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Operations

CAP GLIDER PROGRAM PROCEDURES MANUAL

# Civil Air Patrol

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# Civil Air Patrol Glider Program

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# Civil Air Patrol Glider Program

## Purpose

The primary purpose of the Civil Air Patrol Glider Program is to give as many cadets as possible the opportunity to experience gliding and soaring through orientation flights and glider flight training. At the same time, we also want to make the gliders available to our senior members when the cadets are not using the gliders and provide them the opportunity for upgrade and initial flight training, as well.

## Goals

To reach as many CAP Cadets as possible with the opportunity to participate in the glider program, both orientation flights and flight training, maintain a strong and effective ground and air safety program, promote current, proficient and professional airmanship, and maintain a high level of custodial care and maintenance.

## Glider Program History

Since the 1960s, CAP has had a glider program in place. The early program was mainly focused in the western part of the United States.

In the fall of 1995, the Soaring Society of America (SSA) expressed an interest in partnering with CAP in the promotion of soaring in the United States. SSA had various assets, gliders and personnel, located in their SAA affiliate clubs across the nation while CAP had 25,000 aviation minded young people. SSA realized their membership was aging and the ability to introduce soaring to youth was vital to SSA's future. Initial meetings with SSA leaders and HQ CAP officials determined a relationship would be beneficial to both organizations and a Memorandum of Agreement was signed in February 1996.

In May of 1997, the NEC, HQ CAP/DO and HQ CAP-USAF/LGM purchased a Blanik L-23, a two-place training glider, with corporate funds for the purpose of conducting a test to assure a glider flight activity could be integrated into a normal CAP wing. The Georgia wing was selected due to its close proximity to CAP/HQ and strong SSA support. The test was successful and was briefed to the CAP National Executive Committee in November of 1998.

At that time the CAP glider program, with assistance from existing members and new CAP members from SSA affiliate clubs, experienced explosive growth fulfilling SSA's desire to plant the seed of soaring and CAP's mandated requirement to introduce its cadets to aviation. Over the next few years, with additional purchases and acquisitions of gliders from the United States Air Force Academy, the fleet grew to nearly 60 and glider flight academies became more and more popular.

Over the years, as CAP experienced personnel changes and adverse funding issues, the program waned and utilization decreased. In 2010, the National Executive Committee made the decision to re-energize the program by concentrating gliders in Region Centers of Excellence. The fleet was reduced to 42 gliders and they were concentrated into areas of highest potential, in an effort to maximize both utilization and opportunity for increased cadet participation in both orientation flights and flight training.

The program was a success; significantly increasing the number of flights in FY 11 and reaching an all time record of over 10,000 flights in FY 12.

In early 2013, Civil Air Patrol received 10 Blanik L-23s from the Air Force Academy, giving the program the ability to retire and replace some of the older, high time Schweizers. Currently, all eight regions and 27 wings participate in the program with 46 active gliders. If the momentum continues and funding issues become more favorable, there is a possibility that we can grow even further through a cost-effective, refurbishing program for our older SGS 2-33s. It is, however, predicated on utilization, safety and professionalism.

The SSA has been a long time partner and supporter of the CAP glider program. In late 2012, SSA initiated the CAP Cadet Introductory Membership that not only provides the cadets with a free SSA youth membership, but also a certificate commemorating their first glider flight and an electronic news letter. In 2013, an updated five year Memorandum of Agreement was signed with an automatic renewal. In those areas not served conveniently by a corporate glider, the SSA clubs are excellent venues to allow cadets the opportunity to take their orientation flights.

## Demonstrated Need and Glider Allocations

In 2010, Major General Amy S. Courter, CAP's National Commander, established a minimum flight requirement per corporate glider of 200 flights, which she equated to flying 10 orientation flights per day over 20 days or 20 orientation flights per day over 10 days out of an entire 365 day year. Obviously, flying all year long is not practical in many of our wings. But it does illustrate the fact that a lot of orientation flights can be flown in a relatively short period of time, resulting in not only meeting expectations, but also in having plenty of additional time to increase numbers through flight academies, pilot proficiency, and senior member participation when the cadets aren't flying. Major General Charles L. Carr, Jr. chose to continue the policy. Obviously, there are greater expectations for those wings that can run a year long program.

It is important to emphasize the fact that cadet orientation flights and flight academies, along with senior member support, are the reasons we have the program in the first place. It is the obligation of each region commander and custodial wing to ensure every effort is made to meet and exceed the minimal requirements without nationally accredited academies. Very frankly, with only a small fleet of 48 gliders and 27 out of 52 participating wings, there is an obvious need to successfully manage their program. Failing to do so, will likely result in redistribution or reallocation either within or outside of the region.

While reviewing utilization statistics over the last few years in relation to the number of cadets flown versus their five orientation flights, we find the numbers extremely disappointing when compared to the total of potential flights. It is the responsibility of the custodial wings to do everything they can in their planning to manage a program that will reach the greatest number of available cadets and meet the minimum requirements.

This manual is intended to provide guidance and instruction in developing and maintaining a safe and effective glider program.

# Fleet Size Goal – Utilization Rate – Requirements for Glider Retention

## Fleet Size Goal

**As of FY 14 the national fleet consists of 46 two-place Gliders, including**

1. 12 Schweizer SGS 2- series**,**
2. 30 Blanik L-23
3. 4 Schleicher ASK 21

## CAP Glider Utilization Rate

**Make every effort to manage a minimum of 200 glider flights per aircraft per year, in addition to nationally accredited flight academy flights.**

**Assumptions and Justification**

1. Each cadet under 18 is allowed 5 glider orientation flights as referenced in CAPP 52-7. That should be a substantial part of your numbers.

2. 5 flights a day over 40 days, 10 flights a day over 20 days – 26 weekends (52 days) of glider operations are available in some wings.

3. The majority of flights will occur over a weekend, but can be supplemented in the summer during the week.

4. Custodial wing cadet flight academies and senior member participation when cadets aren't flying can increase numbers.

## Requirements to Retain CAP Glider Assets

1. All glider sorties are to be entered in WMIRS. In the case of orientation flights and academies, multiple sorties can be entered at the same time.

2. In order for WMIRS to push sortie data into the, Aircraft Utilization Glider Reports (aka CAPF 18 info) , all completed sorties, or flights, must be closed and validated by the 15th of the month following the month in which the sortie(s) was flown. Validation prevents cancelled flights from being included.

3. Each Region Center of Excellence or custodial wing will make every effort to meet or exceed the minimum requirement of flights with emphasis on cadet orientation flights and local cadet flight training as well as senior member flight support.

4. Major maintenance or repair issues should be addressed during the off-season or traditional down time whenever possible. Maintenance issues will be a consideration for under-utilization, however, in an effort to reduce the impact on flying as much as possible, glider maintenance and repair must be a high priority and every attempt must be made to ensure all work is completed in a timely manner.

## CAP Glider Minor Maintenance

The only appropriated funding available to the Civil Air Patrol Glider Program is for approved AFAM cadet orientation flights. All other costs to the program, including maintenance is through corporate funds. The National Headquarters staff and the CAP command staff both fully support the program and make every effort to set aside enough funding to cover minor maintenance and repairs, annuals, and support items. Glider trailer repair is accommodated the same as vehicle repair. With such a tight budget, it is extremely important that all of our gliders are treated with the best of care while in the custody of the RCOE or custodial wing.

Minor charges for senior member flights can be a means of income to supplement support items like tow ropes and rings.

Although, we have the Centralized Aircraft Maintenance System (CAMS) in place, many are neither familiar with nor proficient in glider maintenance and repair. It is best to find a glider specialist to do your work. Local SSA or other local Glider clubs can provide recommendations. As opposed to the $1M liability insurance requirement for powered aircraft, National Headquarters only requires $500,000 in liability coverage for glider shops. Copies of a shop's insurance policies or Certificates of Insurance must be on file at NHQ prior to the start of work.

In order to keep the gliders flying during the height of the busy summer season and maximize utilization and opportunity, all gliders must have annual inspections completed before the beginning of the traditional glider season, which would be March or April in many cases. For those with the climate to accommodate all year long activity, annuals should be done at the traditional slow period.

Requests for maintenance must be faxed or emailed to NHQ/LGM on a CAPF 176 with detailed justification for the work requested.

It should be noted that the use of safety wires during the glider rigging process is a vital step in assembly and does not constitute a maintenance action and as such is permitted when used within the parameters of the manufacturer's assembly guidance.

## Program Participation

The Civil Air Patrol Glider Program has been designed primarily for cadet participation through orientation flights and flight training, including solo and glider rated private pilot certificate. Flight training can be on a local level, which would include wing and non-nationally accredited region flight academies made available to cadets within that region, or through nationally accredited flight academies that bring cadets in from all over the Country. In an effort to provide as many qualified cadets as possible with the opportunity to experience most or all of their potential orientation flights, yet recognizing the importance of supporting the nationally accredited academies with gliders, it is incumbent upon each region, along with their custodial wings, to develop and manage their program(s) to ensure that their support does not come at the expense of their local cadets; those located within custodial and adjacent wings. Nationally accredited flight academy criteria can be found later in this manual.

Senior member participation in the program is important and comes on two levels. First, in the overall support and implementation of the program, a successful program requires current and proficient orientation, instructor and check pilots; project officers; and support personnel. Second, as senior members in good standing, they also have an opportunity to receive flight instruction towards a rating upgrade or training for a private pilot airman certificate with a glider rating.

Although, pilot and instructor currency and proficiency in support of the program is a priority and can be done at any time, senior member flight training is only available when the gliders are not being used for the cadets. Historically, with proper program management and planning, there has been little or no conflict. The value of the senior member flight training program is in the potential to increase available pilot support and participation as the program grows.

As mentioned earlier, the glider fleet is limited. In many cases, there will not be a CAP corporate glider available for orientation flights. As an alternative, the use of Soaring Society of America (SSA) affiliate clubs and other commercial glider operations are authorized and encouraged. A and B mission Cadet Orientation Flights are AFAMs and require the PIC to be a qualified CAP orientation pilot. At that point, the glider will be considered member-owned/ furnished and a signed Hold Harmless Agreement (HHA) must be on file with the CAP-USAF region. Additionally, not all CAP glider operations will have a CAP tow plane available. The use of commercial tow vendors, including winch and auto, is also authorized. In that case, if the tow pilot or winch operator is a CAP member and is participating as a senior member, a signed HHA is required. HHAs are not required when a club or other commercial vendor aircraft is not being flown by a CAP member on a CAP activity.

This document prescribes the responsibilities of all Civil Air Patrol (CAP) personnel as applicable to the control and management of CAP gliders and tow planes, and their respective aircrews. Federal Aviation Administration (FAA) requirements are minimum standards; however, in some instances CAP has established higher standards than FAA minimums. The practices and procedures prescribed in these instructions are recommended best practices – any standards listed in CAPR 60-1, *CAP Flight Management,* or other regulations are considered mandatory.

## Organizational Areas of Responsibility

No matter where a CAP glider operation takes place, we must always be good neighbors and uphold CAP's reputation. As many CAP glider operations are collocated with SSA affiliate clubs or commercial operators, it is important to understand the areas of responsibility for all concerned. SSA affiliate clubs, commercial operations and airfields normally have operational rules that pertain to their locale. Wherever operations are collocated, in addition to complying with CAP regulations, CAP personnel will be knowledgeable and comply with all field operating procedures and applicable rules. Prior to joint operations with a glider club or commercial operator, the CAP member in charge of the CAP activity will discuss and be clear on specific areas of responsibilities.

The success of this program depends a great deal on an effective safety culture. It is important to develop and use an Operational Risk Management (ORM) plan that addresses each phase of the operation. For example, prior to any daily launches, the safety officer and/or activity director will complete an ORM analysis to ensure a safe mission. When developing your particular ORM plan, assessments and controls; minimum considerations for glider field operations will include, but are not limited to, current and expected weather conditions and its effects on tow plane and glider performance; available runway and runway conditions; runway obstacles; and status of participants as well as operational conditions on and in the vicinity of the field. Daily inspections of tow planes and gliders for airworthiness and the use of IMSAFE for both tow and glider pilots is essential, as is the proper education and supervision of the wing runners and other support personnel.

Regardless of the location of the glider activity, there is almost always the possibility of airspace conflict. If there is a possibility of conflict, it is up to the CAP project officer or designee to make sure the FAA is aware of CAP glider launches and let them know of the times, location and extent of the daily glider activity, so that they may issue the proper Notices to Airmen (NOTAMs), if appropriate.

## Knowledge Based Courses

There are a number of courses available on the CAP website that are designed to prepare pilots, student pilots and ground support personnel for an effective, safe and rewarding experience. Most of them are mandatory for the area of the operation in which they will be participating; however, anyone can take any of the courses offered. These following courses can be found on the CAP Pilots/Stan/Eval website and include:

- The SSF/CAP Wing Runner Course
- The SSF/CAP Tow Pilot Course
- The L-23 Cockpit Familiarization Course
- National Check Pilot School Course
- Maule Familiarization Course

## Ground and Air Operational Support

There is an inherent pressure associated with glider operations in an attempt to accomplish as many of the orientation or instructional flights as possible. At the beginning of each day's activity, everyone involved in the operation must discuss expectations, understand how they relate to conditions and experience, determine if they are realistic, and make every effort to avoid any additional self-induced pressures. The pressure to perform and not disappoint can be very strong. If not controlled, it can have and has had catastrophic results. Expectations should also be reassessed periodically throughout the day.

All glider activities must have at least one person designated to supervising the safety of all operations. In smaller operations it is usually the project officer or his/her designee. Larger activities must have an assigned safety officer and, if necessary, an alternate.

### Glider Rigging

Most glider rigging is done at the beginning of the traditional glider season following winter storage in trailers. Others may be rigged and derigged at various times during the season for storage, transportation to maintenance facilities, glider academies or other venues. As with checklists for aircraft, following manufacturer's written instructions is extremely important. Since proper assembly is vital to the safe operation of the glider, it is highly recommended that no cadet flight activity is scheduled for the same day a glider is to be test-flown after maintenance or initial rigging, so that there is no additional pressure to rush the assembly and positive control process. Prudent judgment prevails. For accuracy and continuity purposes, all positive control check confirmations must be made verbally between the pilot and those assisting.

**Derigging and Trailer Loading/Unloading**

Derigging gliders is a vulnerable time for loose parts as it is a critical point where parts have been misplaced or lost, resulting in unnecessary frustration and anxiety at the next assembly point. Always take the time necessary to ensure accountability for any removable parts by checking and double checking the completion of each stage of derigging.

Once the glider has been taken apart and is ready for loading, it is imperative that great care be taken when loading and properly securing the glider in or on the trailer. Avoid damaging the glider by making sure enough people are on hand to safely maneuver the glider. The Blanik trailer presents the most challenges. It is highly recommended that the manufacturer's instructions be used as a checklist. See Attachment 1.

