GREATER BOSTON SOARING CLUB

MEMBERSHIP MANUAL

Rev: 07/20/2012

TABLE OF CONTENTS

REVISION HISTORY

Date	Who	Changes
3/10/95	Bell, Blom, Boyd, Burnard, Camp, Gray, Marrion, Smith	First Edition
9/16/96	Burnard,Kustes, Lincoln, Orchard	General Revision
10/20/98	Brown, Kustes, Smith, Stauble, Strong	General Revision
4/2/02	Roelke , Strong, Verhulst	General Revision
04/05/03	Joe Schena	General Revision, MITSA History Added,
03/02/08	George Young, Peter Vickery, Ritts Howard, Roy Bourgeois, Scott Lamont, Eric Foertsch, Mark Koepper	General Revisions, "Ground Procedures Manual" referenced, Various sections changed to conform to the "Ground Procedures Manual, Section 3.2.12.3 Cross Country Pilots - Final Glides. Updated, Section 3.4 - Special Group Events added, Section 5. 4.1 - Logger Duties Updated Appendix A - Rate Sheet updated to 2008, Appendix B - SIGN-UP LIST updated, Appendix C - FLIGHT LOG & Procedures updated , Appendix F - ATV deleted
07/06/12	George Young Eric Foertsch Dwight Schirmer Scott Lamont Ritts Howard Ira Bliden Ray Williams Pierre L'Heureux Dave Simmons	General Revisions - Grammar & format Section 2.0 History - MITSA section updated Section 1.3 Equipment – Glider & Winch added Section 1.4.1 Encampments added Section 1.4.2 Winch operations added Section 1.6 Membership - Guest, Tow Only & Mutual added Section 3.1.1 Scheduled flying - Winter flying Section 3.1.3 Unscheduled Flying - Winter flying Section 3.2.1 Flying - Consecutive student instructional flights Section 3.2.1. Flying - BFR date requirement on sign up sheet. Section 3.2.12.2 RW 16 IP 1500 MSL Section 3.2.13.1 landing Area - Winter Asphalt runway use Section 3.2.13.2 Landing Technique - Ref for other gliders Section 3.3.2 First flight in GBSC Glider - Requirements added Section 3.3.3 Cross-Country Flights - First retrieve free Section 3.3.5 Towing Non-GBSC club Gliders – Added Section 3.3.6 Encampments – Requirements added Section 3.3.7 Aerobatics – added Section 3.5 Visiting Pilot Requirements - added Section 3.6 No Fly List - added Section 3.7 Intro flights - added Section 4.3.4.2 Tow Plane releases - clarified

		Section 4.5 Emergency & Incident reporting - added Section 5.1 SFO duties – mentoring added Section 5.6 Post flight Ops – Appendix D referenced Section 5.3.2 SFO Duties - Appendix D referenced Section 5.6.2 Prospective New Members – Application forms on line Section 7.3 Assigned tow pilot – Inspect winch rope added Section 8.2 Aircraft Status Board – Web based version added Appendix A Rate Sheet - Updated 2012 Appendix C Flight Log - L-23 N922SB added Appendix D SFO check lists- Updated no signature required

Formatting Note:

In Section ***3, Flying*** and elsewhere, subjects in which safety deserves special emphasis are indicated in bold ***italics.***

1 OVERVIEW

1.1 Introduction

Welcome to the Greater Boston Soaring Club (GBSC) -- an outstanding organization involved in the ultimate aviation sport.

This manual, commonly referred to as *The GBSC Membership Manual*, provides much of the background information necessary for safe, efficient, and enjoyable glider club operation. It is a useful resource for new members as well as veterans. The manual is organized into eight sections; the first two provide background information, the next two explain operational procedures and policies, and the last four explain personnel functions:

1. OVERVIEW - Provides an introduction to the club, its organization, and membership.
2. HISTORY - A brief history of GBSC.
3. FLYING - Discusses issues relative to flying GBSC gliders.
4. GROUND OPERATIONS - Explains operations at Sterling Airport. All members are expected to be familiar with the material in this section, and the Ground Operations Manual.
5. LOGGER AND SENIOR FIELD OFFICER (SFO) - Discusses issues relative to controlling the ground operations at Sterling Airport. All members should be familiar with this material.
6. FLIGHT INSTRUCTORS - Discusses issues and policies concerning club flight instructors. All flight instructors are expected to be familiar with the material in this section.
7. TOW PILOTS - Provides information on the tow plane, towing at Sterling, and tow pilot related issues and procedures. All tow pilots are expected to be familiar with the material in this section.
8. SHIP CAPTAINS - Discusses activities necessary to maintain airworthiness of the aircraft.
9. MITSA JUNIORS PROGRAM.-.See Bylaws.

