higher Commander when a wing or other CAP unit has newly begun employing auto tow as a ground launch method.

- a. CAP Auto Tow Operator (ATO): Member qualified to operate an auto tow vehicle to launch CAP gliders per paragraph 8.2 and designated by a wing or higher commander.
- b. CAP Auto Tow Crew Member (ATC): Senior or Cadet Member qualified to perform duties as Release Operator, as well as Tow Line Retrieval Assistant and has been signed-off by a designated Auto Tow Instructor.
- c. CAP Auto Tow Instructor (ATI): Instructor must be an Auto Tow Operator, trained by a designated Auto Tow Instructor; who has completed a minimum of 30 glider auto launches, has been signed-off by a designated Auto Tow Evaluator, and is designated by a wing or higher commander.
- d. CAP Auto Tow Evaluator (ATE): Evaluator must be an Auto Tow Instructor who has completed a minimum of 50 auto launches, has been signed off by a designated Auto Tow Evaluator, and is designated by a wing or higher commander.

### 8.2 Auto Tow Operator Requirements

The following minimum training requirements must be met by CAP members to perform the duties of CAP Auto Tow Operator, Release Operator and Tow Line Retriever:

- a. Trainee must be a CAP senior member to serve as Auto Tow Operator; cadets may serve as Release Operators and Tow Line Retrieval Assistants.
- b. Trainees must receive face to face ground instruction and a safety briefing, to include an explanation of launch duties, proper procedures and radio calls, safety concerns and emergency procedures, prior to operational training for set up and auto launch operations. This includes actions on both ends of the auto tow line (auto end and glider end).
- c. Trainees must have at least three glider flights involving the type of launch system with which they are training.
- d. Training must include both normal and emergency procedures.
- e. Auto Tow Operator Trainees must have conducted a minimum of five auto launches in the **Auto Launch Driver position**, five auto launches in the **Observer/Radio Operator position**, 2 auto launches in the rearward facing **Release Operator** position, and 2 tow line

retrievals in the **Retrieval Vehicle Driver** position; all under the supervision of an ATI and all to a point where competent performance is achieved. Note: Cadets may be trained & qualified as Auto Tow Crew Members (ATC) who perform duties as **Release Operator**, as well as **Tow Line Retrieval Assistant** (person that gets out and collects the tow line; requires two supervised tow line pickups to be qualified); all under direct supervision of a senior member in the vehicle with the cadets.

- f. Trainees and all auto launch crew members will maintain documentation displaying auto launch training and recurrent auto launch activity, including proper signoffs from qualified ATI or ATE, as required.
- g. After completion of minimum training requirements and when the Auto Tow Instructor is satisfied that the Trainee is competent to safely conduct unsupervised auto launches, the Instructor will then endorse and sign the Trainee's logbook or record to reflect the completed training using the verbiage below. The Trainee will then upload the endorsement to Ops Quals and check "Qualified" in the "Pilot > Prerequisites" section indicating successful completion of auto launch training, for approval by the wing or higher commander.

Trainee's Name (Last, First MI. / CAPID):

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I verify that the Trainee has successfully completed the specified requirements and is competent to perform the duties of Auto Tow Operator for procedures (including emergency procedures), operation and speed control for which they were trained.

### 8.3 Auto Tow Operator Training Guidelines

Subjects which must be covered for every CAP Auto Tow Operator prior to initial certification and endorsement are below.

#### Instructional auto launches must include a minimum of:

- a. CAP Standardized Pre-Launch and Post-Launch Checklist usage
- b. Auto launch signals
- c. Wind analysis and compensation
- d. Tow speeds and limitations
- e. Radio procedures and terminology
- f. Simulated rope-break and engine failure procedures at low and high altitudes
- g. Proper RPM and engine management for avoiding overheating and over-tension of ropes
- h. Rope retrieval

#### Discussion items must include a minimum of:

- a. Operator and glider pilot pre-flight coordination
- b. Emergency procedures
- c. Rope break and power loss on all stages of take-off and climb
- d. Use of emergency release safety devices
- e. Rope/cable cutting, splicing, repair, and inspection
- f. Weak Link type and rating identification

## 8.4 Auto Tow Operator Currency

CAP Auto Tow Operators at every competency level must provide documentation of at least three launches within the preceding 12 months. If an operator is outside of this currency, he or she will perform a minimum of three launches under the supervision of a CAP Auto Tow Instructor or Auto Tow Evaluator.

## 8.5 Duties and Responsibilities of Tow Vehicle Crew Positions

CAP Auto Tow Operations utilize the following Tow Vehicle Crew Positions. These positions are not currently tracked within Ops Quals:

- a. Launch Vehicle Driver: In command of and responsible to ensure the safety of the Tow Vehicle Operation. He or she is specifically trained to operate the launch vehicle during all aspects of the glider launch process. Must be a CAP senior member. The Launch Vehicle Driver operates the launch vehicle and occupies the left hand (driver's seat).
- b. Launch Vehicle Assistant: Assists the Launch Vehicle Driver with situational awareness, traffic awareness and is responsible to make the radio calls during the launch sequence. Must be a CAP senior member. The Launch Vehicle Assistant can also be an Auto Tow Instructor or Evaluator.
- c. Bucket Heads: Consists of 2 trained CAP members (generally Cadets) who work as a team and are responsible for all the ground hooking up and resetting the launch rope. They must be trained on how to operate the emergency release and what to look for if an emergency occurs. It is important that they understand and can perform the required emergency signals for the Launch Vehicle Driver.

## Change Record

Issue Date	Change Summary