**Storage and Tie-down**

Aircraft should be kept in a hangar whenever possible. Aircraft parked in the open shall be tied down at the three approved tie-down points (wings and tail) and properly secured to prevent wind damage. Control locks shall be placed on control surfaces. Aircraft in extended outside storage shall be tied at four points (nose, wings, and tail) with control locks in place. Ropes should be pulled tight and secured with a Tautline Hitch or similar knot that will not allow the rope to loosen under stress. Our gliders are, for the most part, stored outside for an extended period and must comply with the four point tie-down. Refer to the aircraft manual for information on securing control surfaces.

In our effort to reduce and eliminate wind related damage to our gliders, it is vital to follow manufacturer's recommendations, which includes securing and utilizing proper tie-down ropes or straps. Not all ropes are equal. What may look to be a strong, braided rope in a package could be a superficial braid surrounding paper or fabric. Always determine the tensile strength of the rope. Anything less than the recommended tensile strength could and has failed, resulting in severely damaged or totaled gliders.

Nylon or Dacron tie-down ropes are recommended; however, regardless of whether the tie-down is with a rope or strap, the minimum recommended tensile is 4,000 pounds or more, and an absolute minimum of 3,000 pounds. Chains are not recommended due to regulation requirements that prohibit the chains to be directly attached to the ground.

When using auger anchors for temporary tie-down, make sure they are long enough and set deep enough for a strong hold based on soil type, especially in those areas with sandy soil. See CAPR 66-1, Section 15 & Attachment 3 for more tie-down information.



This damage was the result of only a 45 mph wind gust when improper ropes were used.

**Project Officer/Operations Officer/Tow Pilot**
The project officer, operations officer or designee and tow pilot have responsibilities that include:

1) Tow line examined for scuffing and damage at the beginning of every activity and at any time there is reason to suspect damage
2) Tow rings inspected for damage and proper ring is present. Must be familiar with any tow ring or tow hook system limitations
3) Tow hooks, weak links and tow hook releases inspected and tested
4) Runway distance, conditions, obstructions, abort point and weather conditions, and forecasts are acceptable and confirmed for safe flight operations
5) Ensure the glider is equipped with a working radio of some kind
6) Procedures for tow plane radio announcement during takeoff, effective communications between glider and tow plane, and glider communications with the ground crew are established and confirmed

**Safety Officers**
Every activity must have a safety officer. Prior to any daily launches, the safety officer will complete an ORM assessment to ensure a safe mission. Minimum considerations will include current and expected weather conditions and its effects on tow plane and glider performance, available runway and runway conditions, runway obstacles, and status of participants as well as operational conditions, including traffic on and in the vicinity of the field. Runway selection for glider operations will be in compliance with FAA requirements.

**Wing Runners**
It is important that cadets have a positive learning experience; this may be accomplished by providing them with the opportunity to learn the intricacies of a glider operation, while becoming a vital part of the operation. Therefore, cadets are encouraged to successfully complete the SSF/CAP Wing Runner Course and exam before participating in glider orientation flights. To enhance overall safety, cadets and senior members involved in the active staging, launch, and recovery of gliders during glider orientation flights, Glider Flight Academies, or glider flight training must successfully complete the SSF/CAP Wing Runner Course and exam prior to their participation in these activities. Following completion of the SSF/CAP Wing Runner Course and exam, members shall practice what they learned under the supervision of an experienced wing runner or Supervisor of Flying (SoF). An annual review of the course prior to returning to glider flight activity is recommended.

As wing runners and support personnel, a safe operation mandates that someone is designated as a supervisor for each flight. The supervisor is to ensure that proper procedure and technique is employed for every launch and recovery.

**Wing Runner Team**
Wing Runner Teams are essential to the success and safety of the daily operation, whether as an experienced team or as trainees under expert supervision. Wing runner teams must:

1) Designate launch and recovery duties and responsibilities for each member of the team for each active glider.
2) Review signals with the tow pilot, glider pilot and within the team.
3) Ensure the glider is situated properly for conditions and the canopy is protected.

4) Assist with crew entry, as necessary.

5) Assist the pilot with control checks.

6) Confirm radio communication between the glider and tow plane.

7) Ensure proper positioning of signalers and wing runner.

8) Prepare tow rope for launch, check connection and releases. (Tow ropes should never be picked up with the bare hand. Make sure adequate gloves or tools are available.)

9) Designate a spotter to announce approaching glider and landing phases.

10) Recover the glider, as necessary, and prepare for the next launch.

11) Periodically inspect the tow rope for damage.

**Ground Support Equipment**
When setting up support equipment, it is important that at least one person is designated to:

1) Ensure staging areas, shelters, equipment and supplies are deployed at a safe and secure distance from the operations area.

2) Include adequate seating arrangements, sun screen and water.

3) Monitor participant hydration.

4) Set up and maintain radio communications, as required.

5) Adhere to ORM for operational and runway conditions when deploying more than one glider.

**Launch/Recovery Operations**
Launching and recovering gliders can be both a fast paced and demanding operation. All those involved must remain alert at all times.

When launching one or more gliders, it is extremely important, before going forward, for the operations and safety personnel to perform and document a detailed and thorough ORM analysis and assessment of the proposed launch procedure to ensure a safe operational environment for gliders, personnel and support equipment. In order to avoid conflict with landing gliders, the practice of staging them on the same active runway during flight operations, as a means of increasing launch efficiency, is prohibited.

Planning and actions will be taken by event staff members to prevent a situation where an obstruction would be present on the active runway when a cadet is at the controls of a glider on final approach and throughout landing.

There are times when local airports will accommodate a glider operation by allowing the use of taxiways or by preparing a grassy area to launch and recover gliders and/or tow planes. Tow planes may land on either paved or grass active runways or on a temporarily designated and properly cared for grass strip. ORM principles apply.

In an effort to reduce potential damage to the tow rope, it is highly recommended to land on a grass runway or strip, or drop the tow rope in a grassy area at least 50’ laterally from the nearest person. When a rope drop is imminent, ground operations staff will ensure all participants remain on the opposite side of the runway adjacent to the drop area. If the landing has to be on a hard surface, the tow rope must be thoroughly examined for damage before further use. Tow planes will not fly directly over an active staging area with the tow rope attached.

**CAP Soaring Activity Uniforms**
Except in those areas with a climate that can accommodate a yearlong glider activity, most programs not only operate during the spring and fall season, but also during the summer with its long days and the potential for both high temperatures and high humidity. With the heating effect of the glider Plexiglas canopy and the oven-like nature of the tow plane cockpit, common sense and ORM dictates the need to stay as cool as possible and hydrate often.

A soaring activity, to include the tow pilot, demands that comfortable, loose-fitting, nonrestrictive clothing be worn. Personnel will wear clothing that is appropriate for the conditions in which they are operating, identifies them as CAP members, and reflects CAP in a positive manner. A tee-shirt or polo, such as a CAP designed wing, unit or activity shirt with a pair of shorts/long pants and tennis shoes are sufficient. It is recommended that shorts be either khaki-type or dark blue and the long pants either khaki-type or medium gray.

Due to the greenhouse effect of the glider canopy, the use of sun screen and a full-brimmed hat (boony or bucket hat), that will also protect the ears and back of the neck, is highly encouraged; baseball-style caps may be worn, however, styles without buttons on the top are recommended. For numerous reasons, including space restrictions in most glider rudder pedal areas, the wearing of boots of any kind is prohibited.

## CAP Glider Training and Proficiency

CAP has developed a training plan to assist CAP glider orientation pilots, instructors and students in initial and recurring training requirements (See Attachment 2).

## Cadet

CAP cadets may participate in the glider program through various methods, including orientation flights and instruction. The Glider Orientation Program specified in CAPP 52-7, however, prohibits flight training and it will not be addressed in this section.

### Initial Flight Training

Cadets are authorized, in accordance with CAPR 60-1, *CAP Flight Management*, to participate in primary and advanced flight training in a glider from authorized CAP Glider Flight Instructors. Flight training may lead to solo and the attainment of an FAA pilot's certificate. Cadets will use the *CAP Glider Training Plan* (See Attachment 2) or a comparable NHQ/DO approved training plan. The *CAP Glider Training Plan* (See Attachment 2) provides an Initial Glider Check Out Program, a Glider Proficiency Program Syllabus, and a Glider Flight Training Course (See Attachment 2, tab 3) with nine lessons for glider flight training. The Soaring Society of America Flight Training Handbook or commercially produced glider training products will be used during training. All flight training, dual or solo, will be conducted in accordance with FAR Part 61 and all flight training will be directly supervised by a current CAP Glider Flight Instructor.

### CAPF 5 Evaluation

Except as noted below, a minimum of one landing is required to complete the evaluation (more landings may be required at the discretion of the check pilot). If the pilot taking the evaluation has not accomplished and logged a rope break in the preceding 12 months, the CAPF 5 evaluation must include a simulated low level rope break (above 200 feet AGL). If a rope break is completed, at least one other landing is required as part of the evaluation.

### Recurring Flight Training

CAP cadet pilots are encouraged to use the Glider Proficiency Program Syllabus, when appropriate, to aid in maintaining proficiency (See Attachment 2, tab 2). Cadets with CAP Glider Pilot ratings are prohibited by CAPR 60-1 from flying other cadets.

## Senior Member

The CAP glider program exists primarily for cadets; however, competent senior member glider orientation, instructor and check pilots are essential for continued success, growth and safety of the program. They must have the opportunity to remain current and proficient.

Additionally, in accordance with CAPR 60-1, *CAP Flight Management*, senior member CAP pilots are encouraged to take flight training towards a glider rating and non-pilot senior members may train for a glider airman's certificate, when cadets are not using the gliders. Senior members are a great resource for the future and more senior member pilots can lead to an increase in support.

**Initial Flight Training**

Senior Members are authorized, in accordance with CAPR 60-1, to participate in flight training in a glider from authorized CAP Glider Flight Instructors toward solo and the attainment of an FAA pilot's certificate or transitional rating. The CAP Initial Glider Check Out Program provides a safe and effective method for initial checkout in glider aircraft (See Attachment 2, tab 1). All flight training, dual or solo, will be conducted in accordance with FAR Part 61 and all flight training will be directly supervised by a current CAP Glider Flight Instructor. The *CAP Glider Flight Training Plan* (See Attachment 2) provides a syllabus and is available for flight training as are a number of other commercial products, including the Soaring Society of America Flight Training Handbook. For senior members, the CAP Glider Flight Training Course Outline is recommended and provided as a guide for training purposes (See Attachment 2, tab 3). The required minimum of 30 flights prior to solo associated with cadet glider instruction does not apply to senior members.

**CAPF 5 Evaluation**

Each senior member CAP pilot new to the glider program, whether with an existing glider rating or newly rated, is required to receive familiarization flights with a CAP Glider Instructor Pilot and be recommended for an evaluation. Prior to the familiarization flight, if the pilot is qualified for the orientation pilot endorsement in accordance with CAPR 60-1, the pilot must be familiar with CAPP 52-7, *Cadet Orientation Flight Syllabus*, and practice those maneuvers that must be discussed and demonstrated during the evaluation. An initial CAPF 5 evaluation by a glider check pilot other than the instructor pilot will be required for each CAP glider to be flown.

Except as noted below, a minimum of one landing is required to complete the evaluation (more landings may be required at the discretion of the check pilot). If the pilot taking the evaluation has not accomplished and logged a rope break in the preceding 12 months, the CAPF 5 evaluation must include a simulated low level rope break (above 200 feet AGL). If a rope break is completed at least one other landing is required as part of the evaluation.

**Recurring Flight Training**

CAP senior member glider pilots are encouraged to use the Glider Proficiency Program Syllabus, when appropriate, to aid in maintaining proficiency (See Attachment 2, tab 2).

## CAP Glider Launch Operations

CAP gliders are launched either by aero tow or ground launch. Ground launch can include winch launches and auto tows.

### Aero Tows

CAP utilizes CAP corporate tow planes, member-owned/furnished tow planes, or commercial tow plane vendors to provide aero tow launches. The use of member-owned or furnished aircraft must have a signed Hold Harmless Agreement (HHA) on file with the CAP-USAF region.

CAP corporate tow aircraft consist of Cessna 182, Cessna 172 (180 hp), and Maule MT-7-235 (235 hp) aircraft. Due to a number of factors, the use of C182T G1000 model is prohibited from towing.

CAP and the Soaring Safety Foundation (SSF) partnered to develop the world's first and only tow pilot course on the Internet. This course has and continues to provide thorough and standardized instruction for tow pilots worldwide. The course is mandatory for CAP tow pilots and has been adopted as mandatory study by several SSA affiliate glider clubs as well as glider clubs in Japan, Egypt, and Brazil. SSF Tow Pilot Course: http://www.soaringsafety.org/learning/towpilot/towpilot.html

When CAP members fly SSA affiliate club or other commercial operation tow aircraft while participating as a CAP member in accordance with CAPR 60-1, *CAP Flight Management*, the aircraft is considered a member/furnished aircraft and requires the HHA. The flight may be a corporate mission, or when towing for a cadet orientation or flight training mission with the proper approval, could be an Air Force authorized mission (AFAM) with FECA and FTCA protection.

Many of our operations are located at or near SSA affiliate clubs or other commercial glider operations. The club or operator may act as a vendor supplying the tow plane. In that case, CAP is responsible for the CAP corporate glider and the tow plane operator is responsible for the tow plane. Again, if the tow plane is being operated by a CAP member participating as a CAP member, it is considered member furnished. Except for those associated with SSA affiliated clubs, the use of commercial tow vendors requires advance approval from NHQ/LG. Keep in mind NHQ/LG may require additional information; for example, minimum insurance coverage and documentation.

### Tow Pilots

Towing gliders is an exciting and rewarding, but demanding experience that must be taken very seriously. One must stay alert, on constant guard against potential upset and/or stall, and ready to release in a heartbeat. Towing a glider requires full concentration and attention to detail, as well as the need to feel the forces on the airplane and the need to maintain an acute situational awareness. It is important to recognize that the energy output due to concentration and the physical requirements of flying the airplane within its operating envelope will take its toll as the day wears on. Periodic rest and hydration must be built into the planning and execution of the operation. The project or operations officer, safety supervisor, or designee should periodically check on the tow pilot to ensure they are able to maintain a satisfactory level of flight safety.

If more than one pilot is participating, they should alternate duties if possible. If only one pilot, scheduling should adjust the number of flights accordingly. Generally, the flight and duty day should be significantly shorter due to the mental and physical effects of towing.

**FAA Tow Pilot Requirements (CFR, part 61, section 61.69)**

You must:

1) Hold at least a private pilot certificate with the appropriate category rating;

2) Have logged a minimum of 100 hours as pilot in command in the same category aircraft used for towing;

3)Have a logbook endorsement from an authorized instructor certifying you have received ground and flight training in gliders or unpowered ultralight vehicles, and is proficient in the areas listed in part 61.69(a)(3)(i)(ii)(iii) and (iv);

4) Have a logbook endorsement from a pilot that already meets the requirements of part 61.69 (c) and (d), who has accompanied the pilot on three flights which has certified them to have accomplished at least three flights in an aircraft while towing a glider or unpowered ultralight vehicle, or while simulating towing flight procedures; and

5) In the preceding 24 months: have performed three actual or simulated tows accompanied by a qualified pilot; or have been towed for three flights, as pilot in command in a glider or in an unpowered ultralight vehicle.

**CAP Tow Pilot Requirements (CAPR 60-1)**

CAP Tow Pilot must:

1) Be a qualified CAP VFR pilot at least 21 years of age.

2) Be qualified and documented in accordance with 14 CFR Part 61.69 to tow gliders.

3) Have a minimum 500 hours PIC time, 250 hours of which is in single-engine airplanes.

4) Satisfactorily completed the SSF/CAP online Tow Pilot Course prior to initial appointment and every four years thereafter.

5) Have completed a minimum of 10 tows of gliders within the preceding 12 calendar months (no simulated tows will be included in the 10 tow requirement) and three glider flights, prior to the initial rating, if not a glider pilot.

6) Be appointed in OPS Quals as a CAP tow pilot by the wing or region commander, National Commander, or their designee.

**Tow Pilot Trainer Guidelines**

For initial qualification or later re-currency, pilots may complete the minimum tows in CAP aircraft under the instruction of another current CAP tow pilot. Once the trainee tow pilot has satisfactorily completed the tow required, the tow pilot trainer will sign-off the trainee and enter the information into Ops Quals. Ops Quals documentation will include logbook endorsements by both the tow pilot trainer and a glider instructor.

**Instructional tows must include a minimum of:**

1) Tow plane and glider signals
2) Tow speed 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 and engine management for avoiding overheating and shock cooling during climb and following release

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

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

The tow pilot trainer does not have to be a CFI, CAP instructor pilot or CAP check pilot/examiner and a CAPF 5 is not required. Tow pilot trainers will have a minimum of 50 tows of experience, be FAA tow current within the past 12 months, and be designated by the wing or higher commander in Ops Quals.

**Ground Launches**

CAP utilizes two methods of ground launch. Auto tows and winch launches have both been successfully utilized in several wings and regions. In addition to some commercial and member-owned winches, CAP now has two corporate owned Roman winches in PCR and NER. In several years of operation neither operation has had an incident related to a glider ground launch.

The use of commercially provided and CAP member operated commercial winch or auto tow equipment is authorized. When a CAP member is operating a commercial winch while participating as a CAP member, however, it is considered member-owned or furnished and requires a signed HHA on file with the CAP-USAF region. In most cases, CAP liability insurance will cover liability claims arising out of the ground and flight activity. It will not provide damage or replacement coverage for the aircraft, vehicles, or winches. For more details see CAPR 900-5, *Civil Air Patrol Insurance Benefits Program*.

**Winch and Auto Tow Operator Requirements**

Minimum training requirements must be met by CAP members in order to perform the glider launch duties of CAP Winch Operator (see Attachment 3) and CAP Auto Tow Operator (see Attachment 4).

## Orientation and Instructional Flights

The primary purpose of our glider program is to give our cadets the opportunity to experience yet another form of flying. Gliders develop a high degree of skill and confidence, and have been the foundation and impetus for past cadets that have participated and excelled in both military and civilian aviation careers.

### Glider Orientation Flights

Up to five orientation flights are available to qualified cadets using the syllabus found in CAPP 52-7, *Cadet Orientation Flight Syllabus.* Statistically, most cadets have not completed even one glider orientation flight. It is the responsibility of those managing the programs to make available and promote these orientation flights.

There are times when a flight fails to reach 80% of the requirements listed in the syllabus. It may be the result of flight conditions or the use of winch launches. When using winches, the duration of the flight will probably require multiple launches. Multiple launches are authorized in an effort to meet the 80% completion rule. In this case as well as any flight that does not complete 80% of the syllabus, enter the number "50" in each sortie that was not completed rather than the Syllabus number.

All glider flights will be released via WMIRS in accordance with CAPR 60-1, *CAP Flight Management*. For multiple operations at the same airfield, multiple flights may be released on a single flight release as long as each participating pilot-in-command is identified on the CAPF 99.

See the WMIRS section for more details.

**Nationally Accredited Glider Flight Academies**
A nationally accredited glider academy is a flight academy hosted by a Region that is open to qualified cadets nationally and adheres to the following criteria:

1) Experience in successfully operating at least two local flight academies

2) Designed to accommodate a minimum of 12 cadets

3) A minimum of 18 hours of ground school, 2 hours per day

4) The use of age appropriate commercially available course material, for example, FAA, Knauff, etc.

5) The intent to provide 30 instructional flights

The CAP Glider Training Plan provides a syllabus and is available on the CAP website.

**Local Glider Academies**
Not all cadets are in a position to attend nationally accredited glider academies. Local glider programs are encouraged to develop and hold their own academies for their cadets on a wing or region level. Those academies should follow the national criteria as much as possible. Note: as stated in CAPR 52-16, *Cadet Program management*, NHQ offers national accreditation for cadet special activities hosted by wings and regions. For more information on attaining national accreditation for wing or region run glider flight academies, contact the NHQ Cadet Programs office.

**Cadet Solo Flights**
Prior to a cadet operating any glider as a solo pilot, the cadet will be in compliance with all applicable CAPR 60-1, *CAP Flight Management*, requirements and must have:

1) A current student pilot certificate with solo endorsements in accordance with 14 CFR Part 61 from a CAP instructor pilot in the make and model aircraft flown.

2) Completed a minimum of 30 dual glider instruction flights

Glider academy students are restricted from completing solo the first time they attend, whether it is nationally accredited or not. Waivers may be requested with the concurrence of two flight instructors through the NHQ/DO; however, blanket waivers cannot be approved.

**Pre-Solo Cadets**
Primarily due to the restriction on cadet solo during academies, those who have successfully completed the ground and flight instruction requirements may submit for Pre-Solo Wings. A “CAP Cadet Pre-solo Award” is not an aeronautical rating, it is an award earned by a CAP student pilot at a CAP wing level or higher flight academy, who has successfully performed a flight that demonstrates to an onboard CAP Instructor Pilot (CFI) that he/she has the ability to fly the glider without assistance.

## SSA/CAP Partnership

In 2013, the SSA and CAP renewed their partnership with an updated agreement that automatically renews very five years. As part of their youth outreach program, SSA developed an electronic membership for our cadets.

Upon completion of their first glider orientation flight, cadets are to receive a SSA/CAP Certificate of Achievement and an invitation to apply for CAP Cadet introductory membership in SSA. These certificates are signed by the orientation pilot and can be given to the cadet on the same day as the flight or sent to their Squadron Commander to be presented at a later date. Cadets are also qualified for the SSA CAP Cadet Introductory Membership. Certificates can be ordered from the SSA Merchandise Manager by phone at (575) 392-1177; by Fax at (575) 392-8154; or online at www.ssa.org .

Cadets can go to the SSA at cadet.ssa.org and enter their name to begin the enrollment process. After following the simple instructions, their membership will be processed and they can expect their membership card in a week or so. It is highly suggested that the cadets' commanders or DCPs review the enrollment process and follow-up to see if they need any further assistance. Other SSA websites include Benefits of Membership (SSA) http://www.ssa.org/Default.asp?content=3104; Cadet Youth Flying Scholarships (SSA) http://www.ssa.org/Youth. For additional Information the main website is located at www.ssa.org.

Additional information on how to implement the SSA-CAP program can be found in the GLIDER section of the CAP Pilots Web page.

## Web Mission Information Reporting System (WMIRS)

### An Overview

WMIRS was developed to assist CAP and Department of Defense (DoD) leaders so they can more effectively review, approve and monitor CAP's missions. With WMIRS these individuals have a real-time picture of all the missions CAP is executing nationwide and this also allows them to accurately track how our funds are being spent to support these missions.

WMIRS allows wings to more accurately monitor their budgets and resources, thus providing better accountability. WMIRS will also streamline the financial process allowing NHQ to reimburse wings for their expenses more quickly. All CAP missions and sorties flown are required to be entered into WMIRS, including Corporate "C" missions.

Another major benefit of WMIRS is the guarantee of Federal Employees Compensation Act (FECA) and Federal Tort Claims Act Coverage (FTCA) on all Category "A" and "B" missions that are authorized in advance by the Air Force. Similarly, properly authorized Category "C" Corporate missions are guaranteed Corporate insurance coverage. **In order to protect our members and their families, it is absolutely imperative that all sortie entries, including mission symbols, are accurate for the type of sortie being flown, so that it does not void the correct insurance coverage.**

WMIRS will store the name of the approving individual along with the date and time of the approval in the database, so there will never be any doubt that the mission was a properly authorized event.

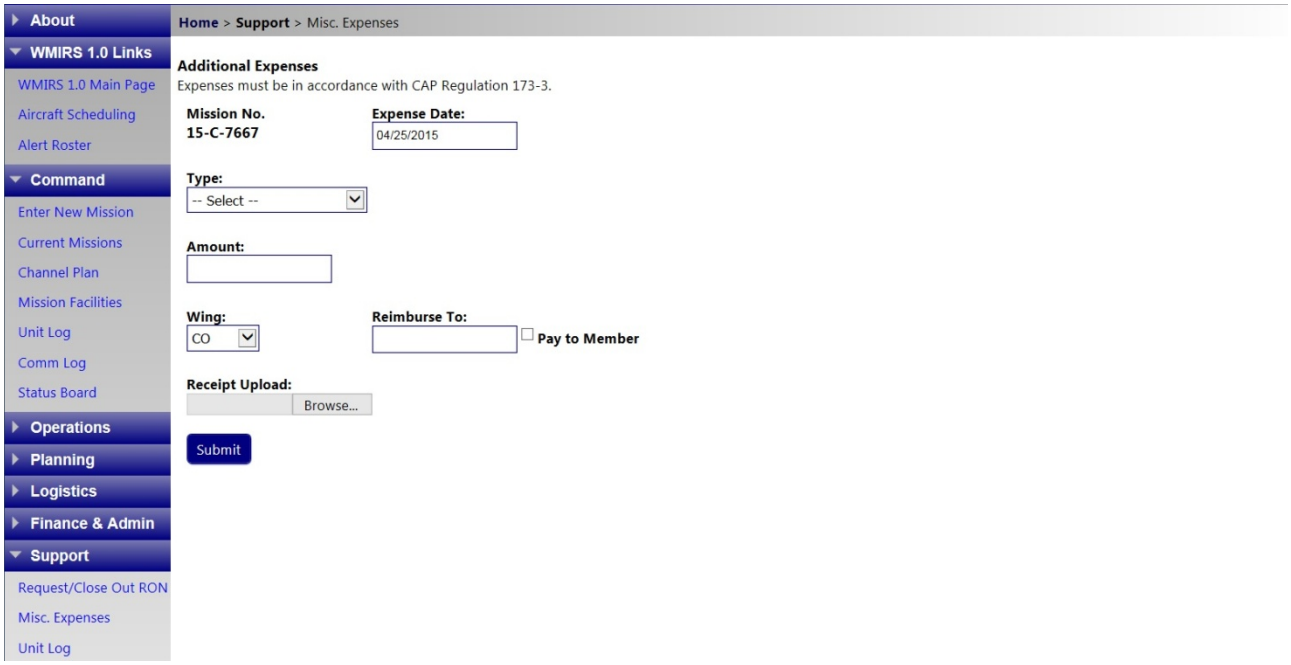
All post-flight mission data must be entered into WMIRS within 72 hours of flight completion. In addition, the WMIRS e108 must be generated and approved by the Wing/Region Commander (or designee) within 45 days of mission close. Reimbursement requests generated or approved later than 45 days after mission close will not be reimbursed. Fuel receipts for funded flying must be forwarded to your wing/region or uploaded directly into WMIRS within 15 days after the close of the mission.

**Non-CAP Flights**

There are occasions when flights through SSA affiliate clubs and other commercial glider vendors are flown with our cadets or senior members. They could be familiarization or instructional flights without CAP pilots. More often, the same holds true for aero and ground launch vendors. These non-CAP flights or launches are not loaded into WMIRS, are not tracked and are not included in the normal CAPF e108 for reimbursement process.

**Non-CAP Flight Reimbursement**

For expense reimbursement of an authorized non-CAP flight or launch, the non-CAP tows should be entered under Support->Misc. Expense. Select *Comm. Glider Tow* as the expense type. Enter the date of the expense, amount, reimbursement information and receipt. The expense will then be available for an e108.



## CAP Flights

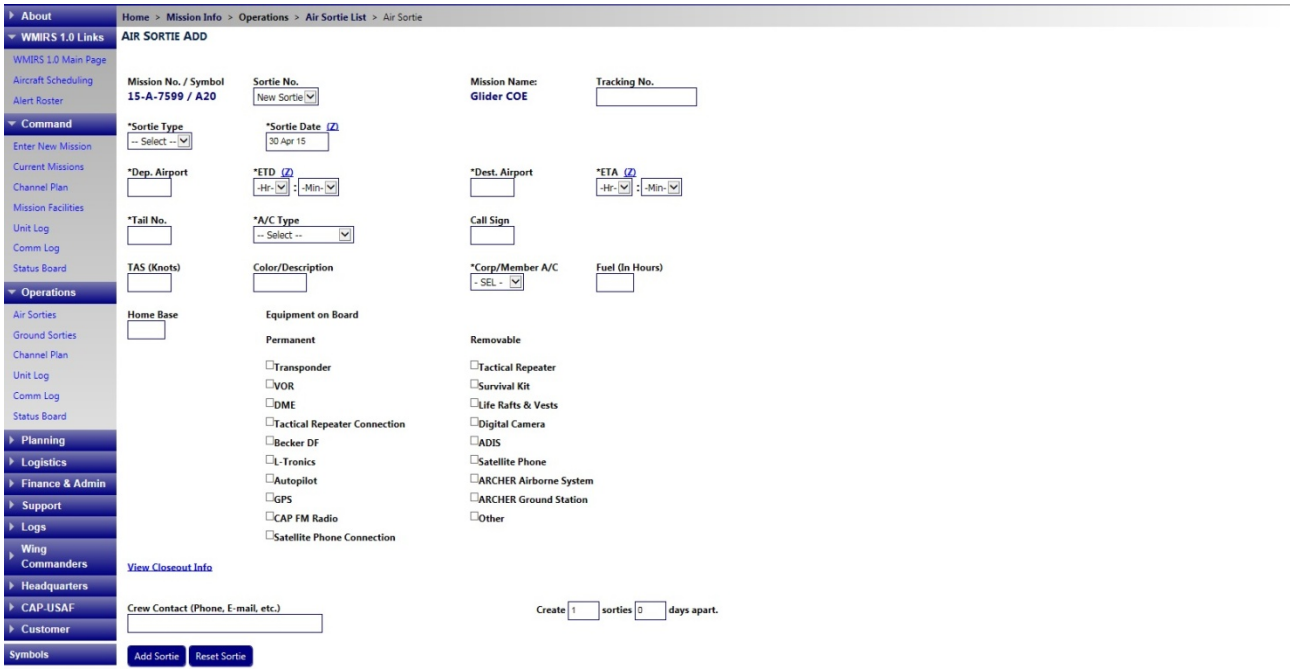
Any flight with a CAP member participating as a CAP member PIC, including those using SSA affiliate clubs or other commercial vendor equipment, must be entered in WMIRS with all appropriate data and approvals, then closed and validated at the end of the mission. Sorties may be single entries or, in the case of orientation flights and flight academies, can be entered as multiple sorties. Sorties should be closed once the flight is completed and validated. Validation confirms that it is an actual flight and the sortie information is pushed to the CAPF 18, Aircraft Utilization Glider Reports.

For glider operations, sorties/flights begin when the aircraft begins to move forward on takeoff. It ends after airborne flight when the aircraft returns to the surface and the glider comes to rest after landing or the last landing of a tow plane participating in a glider event. Similarly, for ground tows the sortie would be from the first launch to the completion of the last release including recovery of the tow lines.

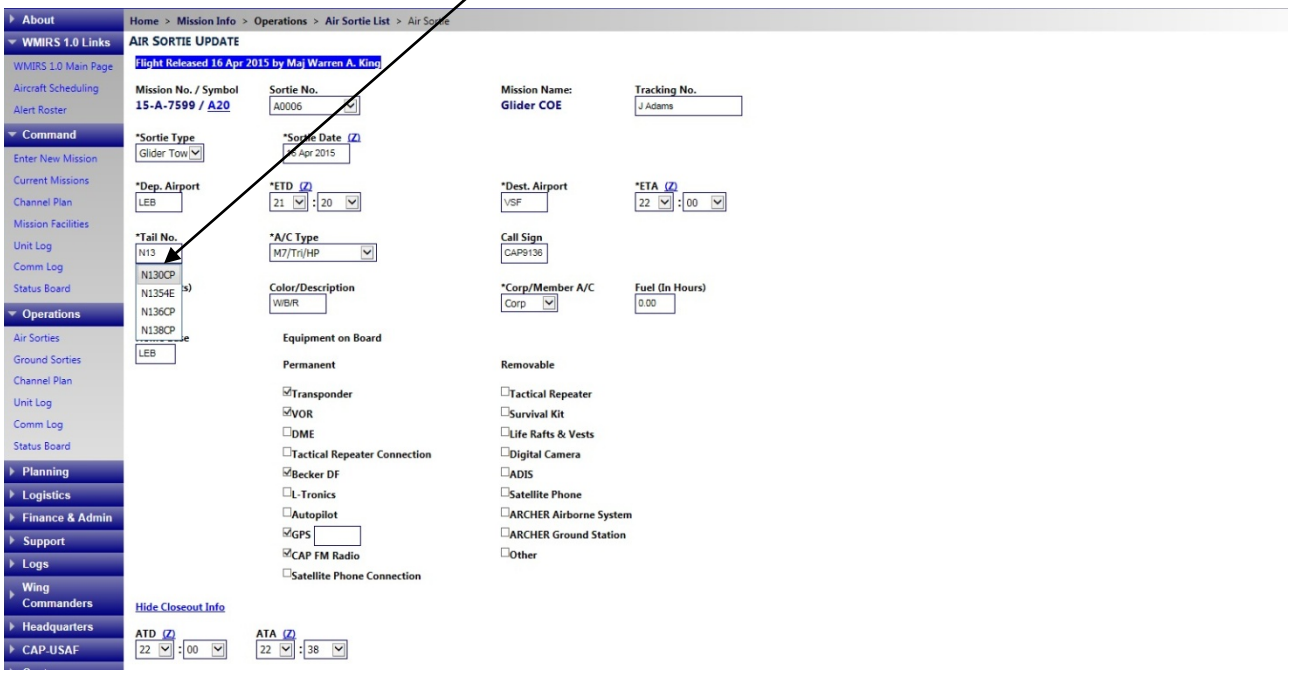
Since our gliders do not normally have a Tach or Hobbs meter onboard, the only way we have to accurately track our total time on airframe (TTFM) is to make sure we record the entire flight time in WMIRS, from launch to stop. Someone must be designated to record take-off and landing times for each sortie. The designee may be the PIC. An accurate TTFM is crucial for a safe and prolonged operation. With the exception of Flight Academies, time is recorded in hours. This means glider flights will be recorded in tenths of hours (6 minutes = 0.1 hour).

## Normal WMIRS Entries

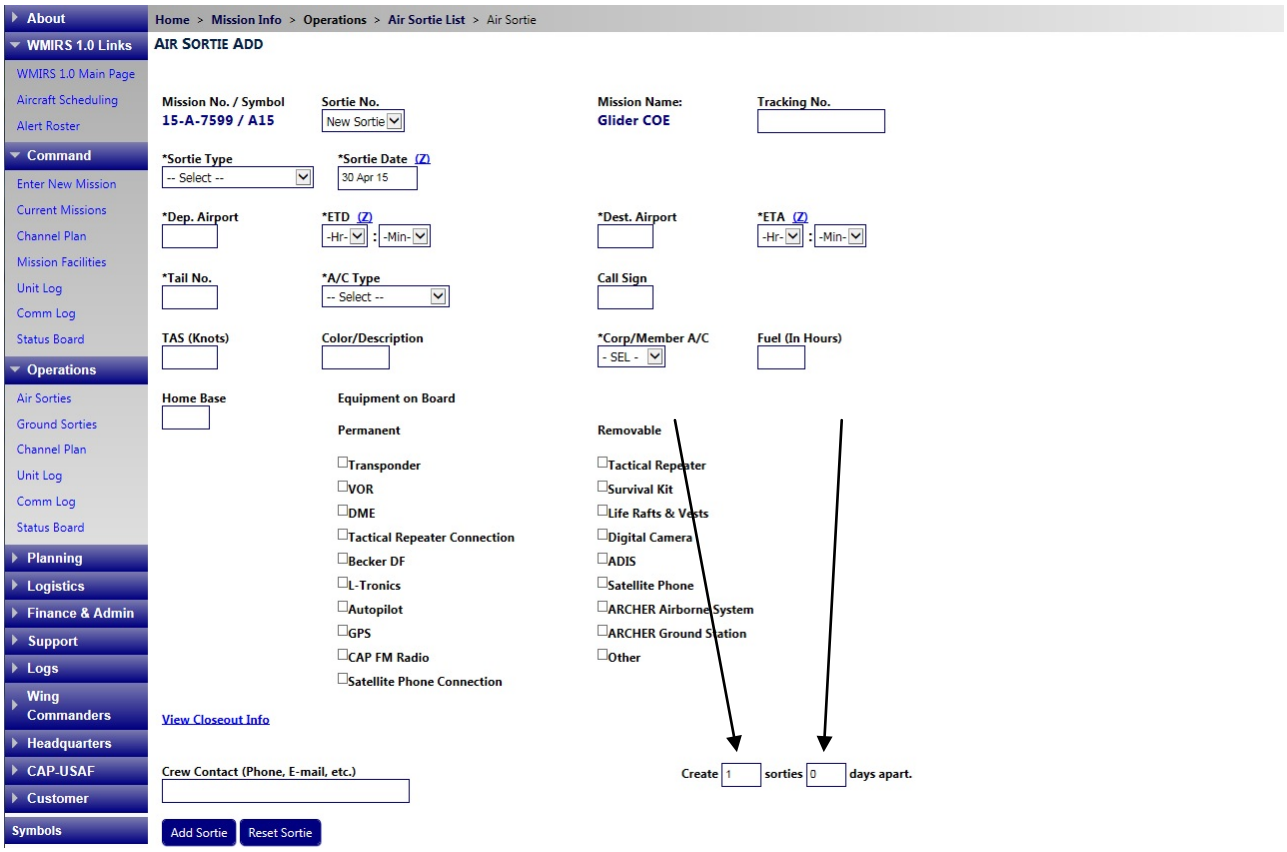
With the exception of cadet flight training during flight academies, all glider and glider tow flights are entered in WMIRS using the normal sortie pages for entering glider flights.



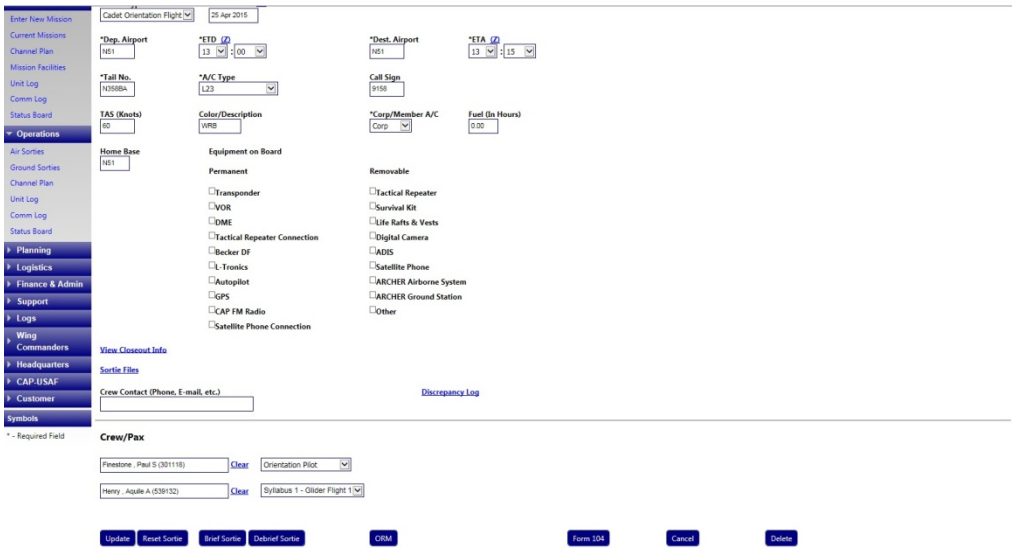
When you begin entering a tail number, a list will appear under the box. As you type, the list will reduce to tail numbers matching your input. You can select a tail number from that list. When selected, other aircraft fields, such as aircraft type, call sign, color/description will auto-fill from history for that tail number.



Since, orientation flight activities normally include a number of cadets, when adding a sortie, you have the option to create copies of that sortie. Using the ***Create ___ sorties ___ days apart*** block, you can create multiple sorties for a given day, or divided over several days. If the goal for a Saturday is to fly 10 orientation flights, a single basic sortie can be entered to create all 10 sorties using the duplicate sortie box. Later, the individual information for each sortie can be entered to close out the flights.




The pilot and cadets are entered in the same area as for any other sortie. For the cadet, the syllabus will replace the normal crew assignment list.



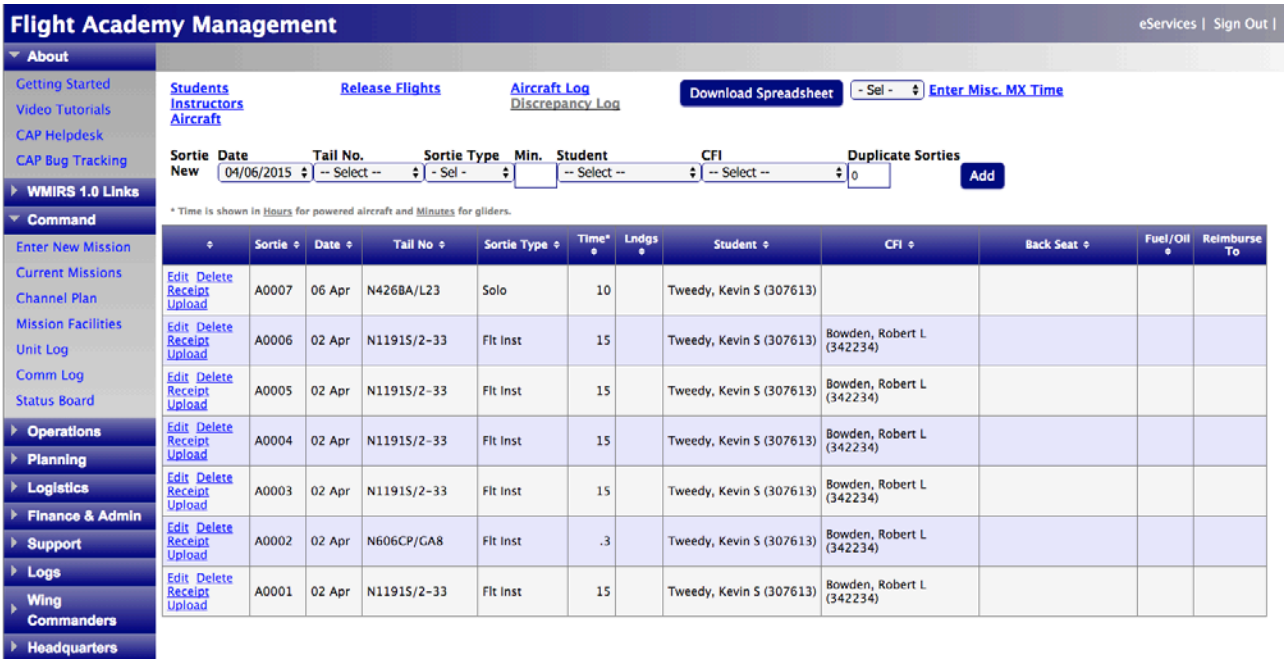
## CAP Flight Reimbursement through WMIRS

Whether CAP, SSA affiliate or other commercially provided equipment, when CAP members are participating as CAP member pilots or tow operators all sorties must be recorded in WMIRS and reimbursement for member, SSA affiliate or commercial provider will be through the WMIRS e108 procedure.

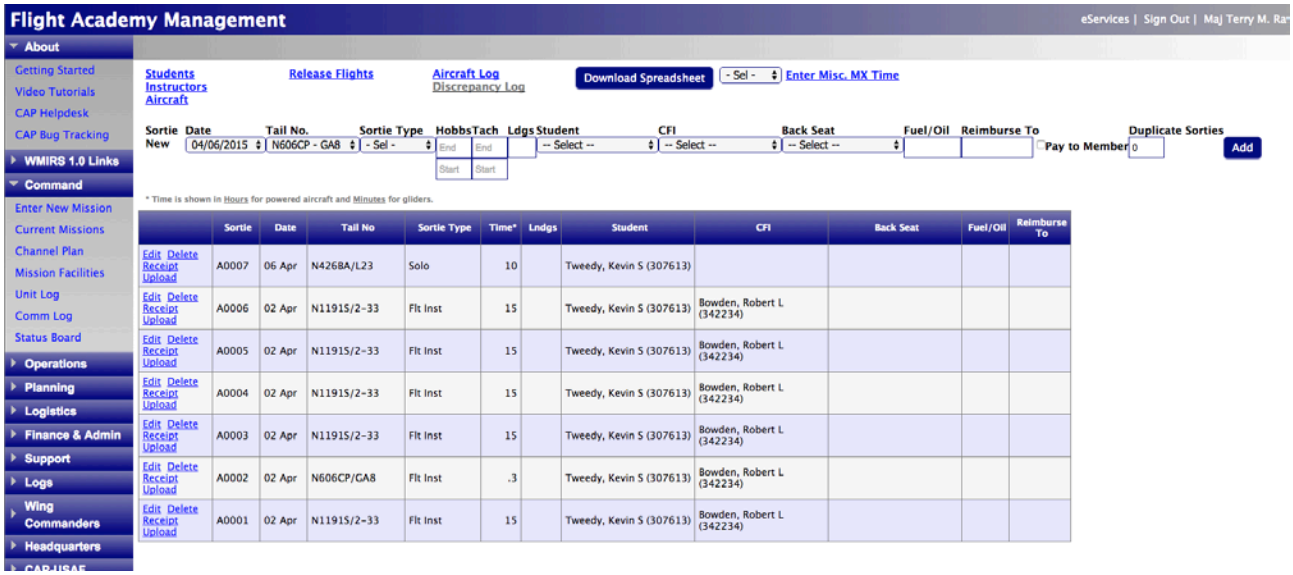
For the reimbursement, the first stop is the wing. If the SSA affiliate club or other commercial provider is billing for the service, the wing will pay the invoice and seek wing reimbursement through an e108. If a unit pays for the services directly, they must request reimbursement through the wing (wings have a procedure for this) and the wing will seek reimbursement through an e108. Members may request reimbursement from their wing or file for direct electronic funds transfer (EFT) to their bank account from NHQ via an e108. To select direct member payment by EFT, the member enters their CAPID in the "Reimburse To" block and checks the "Pay to Member" check box when they enter the expense.

## Flight Academies

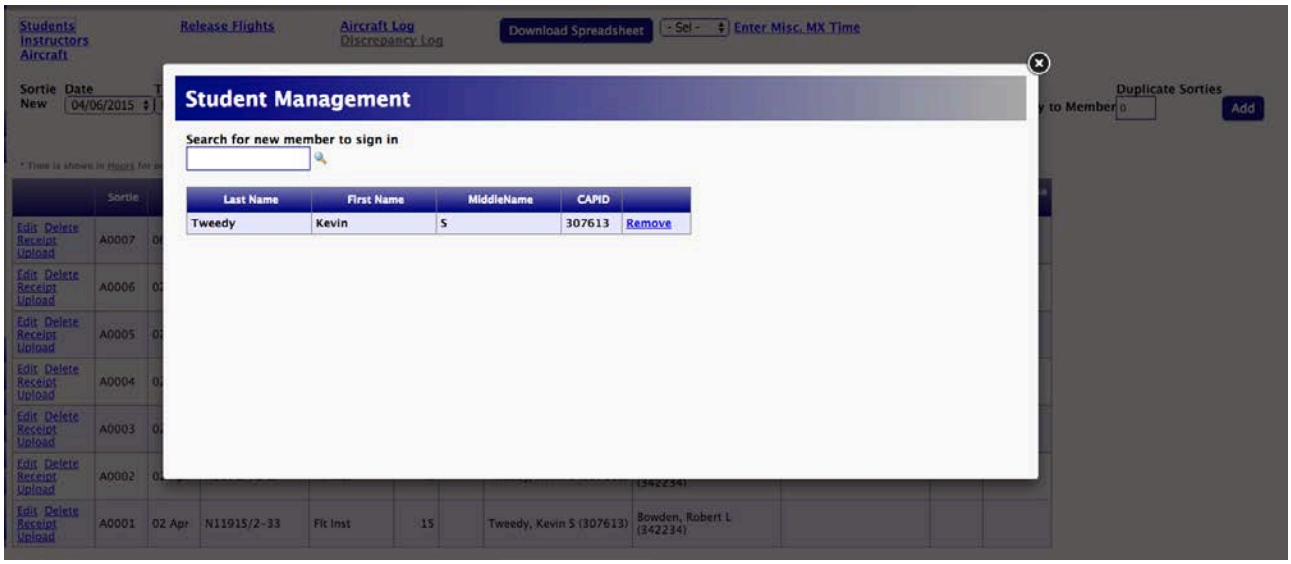
Flight Academies, both nationally accredited and local operate in a similar manner and use a simplified entry screen for their sorties. The screen combines the sortie list and entry/edit screens into one. Note that duplicate sorties are available next to the ***Add*** button.



For gliders, the Hobbs/Tach is removed and minutes are entered (above). Powered aircraft, including tow aircraft enter Hobbs and Tach times (below).

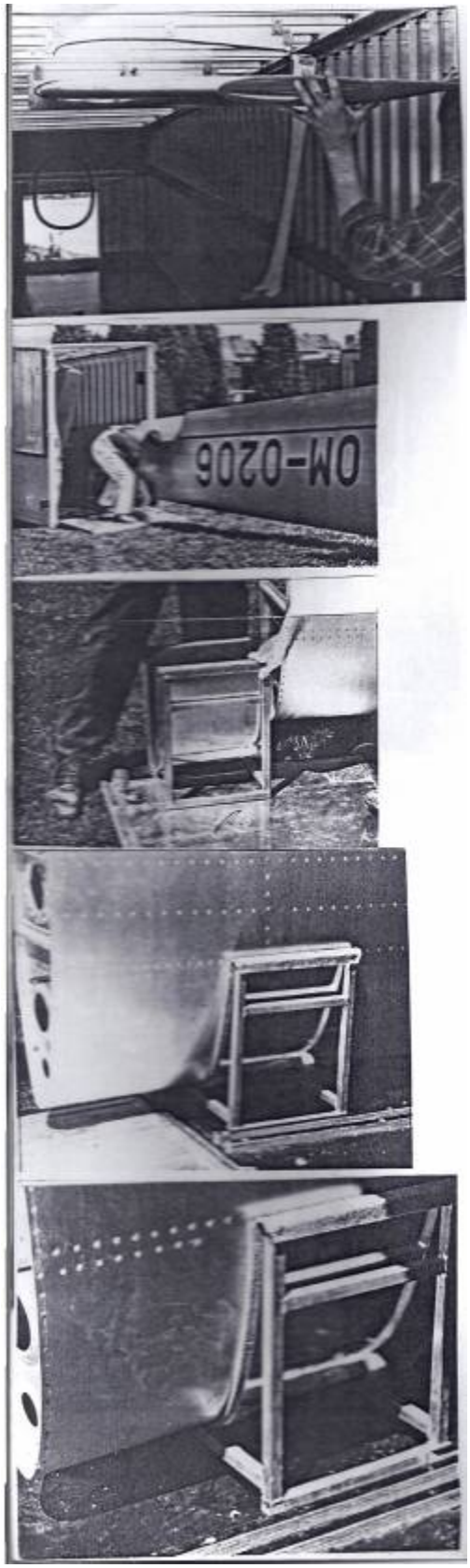



Aircraft, students, and instructors are pre-loaded by the activity to populate the drop down lists. Clicking “Students,” “Instructors,” or “Aircraft” will open a window to enter/edit that list.



## Attachment 1 – Loading Manual for L-23

(Trailer TV-2)

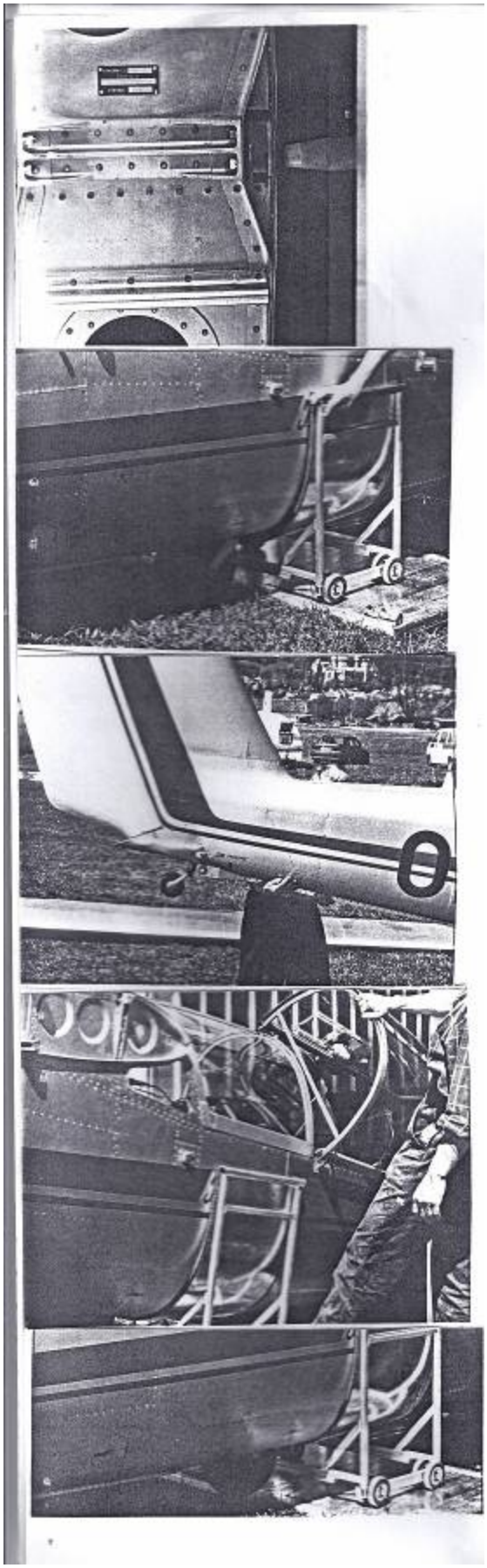



1. Insert the elevator in the bracket and fasten with wing nut.
2. For farther transport put safety wire thru the nut and on the trailing edge add sponge rubber.

3. Insert wing tip in the tip dolly and fasten with belt.

4. Place the wing root into the wing root dolly.

5. Slide the wing in the transport position.
6. Adjust the wing dolly against floor stops.



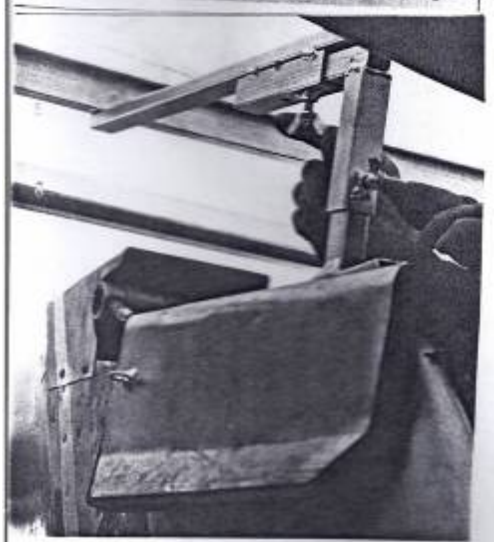
7. Insert the main wing root mount onto the nylon pin and tighten the nut.
8. For farther transport secure both the wing tip dolly wing nut as well as the main wing root nuth with safety wire.

9. Place the fuselage dolly on the aft door ramp and slide the fuselage onto at all the way to the main wheel. If the fuselage has the bottom center of gravity tow release, orient the dolly in such a way so that the cutout in the dolly cradle faces toward the main wheel.

10. Lift the fuselage tail.

11. Open the cockpit.

12. Retract the main wheel.



13. Push the fuselage with the dolly into the trailer until the nose leans against the nose support cone.
14. Insert the tail support under the fuselage and fasten the fuselage tail with the strap. Secure the tail support with a wing nut to the floor.

15. Hook the front chain into the front aerotow release. Tighten with the turnbuckle.

16. Slide the bracket onto the top of vertical stabilizer and secure with two wing nuts.

17. For farther transport secure all wing nuts with bonding wire, also the chain turnbuckle.

**Attachment 2 –CAP Glider Training Plan**
(Includes Syllabus)

# GLIDER TRAINING PLAN

**Attachment 2 – Tab 1**

# CAP Initial Glider Check Out Program

**All senior member CAP glider pilots must complete the following CAP Initial Glider Check Out Program with a FAA CFIG prior to their Initial CAPF 5 Flight Evaluation.**

| **Training Items** | Completed to the appropriate FAA PTS CFIG Signature and date |
|---|---|
| **Ground Training Review** | |
| Aircraft POH Familiarization<br>Operating Limitations – Emergency Procedures – Normal Procedures<br>Performance – Weight & Balance – Glider Systems<br>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 52-7 Knowledge | |
| **Flight Training Review** | |
| 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 | |
| **Emergency Procedures Review** | |
| Review American Standard Soaring Signals<br>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) | |

The check out 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.

**Attachment 2 – Tab 2**

# CAP Glider Proficiency Program Syllabus

**Completion of the following syllabus items will ensure currency.**
Each individual CAP glider pilot is personally responsible for ensuring he or she is proficient and should accomplish the following training items in such a manner and frequency as to ensure proficiency.

| Proficiency Training Items | Date Proficient |
|---|---|
| **Ground Training Review** | |
| Aircraft POH Review<br>Complete the CAP Glider Questionnaire for the appropriate glider | |
| Glider Pre-flight Inspection | |
| Tow Line and Tow Ring Inspection | |
| Glider Ground Handling Issues | |
| Glider Tie-down Procedures | |
| Use of Checklists | |
| Other Operational Issues | |
| **Flight Training Review** | |
| Before Take-off Procedures | |
| Take-off (3 in a 90 day period) | |
| 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 | |
| Radio Procedures – if installed | |
| Before Landing Checklist | |
| Landing and Roll-out (3 in a 90 day period) | |
| After Landing Procedures | |
| **Emergency Procedures Review** | |
| Review American Standard Soaring Signals<br>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’ (verbal only) | |
| Glider Can Not Release (verbal only) | |
| Glider and Tow Plane Can Not Release (verbal only) | |

**Attachment 2 – Tab 3**

# CIVIL AIR PATROL
# United States Air Force Auxiliary

## Glider Flight Training
## Course Outline

# FLIGHT RULES

1. Glider training flights **shall not** begin prior to official sunrise.

2. Glider training aircraft (any aircraft being flown with cadets on board, for the purpose of flight instruction) shall be on the ground **not later than** 30 minutes before official sunset.

3. Cadets **shall not** be flown on maintenance support flights.

4. Cadets may be transported to and/or from the glider flight training activity in CAP aircraft in accordance with CAPR 60-1, *CAP Flight Management*.

**5. Glider Flight Training Weather Minimums**

**Dual Instruction Flights**
No dual flight instruction will be given unless the weather (current and forecast for time of return) meets the following criteria:

For flights outside the airport traffic pattern (tows above 1000' AGL):
- Ceiling not less than 2500' AGL.
- Flight visibility not less than 3 nautical miles.
- Winds not greater than 20 kts. (sustained or gust), and not exceeding 12 kts. crosswind component or the aircraft's maximum demonstrated crosswind, which ever is higher, for the runway(s) to be used.

For flights within the airport traffic pattern (tows up to 1000' AGL):
- Ceiling not less than 1500' AGL.
- Flight visibility not less than 3 nautical miles.
- Winds not greater than 20 kts. (sustained or gust), and not exceeding 12 kts. crosswind component or the aircraft's maximum demonstrated crosswind, which ever is higher, for the runway(s) to be used.

**Solo Flights**
No student solo flights will be conducted unless the weather (current and forecast for time of return) meets the following criteria:
- Ceiling not less than 2500' AGL.
- Flight visibility not less than 5 nautical miles.
- Winds not greater than 10 kts. (sustained or gust), and not exceeding 5 kts. crosswind component for the runway(s) to be used.

# CAP Glider Flight Training Course

## Training Standardization

1. As in all other CAP activities…**SAFETY IS OUR #1 GOAL!!**

2. Transfer of control of the aircraft must be explained to the student before every flight. **The procedure should be a challenge/response.** Example - Instructor's challenge: "I've got the controls." Student's response: "You've got the controls."

3. The student must sit high enough to have good visibility over the nose of the aircraft. Use a firm cushion if necessary. The student should be sitting forward enough to make full rudder deflections, but not so far forward that full aft movement of the control stick is inhibited. Be sure that the student's seating position is the same for each flight and the cushion is restrained in such a manner that will prevent control interference.

4. Stress division of attention from the very first flight and reiterate during all maneuvers.

5. Introduce scanning techniques and reiterate throughout the flight training process.

6. Perform clearing turns before practice maneuvers -- Clearing turns consist of at least 180 degrees of turn (one 180, or two 90 degree turns in opposite directions) at approximately 30 degrees of bank.

7. Students shall complete the proper checklists prior to takeoff and landing.

8. Introduce and stress the use of a constant reference in determining pitch attitude. Different methods will work for different students, but the method chosen should be used consistently. Each student must be able to demonstrate the correct pitch attitude for all maneuvers without reference to the airspeed indicator.

9. During takeoff the student will ensure the spoilers are closed and remain closed throughout the takeoff and initial climb.

10. Recoveries from both imminent and fully stalled conditions should be taught for all stalls.

11. Student's must be familiar and aware of the danger of cross-controlled situations during low altitude turns.

12. The flight instructor will promptly inform the CAP Glider Program Manager of students who are having greater than normal difficulties with training. Evaluation by a different instructor may be necessary and should be completed as soon as possible.

13. Flight instructors should take convenient opportunities to communicate the **'fun of soaring'** without impacting the training syllabus. Thermal soaring techniques, recognition of possible areas of lift or sink, glide estimation and planning are items that develop smoothness and judgment, as well as add some sense of relaxation and achievement to the activity.

As in all other CAP activities: **SAFETY IS OUR #1 GOAL!!**

# Completion Level Key

**LEVEL 1** Student is able to participate in the maneuver while 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** **Before-solo:** 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 instructor.
**After-solo:** Student is able to perform the assigned maneuver at or above the appropriate FAA PTS level.

Each lesson will usually require multiple flights to complete.

Tows to higher altitudes are useful early in the training program to allow the student more time to become accustomed to flying the glider on tow, and to give more time to accomplish the flight maneuvers.

Regardless of the training schedule used, the student's first flight should be in the still air of the morning or late afternoon. Rotate the students through a first flight early the first day before concentrating on detailed training flights.

## Remember, each lesson usually requires multiple flights to complete.

# LESSON 1
# Before-Solo

**Completion Standards**
The first lesson consists of familiarization with the aircraft, assembly, preflight, operating procedures, the sensations of flight, local flight areas, and the use of flight controls and instruments. Students should be able to keep the aircraft reasonably straight and perform shallow to medium turns at the end of this lesson.

| OPERATION | COMPLETION LEVEL | COMMENTS |
|---|---|---|
| **1. Aircraft familiarization**<br>Cockpit familiarization<br>Controls<br>Instruments<br>Aircraft systems<br>Aircraft flight manual or pilot operating handbook<br>Flight Preparation | Level 2 | |
| **2. Aircraft Assembly & Disassembly**<br>Use of checklist<br>Use of Aircraft flight manual or pilot operating handbook<br>Safety precautions | Level 1 | |
| **3. Preflight Inspection**<br>Use of checklist<br>Positive control check<br>Inspect towline and rigging | Level 1 | |
| **4. Ground Handling (Surface Operations)**<br>Ground towing<br>Pushing by hand<br>Obstacle clearance<br>Parking<br>Tying aircraft down | Level 1 | |
| **5. Pre-takeoff Check** | Level 1 | "A-BB-CCC-DD-E"<br>Checklist should be committed to memory. |
| **6. Takeoff & Aero tow** | Level 1 | Demonstrate high-tow & low-tow, Area familiarization |
| **6. Flight Controls**<br>Stability<br>Trim<br>Straight glide<br>Pitch & bank control<br>Turns: medium bank (approx. 30 degrees)<br>Use of spoilers | Level 1 | Emphasize coordinated flight and outside references.<br>Demonstrate adverse yaw.<br>Show effect on instruments. |
| **8. Traffic Pattern, Approach & Landing**<br>Checklist usage<br>Entry procedures<br>Visual scan for traffic | Level 1 | "U-S-T-A-L-L" should be committed to memory before the next flight. |
| **9. Post-Flight Discussion** | | |
| **10. Preview Next Lesson**<br>Review straight glides & turns<br>Introduce steep turns, slow flight/<br>MCA & stalls, and Slack line recovery. | | Student Reading Assignment:<br>Soaring Flight Manual:<br>Straight Glides – page 14-3<br>Gliding Turns – page 14-4<br>Slow Flight and Stalls – page 14-4 Slack Line – page 12-14<br>Preflight & Ground Ops pages 11-1 thru 11-10<br>Aero Tow Launch Procedures – 2-2 thru 2-8 |

## IN-FLIGHT INSTRUCTOR'S GUIDE
## Lesson 1

| OPERATION | COMMENTS |
|---|---|
| **1. Aircraft familiarization**<br>(Level 2 – check when complete)<br>Cockpit familiarization ___<br>Controls ___<br>Instruments ___<br>Aircraft systems ___<br>Aircraft flight manual / pilot operating handbook ___<br>Flight Preparation ___ | |
| **2. Aircraft Assembly & Disassembly**<br>(Level 1 – check when complete)<br>Use of checklist ___<br>Safety precautions ___ | |
| **3. Preflight Inspection**<br>(Level 1 – check when complete)<br>Use of checklist ___<br>Positive control check ___<br>Inspect towline and rigging ___ | |
| **4. Ground Handling (Surface Ops)**<br>(Level 1 – check when complete)<br>Ground towing ___<br>Pushing by hand ___<br>Obstacle clearance ___<br>Parking ___<br>Tying aircraft down ___ | |
| **5. Pre-takeoff Check**<br>(Level 1 – check when complete)<br>Use of checklist ___ | |
| **6. Takeoff & Aero tow**<br>(Level 1 – check when complete)<br>Takeoff & Aerotow ___ | |
| **7. Flight Controls**<br>(Level 1 – check when complete)<br>Stability ___<br>Use of Trim ___<br>Straight glide ___<br>Pitch & bank control ___<br>Med. bank turns (approx. 30 degrees) ___<br>Use of spoilers ___ | |
| **8. Traffic Pattern, Approach & Landing**<br>(Level 1 – check when complete)<br>Use of checklist ___<br>Entry procedures ___<br>Visual scan for traffic ___ | |
| **9. Post-Flight Discussion** ___ | |
| **10. Preview Next Lesson** ___<br><br>Review straight glides & turns<br>Introduce steep turns, slow flight/<br>MCA & stalls, and Slack line recovery. | Student Reading Assignment:<br>Soaring Flight Manual:<br>Straight Glides – page 14-3<br>Gliding Turns – page 14-4<br>Slow Flight and Stalls – page 14-4 Slack Line – page 12-14<br>Preflight & Ground Ops pages 11-1 thru 11-10<br>Aero Tow Launch Procedures – 2-2 thru 2-8 |

## LESSON 2
## Before-solo

At the end of the second lesson, the student should be able to perform straight glides, medium-banked turns, slow-flight, steep turns, and straight-ahead stalls with direction and minimum assistance from the instructor.

| OPERATION | COMPLETION LEVEL | COMMENTS |
|---|---|---|
| **1. Pre-Flight Discussion** | | |
| **2. Aircraft familiarization** | Level 3 | |
| **3. Aircraft Assembly** | Level 2 | |
| **4. Preflight Inspection** | Level 2 | |
| **5. Ground Handling (Surface Operations)** | Level 2 | |
| **6. Pre-takeoff Check** | Level 2 | |
| **7. Takeoff & Aero tow** | Level 2 | |
| **8. Slack line recovery** | Level 1 | |
| **9. Low Tow Position** | Level 1 | Transition through the wake. |
| **10. Straight Glides** | Level 2 | Emphasize attitude flying for airspeed control. |
| **11. Medium Turns** | Level 2 | Maintain constant airspeed. |
| **12. Steep Turns** | Level 1 | Suggest warm-up with 45 degree banks prior to 50-60 degree bank. |
| **13. Flight at various airspeeds** | Level 1 | |
| **14. Slow Flight** | Level 1 | |
| **15. Straight Ahead Stalls** | Level 1 | Above 1500' AGL |
| **16. Traffic Pattern and Landing** | Level 2 | |
| **17. Post-Flight Discussion** | | |
| **18. Preview Next Lesson**<br>Review previous maneuvers.<br>Introduce turning stalls. | | Student Reading Assignment:<br>Soaring Flight Manual:<br>Takeoffs & tow – page 12-8 thru 12-19.<br>Review stalls – pages 14-5 thru 14-7<br>Traffic pattern & Landing – page 14-10 thru 14 -16.<br>Flight Instruments – pages 3-2 thru 3-14<br>Sailplane Aerodynamics – pages 1-2 thru 1-18 |

## IN-FLIGHT INSTRUCTOR'S GUIDE
## Lesson 2

| OPERATION | COMMENTS |
|---|---|
| **1. Aircraft familiarization**<br>(Level 3 – check when complete) ___ | |
| **2. Aircraft Assembly & Disassembly**<br>(Level 2 – check when complete) ___ | |
| **3. Preflight Inspection**<br>(Level 2 – check when complete) ___ | |
| **4. Ground Handling (Surface Ops)**<br>(Level 2 – check when complete) ___ | |
| **5. Pre-takeoff Check**<br>(Level 2 – check when complete) ___ | |
| **6. Takeoff & Aero tow**<br>(Level 2 – check when complete) ___ | |
| **7. Slack Line Recovery**<br>(Level 1 – check when complete) ___ | |
| **8. Low Tow Position**<br>(Level 1 – check when complete) ___ | |
| **9. Straight Glides**<br>(Level 2 – check when complete) ___ | |
| **10. Medium Bank Turns**<br>(Level 2 – check when complete) ___ | |
| **11. Steep Turns**<br>(Level 1 – check when complete) ___ | |
| **12. Flight at various airspeeds**<br>(Level 1 – check when complete) ___ | |
| **13. Slow Flight**<br>(Level 1 – check when complete) ___ | |
| **15. Straight Ahead Stalls**<br>(Level 1 – check when complete) ___ | |
| **16. Traffic Pattern and Landing**<br>(Level 2 – check when complete) ___ | |
| **17. Post-Flight Discussion** ___ | |
| **18. Preview Next Lesson** ___<br>Review previous maneuvers.<br>Introduce turning stalls. | Student Reading Assignment:<br>Soaring Flight Manual:<br>Takeoffs & tow – page 12-8 thru 12-19.<br>Review stalls – pages 14-5 thru 14-7<br>Traffic pattern & Landing – page 14-10 thru 14 -16.<br>Flight Instruments – pages 3-2 thru 3-14<br>Sailplane Aerodynamics –<br>pages 1-2 thru 1-18 |

## LESSON 3
## Before-solo

At the completion of this lesson, the student should perform the basic flight maneuvers with a reasonable degree of proficiency, and should accomplish slow-flight and straight-ahead stalls with minimum assistance from the instructor. The student should be responsible for pre-flight inspection, ground handling, and parking without direction from the instructor, except in unusual or unfamiliar situations.

| OPERATION | COMPLETION LEVEL | COMMENTS |
|---|---|---|
| **1. Pre-Flight Discussion** | | |
| **2. Aircraft familiarization** | Level 4 | |
| **3. Aircraft Assembly & Preflight Inspection** | Level 3 | Reinforce use of checklists |
| **4. Ground Handling (Surface Operations)** | Level 3 | |
| **5. Pre-takeoff Check** | Level 3 | |
| **6. Takeoff & Aero tow** | Level 2 | |
| **7. Low Tow Position** | Level 2 | Transition through the wake. |
| **8. Boxing the wake** | Level 1 | Show how all controls are used in this maneuver. Emphasize pausing at each corner of the box. |
| **9. Straight Glides & Medium Turns** | Level 3 | |
| **10. Steep Turns** | Level 2 | Use 45 - 60 degrees of bank. |
| **11. Airspeed Changes & Slow Flight/MCA** | Level 2 | |
| **12. Straight Ahead Stalls** | Level 2 | Imminent & full stalls. Emphasize signs of a stall. Recover above 1500' AGL! |
| **13. Turning Stalls** | Level 1 | Emphasize the need for coordination. Recover above 1500' AGL! |
| **14. Traffic Pattern, Approach, and Landing** | Level 2 | |
| **15. Post-Flight Discussion** | | |
| **16. Preview Next Lesson**<br>Review previous maneuvers.<br>Accelerated stalls<br>Crosswind takeoffs<br>Crosswind landing | | Student Reading Assignment:<br>Soaring Flight Manual:<br>Review accelerated stalls – page 14-6<br>Review crosswind takeoff – page 12-10<br>Crosswind & Downwind Landing – page 14-15 thru 14-16<br>Medical Factors – pages 5-2 thru 5-16<br>Thermal Soaring – page 15-2 thru 15-4 |

## IN-FLIGHT INSTRUCTOR'S GUIDE
## Lesson 3

| OPERATION | COMMENTS |
|---|---|
| **1. Aircraft familiarization**<br>(Level 4 – check when complete) ___ | |
| **2. Aircraft Assembly & Disassembly**<br>(Level 3 – check when complete) ___ | |
| **3. Preflight Inspection**<br>(Level 3 – check when complete) ___ | |
| **4. Ground Handling (Surface Ops)**<br>(Level 3 – check when complete) ___ | |
| **5. Pre-takeoff Check**<br>(Level 3 – check when complete) ___ | |
| **6. Takeoff & Aero tow**<br>(Level 2 – check when complete) ___ | |
| **7. Low Tow Position**<br>(Level 2 – check when complete) ___ | |
| **8. Boxing the Wake**<br>(Level 1 – check when complete) ___ | |
| **9. Straight Glides & Medium Bank Turns**<br>(Level 3 – check when complete)___ | |
| **10. Steep Turns**<br>(Level 2 – check when complete) ___ | |
| **11. Flight at various airspeeds & Slow Flight**<br>(Level 2 – check when complete) ___ | |
| **12. Straight Ahead Stalls**<br>(Level 2 – check when complete) ___ | |
| **13. Turning Stalls**<br>(Level 1 – check when complete ___ | |
| **14. Traffic Pattern and Landing**<br>(Level 2 – check when complete) ___ | |
| **15. Post-Flight Discussion** ___ | |
| **16. Preview Next Lesson** ___<br>Review previous maneuvers.<br>Accelerated stalls<br>Crosswind takeoffs<br>Crosswind approaches | Student Reading Assignment:<br>Soaring Flight Manual:<br>Review accelerated stalls – page 14-6<br>Review crosswind takeoff – page 12-10<br>Crosswind & Downwind Landing – page 14-15 thru 14-16<br>Medical Factors – pages 5-2 thru 5-16<br>Thermal Soaring – page 15-2 thru 15-4 |

## LESSON 4
## Before-Solo

At the end of this lesson, the student will be able to perform all ground operations without the assistance of the flight instructor. The student should perform most of the flight maneuvers previously introduced with only occasional assistance of explanation. Accelerated stalls and crosswind takeoffs and landings will be introduced.

| OPERATION | COMPLETION LEVEL | COMMENTS |
|---|---|---|
| **1. Pre-Flight Discussion** | | Emphasize the need for good heading & airspeed control during all maneuvers. |
| **2. Aircraft Assembly & Preflight Inspection** | Level 4 | |
| **3. Ground Handling (Surface Operations)** | Level 4 | |
| **4. Pre-takeoff Check** | Level 4 | |
| **5. Takeoff (Normal and X-wind) & Aero tow** | Level 2 | Teach crosswind takeoffs as opportunities arise. |
| **6. Boxing the Wake & Low Tow Position** | Level 2 | Transition through the wake. |
| **7. Straight Glides & Medium Turns** | Level 3 | Reinforce coordination |
| **8. Steep Turns** | Level 3 | |
| **9. Airspeed Changes & Slow Flight/MCA** | Level 3 | |
| **10. Straight Ahead Stalls** | Level 2 | Try stall with the spoilers open. |
| **11. Turning Stalls** | Level 2 | Imminent & full stalls. Recover above 1500' AGL! |
| **12. Accelerated Stalls** | Level 1 | Enter at 1.5 Vs, & 45 degree bank. |
| **13. Cross-controlled Stalls** | Level 1 | Enter no lower than 2500' AGL! Recover above 1500' AGL! |
| **14. Traffic Pattern, Approach, Landing (Crosswind)** | Level 2 | |
| **15. Post-Flight Discussion** | | |
| **16. Preview Next Lesson**<br>Review previous maneuvers.<br>Forward and sideslips<br>Slips to landings | | Student Reading Assignment:<br>Soaring flight Manual:<br>Slips – page 14-8 thru 14-10<br>Review crosswind takeoff – page 12-10 |

## IN-FLIGHT INSTRUCTOR'S GUIDE
## Lesson 4

| OPERATION | COMMENTS |
|---|---|
| **1. Aircraft Assembly & Disassembly**<br>(Level 4 – check when complete) ___ | |
| **2. Preflight Inspection**<br>(Level 3 – check when complete) ___ | |
| **3. Ground Handling (Surface Ops)**<br>(Level 4 – check when complete) ___ | |
| **4. Pre-takeoff Check**<br>(Level 4 – check when complete) ___ | |
| **5. Takeoff (Nor and x-wind) & Aero tow**<br>**(**Level 2 – check when complete) ___ | |
| **6. Box the Wake & Low Tow Position**<br>(Level 2 – check when complete) ___ | |
| **7. Straight Glides & Medium Bank Turns**<br>(Level 3 – check when complete)___ | |
| **8. Steep Turns**<br>(Level 3 – check when complete**)** ___ | |
| **9. Flight at various airspeeds & Slow Flight**<br>**(**Level 3 – check when complete) ___ | |
| **10. Straight Ahead Stalls (with spoilers)**<br>(Level 2 – check when complete) ___ | |
| **11. Turning Stalls**<br>(Level 2 – check when complete) ___ | |
| **12. Accelerated Stalls**<br>**(**Level 1 – check when complete) ___ | |
| **13. Cross-Control Stalls (2500' entry)**<br>(Level 1 – check when complete) ___ | |
| **14. Traffic Pattern and Landing (X-wind)**<br>(Level 2 – check when complete) ___ | |
| **15. Post-Flight Discussion** ___ | |
| **16. Preview Next Lesson** ___<br>Review previous maneuvers.<br>Forward and sideslips<br>Slips to landings | Student Reading Assignment:<br>Soaring flight Manual:<br>Slips – page 14-8 thru 14-10<br>Review crosswind takeoff – page 12-10 |

## LESSON 5

This lesson is a review of the flight maneuvers and procedures already covered in preparation for concentrated work on takeoffs, tows, and landings. A reasonable degree of proficiency in coordination, and airspeed control should be achieved prior to the competition of this lesson.

| OPERATION | COMPLETION LEVEL | COMMENTS |
|---|---|---|
| **1. Pre-Flight Discussion** | | Emphasize the need for good heading & airspeed control during all maneuvers. |
| **2. Preflight Inspection** | Level 4 | |
| **3. Takeoff (Normal and X-wind) & Aero tow** | Level 2 | Teach crosswind takeoffs as opportunities arise. |
| **4. Boxing the Wake & Low Tow Position** | Level 2 | Transition through the wake. |
| **5. Straight Glides & Medium Turns** | Level 4 | Practice performance speeds and glide estimation. |
| **6. Steep Turns** | Level 4 | |
| **7. Airspeed Changes & Slow Flight/MCA** | Level 3 | |
| **8. Straight Ahead Stalls** | Level 3 | |
| **9. Turning Stalls** | Level 3 | |
| **10. Accelerated Stalls** | Level 2 | |
| **11. Forward slips & Sideslips** | Level 1 | Right & Left. Emphasize pitch for airspeed control, slips during a turn, and slips with and without spoilers. |
| **12. Traffic Pattern, Approach** | Level 2 | Emphasize proper tracking in crosswind situations. |
| **13. Slips to Landing** | Level 2 | |
| **14. Post-Flight Discussion** | | |
| **15. Preview Next Lesson**<br>Review previous maneuvers.<br>Introduce steep spirals. | | Student Reading Assignment:<br>Soaring Flight Manual:<br>Spiral Dives – page 14-5 & fig. 14-4.<br>Regulations – 6-1 thru 6-8 |

## IN-FLIGHT INSTRUCTOR'S GUIDE
## Lesson 5

| OPERATION | COMMENTS |
|---|---|
| **1. Aircraft Assembly & Disassembly**<br>(Level 4 – check when complete) ___ | |
| **2. Preflight Inspection**<br>(Level 3 – check when complete) ___ | |
| **3. Ground Handling (Surface Ops)**<br>(Level 4 – check when complete) ___ | |
| **4. Pre-takeoff Check**<br>(Level 4 – check when complete) ___ | |
| **5. Takeoff (Nor and x-wind)& Aero tow**<br>(Level 2 – check when complete) ___ | |
| **6. Box the Wake & Low Tow Position**<br>(Level 2 – check when complete) ___ | |
| **7. Straight Glides & Medium Bank Turns**<br>(Level 3 – check when complete)___ | |
| **8. Steep Turns**<br>(Level 3 – check when complete) ___ | |
| **9. Flight at various airspeeds & Slow Flight**<br>(Level 3 – check when complete) ___ | |
| **10. Straight Ahead Stalls (with spoilers)**<br>(Level 2 – check when complete) ___ | |
| **11. Turning Stalls**<br>(Level 2 – check when complete) ___ | |
| **12. Accelerated Stalls**<br>(Level 1 – check when complete) ___ | |
| **13. Cross-Control Stalls (2500' entry)**<br>**(**Level 1 – check when complete) ___ | |
| **14. Traffic Pattern and Landing (X-wind)**<br>(Level 2 – check when complete) ___ | |
| **15. Post-Flight Discussion** ___ | |
| **16. Preview Next Lesson** ___<br>Review previous maneuvers.<br>Forward and sideslips<br>Slips to landings | Student Reading Assignment:<br>Soaring Flight Manual:<br>Spiral Dives – page 14-5 & fig. 14-4.<br>Regulations – 6-1 thru 6-8 |

## LESSON 6

During this lesson, the student will continue to develop proficiency in the practice maneuvers. Steep spirals will be introduced. Aero tows to 3000 feet AGL will be required to practice these maneuvers if thermals are not present.

| OPERATION | COMPLETION LEVEL | COMMENTS |
|---|---|---|
| **1. Pre-Flight Discussion** | | Emphasize precision in airspeed control. |
| **2. Takeoff (Normal and X-wind) & Aero tow** | Level 3 | |
| **3. Boxing the Wake & Low Tow Position** | Level 3 | |
| **4. Airspeed Changes & Slow Flight/MCA** | Level 3 | Emphasize best L/D, minimum sink, and MCA. |
| **5. Steep Turns** | Level 4 | |
| **6. Straight Ahead Stalls** | Level 4 | |
| **7. Turning Stalls** | Level 3 | |
| **8. Accelerated Stalls** | Level 3 | |
| **9. Steep Spirals** | Level 2 | Point out differences between a spiral and a spin. |
| **10. Traffic Pattern, Approach** | Level 3 | Emphasize advance planning to allow for wind & sink. |
| **11. Slips to Landing (Normal & Level 3 X-wind)** | Level 3 | |
| **12. Post-Flight Discussion** | | |
| **13. Preview Next Lesson**<br>Review previous maneuvers<br>Introduce emergency procedures | | Student Reading Assignment:<br>Soaring Flight Manual:<br>Review Airborne Emergency signals – page12-4<br>Review Aero Tow Emergencies – page 12-17 thru 12-19<br>Flight Publications and Airspace – pages 7-2 thru 7-10<br>Review SSF Standard American Soaring Signals Video if available. |

## IN-FLIGHT INSTRUCTOR'S GUIDE
## Lesson 6

| OPERATION | COMMENTS |
|---|---|
| **1. Pre-Flight Discussion** | |
| **2. Takeoff (Nor and x-wind)& Aero tow**<br>(Level 3 – check when complete) ___ | |
| **3. Box the Wake & Low Tow Position**<br>(Level 3 – check when complete) ___ | |
| **4. Airspeed changes & Slow Flight/MCA**<br>(Level 3 – check when complete) ___ | |
| **5. Steep Turns**<br>(Level 4 – check when complete) ___ | |
| **6. Straight Ahead Stalls**<br>(Level 4 – check when complete) ___ | |
| **7. Turning Stalls**<br>(Level 3 – check when complete) ___ | |
| **8. Accelerated Stalls**<br>(Level 3 – check when complete) ___ | |
| **9. Steep Spirals**<br>(Level 2 – check when complete) ___ | |
| **10. Traffic Pattern and approach**<br>(Level 3 – check when complete) ___ | |
| **11. Slips to Landing**<br>**(Normal & Level 3 X-wind)**<br>(Level 3 – check when complete) ___ | |
| **12. Post-Flight Discussion** ___ | |
| **13. Preview Next Lesson** ___<br>Review previous maneuvers.<br>Introduce emergency procedures | Student Reading Assignment:<br>Soaring Flight Manual:<br>Review Airborne Emergency signals – page12-4<br>Review Aero Tow Emergencies – page 12-17 thru 12-19<br>Flight Publications and Airspace – pages 7-2 thru 7-10<br>Review SSF Standard American Soaring Signals Video if available. |

## LESSON 7

At the completion of this lesson, the student should be able to make unassisted takeoffs and landings (even in light crosswinds), and be able to perform most flight maneuvers with the degree of proficiency necessary for safe, solo flight.

| OPERATION | COMPLETION LEVEL | COMMENTS |
|---|---|---|
| **1. Pre-Flight Discussion** | | |
| **2. Takeoff (Normal and X-wind) & Aero tow** | Level 4 | |
| **3. Boxing the Wake & Low Tow Position** | Level 4 | |
| **4. Airspeed Changes & Slow Flight/MCA** | Level 4 | Student must know best L/D, minimum sink, and MCA. |
| **4. Slack Line Recovery** | Level 3 | |
| **5. Steep Turns** | Level 4 | |
| **6. Straight Ahead Stalls** | Level 4 | |
| **7. Turning Stalls** | Level 3 | |
| **8. Accelerated Stalls** | Level 3 | |
| **9. Steep Spirals** | Level 3 | Point out differences between a spiral and a spin. |
| **10. Traffic Pattern, Approach** | Level 3 | Student must demonstrate advance planning allowing for wind & sink. |
| **11. Slips to Landing (Normal & X-wind)** | Level 3 | |
| **12. Post-Flight Discussion** | | |
| **13. Preview Next Lesson**<br>Review of previous maneuvers.<br>Emergency Procedures:<br>Premature Release<br>Off-Airport Landings | | Student Reading Assignment:<br>Review Aero tow Emergencies pages 12-17 thru 12-19<br>Performance Considerations pages 2-2 thru 2-10 |

## IN-FLIGHT INSTRUCTOR'S GUIDE
## Lesson 7

| OPERATION | COMMENTS |
|---|---|
| **1. Pre-Flight Discussion** ___ | |
| **2. Takeoff (Nor and x-wind)& Aero tow** (Level 4 – check when complete) ___ | |
| **3. Box the Wake & Low Tow Position** (Level 4 – check when complete) ___ | |
| **4. Airspeed changes & Slow Flight/MCA** (Level 4 – check when complete) ___ | Emphasize best L/D, minimum sink, and MCA. |
| **5. Slack Line Recovery** (Level 3 – check when complete) ___ | |
| **5. Steep Turns** (Level 4 – check when complete) ___ | |
| **6. Straight Ahead Stalls** (Level 4 – check when complete) ___ | |
| **7. Turning Stalls** (Level 3 – check when complete) ___ | |
| **8. Accelerated Stalls** (Level 3 – check when complete) ___ | |
| **9. Steep Spirals** (Level 3 – check when complete) ___ | Point out differences between a spiral and a spin. |
| **10. Traffic Pattern and approach** **(**Level 3 – check when complete) ___ | Emphasize advance planning allowing for wind & sink. |
| **11. Slips to Landing ( Normal & X-wind)** (Level 3 – check when complete**)** ___ | |
| **12. Post-Flight Discussion** ___ | |
| **13. Preview Next Lesson** ___<br>Review of previous maneuvers.<br>Emergency Procedures:<br>Premature Release<br>Off-Airport Landings | Student Reading Assignment:<br>Review Aero tow Emergencies pages 12-17 thru 12-19<br>Performance Considerations pages 2-2 thru 2-10 |

## LESSON 8

At the conclusion 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, tows, and landings without instructor assistance or direction. He/she should have demonstrated the ability to solve all ordinary problems encountered during flight.

| OPERATION | COMPLETION LEVEL | COMMENTS |
|---|---|---|
| **1. Pre-Flight Discussion** | | |
| **5. Slack Line Recovery** | Level 3 | |
| **6. Thermalling Procedures & Techniques** | Level 4 | |
| **7. Turning Stalls** | Level 4 | |
| **8. Accelerated Stalls** | Level 4 | |
| **9. Steep Spirals** | Level 4 | Student must be able to tell the difference between a spiral and a spin. |
| **10. Traffic Pattern, Approach** | Level 4 | Student should demonstrate advance planning to allow for wind & sink. Student must demonstrate a traffic pattern, approach, and landing without reference to the altimeter and airspeed indicator before lesson is complete. |
| **11. Slips to Landing (Normal & X-wind)** | Level 4 | |
| **11. Emergency Procedures – Premature Release from tow.** | Level 3 | Student will practice premature termination of tow from 200' to 400' and at 800' or above. |
| **12. Post-Flight Discussion** | | |
| **13. Preview Next Lesson**<br>Review of previous maneuvers.<br>Emergency Procedures:<br>Emergency Signals – Ground & Airborne | | Student Reading Assignment:<br>Pilot Operating Handbook Review (Use CAP Glider Questionnaire as a tool for POH review)<br>FAR 61 & 91 Review<br>Solo Airport airspace rules and regulations |

## IN-FLIGHT INSTRUCTOR'S GUIDE
## Lesson 8

| OPERATION | COMMENTS |
|---|---|
| **1. Pre-Flight Discussion** | |
| **5. Slack Line Recovery**<br>(Level 3 – check when complete) __ | |
| **7. Turning Stalls**<br>(Level 4 – check when complete) ___ | |
| **8. Accelerated Stalls**<br>(Level 4 – check when complete) ___ | |
| **9. Steep Spirals**<br>(Level 4 – check when complete) ___ | Point out differences between a spiral and a spin. |
| **10. Traffic Pattern and approach**<br>**(**Level 4 – check when complete) ___ | Emphasize advance planning to allow for wind & sink. |
| **11. Slips to Landing**<br>**( Normal & X-wind)**<br>(Level 4 – check when complete) ___ | |
| **11. Emergency Procedures – Premature Release from tow.**<br>(Level 3 – check when complete) ___ | Student will receive premature termination of tow from 200' to 400' and at 800' or above. |
| **12. Post-Flight Discussion** ___ | |
| **13. Preview Next Lesson** ___<br>Review of previous maneuvers.<br>Emergency Procedures:<br>Premature Release<br>Off-Airport Landings | Student Reading Assignment:<br>Pilot Operating Handbook Review (Use CAP Glider Questionnaire as a tool for POH review)<br>FAR 61 & 91 Review<br>Solo Airport airspace rules and regulations |

## LESSON 9

At the conclusion of this lesson, the student should have achieved proficiency in all the required maneuvers.

| OPERATION | COMPLETION LEVEL | COMMENTS |
|---|---|---|
| **1. Pre-Flight Discussion** | | Administer aeronautical knowledge test that meets FAR 61.87(b) requirements. |
| **2. Takeoff (Normal & X-wind)** | Level 4 | |
| **3. Slack Line Recovery** | Level 4 | |
| **4. Emergency Procedures (All)** | Level 4 | |
| **5. Pattern & Landing** | Level 4 | |
| **7. Solo Flight** | | If applicable. Ensure the student is not fatigued and the appropriate knowledge test and log book entries are complete. Flight time limit is 30 minutes or less for first solo flight. |
| **12. Post-Flight Discussion** | | |

## IN-FLIGHT INSTRUCTOR'S GUIDE
## Lesson 9

| OPERATION | COMMENTS |
|---|---|
| **1. Pre-Flight Discussion** | |
| **5. Takeoff (Normal & X-wind)** (Level 4 – check when complete) ___ | |
| **7. Slack Line Recovery** (Level 4 – check when complete) ___ | |
| **8. Emergency Procedures (All)** (Level 4 – check when complete) ___ | |
| **9. Pattern & Landing** (Level 4 – check when complete) ___ | |
| **10. Solo Flight** ___ | If applicable. Ensure the student is not fatigued and the appropriate log book entries have been make. Flight time limit is 30 minutes or less for first solo flight. |
| **12. Post-Flight Discussion** ___ | |

## Attachment 3 – CAP Winch Tow Launch Training Requirements

1. The following guidance provides standardized CAP Winch Tow Launch instructor and trainee requirements designed to enhance safe and effective operations of critical towing equipment used to support CAP glider flight activities.

   a. CAP Winch Operator (WO): Member qualified to operate a winch to launch CAP gliders 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 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 CAP designated winch instructor; who has safely completed a minimum of 50 winch launches, has been signed-off by a designated winch evaluator, and is designated by a wing or higher commander.

   d. Waivers: Requirements may be waived on a case by case basis when taking delivery of a newly assigned winch.

2. The following minimum training requirements must be met by CAP members in order to perform duties of CAP Winch Operator:

   a. Trainee must be a CAP senior member.

   b. Trainees must receive face to face ground instruction and a safety briefing, to include an explanation of tow duties**,** prior to operational training for set up and winch tow launch operations. This includes actions on both ends of the winch tow line (winch tow end and glider end).

   c. Trainees must have, at least, three glider flights involving the system with which they are training.

   d. Training must include both normal and emergency procedures.

   e. While next to the instructor, trainees must observe a minimum of 10 winch tow launches performed by a designated instructor, while being instructed on procedures and conduct of the launches. The 10 winch tow launches must be specific to the type of winch tow: speed control winch or tension control winch.

   f. Trainees must conduct a minimum of 10 winch tow launches in the operator's seat under the supervision of a designated instructor. The 10 winch tow launches must be specific to the type of winch tow: speed control winch or tension control winch.

   g. Trainees and operators will maintain documentation displaying Winch Launch Training and recurrent winch launch activity.

h. After completion of minimum training requirements and when the instructor is satisfied that the trainee is competent to safely conduct unsupervised winch tow launches, the instructor will submit the trainee as "Qualified" in Ops Quals "Pilot > Prerequisites" section indicating successful completion of winch tow launch training, as applicable. Next, the trainee will be available for wing or higher commander designation/appointment in Ops Quals.

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

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

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

Date Instructor submitted trainee's "Qualified" data into Ops Quals: _____

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For Instructor / Evaluator Candidates:

I have conducted an evaluation and verify the Instructor / Evaluator (circle one) candidate is competent to safely and effectively perform the indicated duties pertaining to winch equipment for speed control winch or tension control winch for which they were trained.

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

Date Evaluator submitted candidates "Qualified" data into Ops Quals: _____

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Notice: Non-CAP winch operators must have successfully completed verifiable training from a factory representative or legitimate aviation organization (SSA, aero club, contracted glider tow company, etc.) to be considered qualified to perform tow duties for CAP members or CAP aircraft. The FRO will confirm the qualification of the tow operator prior to glider sortie release.

## Attachment 4 – CAP Auto Tow Launch Training Requirements

1. The following guidance provides standardized CAP Auto Tow Launch instructor and trainee requirements designed to enhance safe and effective operations of critical towing equipment used to support CAP glider flight activities.

   a. CAP Auto Tow Operator (ATO): Member qualified to operate an auto tow vehicle to launch CAP gliders and is designated by a wing or higher commander.

   b. Auto Tow Crew Member (ATC): 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; this may be a cadet.

   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 tow launches, has been signed-off by a designated Evaluator, and is designated by a wing or higher commander.

   d. CAP Auto Tow Evaluator (ATE): Evaluator must be an auto tow designated instructor who has completed a minimum of 50 auto tow launches, has been signed off by a designated auto tow evaluator, and is designated by a wing or higher commander.

2. The following minimum training requirements must be met by CAP members in order to perform duties of CAP Auto Tow Operator:

   a. Trainee must be a CAP senior member for all positions; except for Release Operator and Tow Line Retrieval Assistant (they may be cadets).

   b. Trainees must receive face to face ground instruction and a safety briefing, to include an explanation of tow duties**,** prior to operational training for set up and auto tow launch operations. This includes actions on both ends of the auto tow line (auto tow end and glider end).

   c. Trainees must have at least three glider flights involving the 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 5 auto tow launches in the **Auto Tow Driver** position, 5 auto tow launches in the **Observer/Radio Operator** position, 2 auto tow 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 2 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 tow crew members will maintain documentation displaying Auto Tow Training and recurrent auto tow activity.

g. After completion of minimum training requirements and when the instructor is satisfied that the trainee is competent to safely conduct unsupervised auto tow launches, the instructor will submit the trainee as "Qualified" in Ops Quals "Pilot > Prerequisites" section indicating successful completion of auto tow launch training, as applicable. Next, the trainee will be available for wing or higher commander designation/appointment in Ops Quals.

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

I verify that the trainee has successfully completed the above requirements and is competent to perform the duties of Auto Tow Operator / Auto Tow Crew Member (circle one).

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

Date Instructor submitted trainee's "Qualified" data into Ops Quals: _____

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For Instructor / Evaluator Candidates:

I have conducted an evaluation and verify the Instructor / Evaluator (circle one) candidate is competent to safely and effectively perform the indicated duties pertaining to auto tow equipment.

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

Date Evaluator submitted candidates "Qualified" data into Ops Quals: _____

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Notice: Non-CAP auto tow operators must have successfully completed verifiable training from a legitimate aviation organization (SSA, aero club, contracted glider tow company, etc.) to be considered qualified to perform tow duties for CAP members or CAP aircraft. The FRO will confirm the qualification of the tow operator prior to glider sortie release.

## Attachment 5 –SSA/CAP MOA

MEMORANDUM OF AGREEMENT
BETWEEN
THE SOARING SOCIETY OF AMERICA, INC.
AND THE CIVIL AIR PATROL

THIS AGREEMENT is executed and delivered by and between The Soaring Society of America, Inc. (SSA), a nonprofit organization which seeks to foster and promote all phases of gliding and soaring on a national and international basis, and the Civil Air Patrol (CAP), a charitable non-profit corporation created by an act of Congress, which seeks to support America's communities with emergency response, diverse aviation and ground services, youth development, and promotion of air, space and cyber power.

A. PURPOSE: The purpose of this Memorandum of Agreement (MOA) is to define and establish procedures and practices for cooperation between SSA and CAP to promote soaring, aerospace education, and aviation development of America's youth.

B. MUTUAL COOPERATION: SSA and CAP commit to the formation of a joint working group appointed by the SSA Chairman of the Board of Directors and the CAP National Commander. The working group is tasked with the responsibility of program development, operational review, evaluation, and modification, as appropriate to achieve mutual goals. With the activities and privileges listed below SSA agrees to support and promote CAP's cadet soaring activities and programs. In return CAP agrees to make reasonable efforts to implement and promote the programs identified in this MOA.

C. AREAS OF COOPERATION: Working within the policy and guidelines of each organization, SSA and CAP agree to:

1. Appoint individuals and working groups at the national level to accomplish direct coordination and expand opportunities in supporting efforts and programs designated to increase CAP glider operations and SSA efforts to promote soaring by America's youth.
2. Encourage attendance at meetings of the other organization to facilitate mutual education and exchange of information on SSA/CAP related activities, including the club/ unit level.
3. Provide educational support for SSA/CAP selected joint activities while exploring and developing opportunities that offer an ongoing aviation experience along with non-flight based aviation education to CAP and SSA youth programs.
4. Support efforts to promote SSA and CAP organizational goals for membership growth.
5. Maintain the highest level of commitment to programs that ensure safe, high quality, joint soaring activities.
6. Share resources in such a manner that furthers the purpose of this agreement. NOTE: Resources must be operated in accordance with existing policies of the CAP and SSA. SSA clubs and CAP units are encouraged to work together for joint flying events, but aircraft, vehicles and other equipment must remain under the control and operation of appropriately qualified members of the owning organization. This does not prohibit members of each organization flying aboard each other's aircraft when properly approved as outlined in CAP and SSA policies, or assisting with other ground activities.

7. Provide SSA members the opportunities to act as mentors for emerging CAP glider operations to enhance standardization and safety.
8. Capitalize on program generated opportunities to promote CAP and SSA organizational awareness within the aviation community and the general public.
9. Support and continue to develop and utilize educational products designed to enhance the knowledge and safety of soaring related activities, such as the online Tow Pilot and Wing Runner Courses.
10. The SSA agrees to engage and reinforce eligible CAP Cadet interests in soaring through:
    a. Presentation of a SSA/CAP Certificate recognizing the Cadet's first glider flight.
    b. Invitation to CAP Cadets to take advantage of the free SSA Cadet Introductory Membership, until their 18th birthday, which includes:
        i. Three copies of Soaring magazine
        ii. Participation in the SSA Badge Program
        iii. Eligibility for SSA Flight and Academic Scholarships
        iv. Participation in SSA Digital Media including online archives of Soaring magazine, member use of the SSA web site, personal blog space, SSA electronic newsletters, and SSA social media sites.

D. FUNDING AND LIABILITY:

1. With regards to program funding, a primary task of the joint working group will be to develop an operations plan that details joint and individual funding responsibility for each organization and individual program participants. All funding and liability issues will require final approval by each organization's governing body.
2. Both SSA and CAP agree that a major goal for the program is to establish the operations as authorized CAP activities IAW current CAP regulations. Liability issues will be identified, addressed, and resolved by the joint working group and each organization's corporate legal counsel prior to the commencement of operations.

E. TERM & CANCELLATION: This MOA becomes effective when signed by all parties or their designated representatives and supersedes all previous agreements between SSA and CAP. This MOA shall be amended in writing by mutual agreement of the parties. Periodic review is required every five years from the effective date. This MOA shall remain in effect until superseded or rescinded by either pa1iy to the agreement. Either party may terminate this agreement by providing 90 days written notice to the other party which shall be mailed to the addresses shown below:

Chairman of the Board of Directors
The Soaring Society of America, Inc.
P.O. Box 2100
Hobbs, NM 88241-2100

Chief Operating Officer
Civil Air Patrol
1 05 S. Hansell St., Bldg. 714
Maxwell AFB. AL 36112

Nothing in this Agreement shall modify or substitute any applicable organizational regulations and bylaws or operating policy. Effective Date: 17 August 2013.

Richard Maleady
Chairman of the Board of Directors
The Soaring Society of America, Inc.

Maj. Gen. Charles L. Carr, Jr.
National Commander
Civil Air Patrol

Denise Layton
Chief Administrative Officer
The Soaring Society of America, Inc.

Don Rowland
Chief Operating Officer
Civil Air Patrol

## Attachment 6 – SSA CAP First Flight Certificate

SSA CAP First Flight Certificate is to be completed and signed by the glider orientation or instructor pilot.

## Acknowledgments

Many thanks to the following for their input into this document:

Colonel Michael Jay Murrell – Deputy Chief of Staff for Operations

Colonel Jack Buschmann – Glider Program Officer

Colonel Skip Guimond – Deputy Chief of Staff for Support

Captain Sue Martin, Florida Wing

Region representatives of the National Glider Team

Contributing members of glider custodial wings

Terry Raymond – Chief, National Operations Center, CAP National Headquarters

Joe Piccotti – Chief, Aircraft Operations, CAP National Headquarters

And, all of those who ran, contributed to and promoted the glider programs before us.