While the SFO, Flight Instructor, Tow Pilot, and Ship Captain sections are targeted at those particular groups, there is information in all sections, of use to the entire membership.

The manual is provided in PDF format via the GBSC website. Notices of updates are normally distributed through the club's *Towlines* newsletter as well as the emailing list. GBSC is a dynamic organization with a dynamic flying environment therefore, it is very important for each member to have the most up to date information, rules and procedures. Once notified of a revision, it is the responsibility of each member to review and understand any additions or changes. The revision should be printed and inserted into their personal copy of the GBSC Membership Manual.

1.2 The Airport

GBSC operates out of Sterling Airport, located in Sterling, Massachusetts. Sterling Airport has a 3000 foot paved runway (runway 16/34) and a grass runway immediately adjacent to it.

Car Parking: The airport management has designated the space behind the T-hangar as the car parking area for gliding club members and guests. You may enter this area either from the end of the main airport parking lot or through the access path just before the main airport entrance. Under no circumstances should any glider pilot park in the main parking area or south of the GBSC clubhouse.

Access to the flight line: With the amount of soaring pilots now at the field, it is unreasonable to expect the airport management to be happy with everyone walking through the fence and onto the flight lines:

Runway 34 — All people walking to and from the flight line should walk behind the T-hangar and down the back path leading to runway 34. Spectators and club members whose presence is not actively **required** on the launch grid must remain in the area near the picnic table. With the increased landing traffic on the turf runway, this rule will be strictly enforced.

Runway 16 — Pilots and spectators may walk from the car parking area across the asphalt to the other side of the main hangar. The airport management will be sensitive to an increased number of people walking through the tie-down area, so please be courteous and don't linger. From there, walk over to the helipad, across to the edge of the turf runway and then follow the tree line down to the end of runway 16. As on runway 34, a picnic table will designate the acceptable waiting area for non-flying pilots and spectators. Private vehicles should not be parked north of the glider trailers as that space is needed for aircraft parking.

1.3 The Equipment

GBSC owns the following aircraft:

- One Cessna L-19 Bird-dog (tow plane)
- Two Piper PA-25 Pawnees (tow plane)
- One Schweizer 2-33 (two place trainer)
- One Schweizer 1-26E (single place, low performance, 23:1)
- Three Blanik L-23's (two place, moderate performance, 30:1)
- One SZD 50-3 Puchacz (two place, moderate performance, 30:1)
- One Blanik L-33 (single place good performance, 33:1)
- One Schweizer 1-34 (single place, good performance, 34:1)
- One Pilatus B-4 (single place, good performance, 35:1)
- One single drum winch (On Loan from Post Mills)

The club also owns several open and closed trailers for ground transport of gliders. Electric & Gas carts are used for towing both club owned and private owned gliders about the airport. Please check the GBSC website for the most up to date status of this equipment

The success, growth, and longevity of GBSC are due to its self-sufficiency. Owning three strong, capable tow planes and a fleet of mixed performance gliders allows the club to operate anywhere there is an adequate runway.

1.4 Flying

GBSC flies out of Sterling Airport on Saturdays, Sundays, and certain weekdays & holidays from the first weekend in April through mid to late November. Normal operations start at 1000 and continue as long as members wish to fly. By prior arrangement with a tow pilot (and instructor, if required), members wishing to get an earlier start may do so.

Flights are limited to an hour when someone is waiting for the glider, with the following exceptions: the B-4 and the L-33 will be limited to two hours when another member is waiting for the aircraft. There is a per-flight fee that depends on the glider being flown and the altitude of the tow. Instruction is offered free of charge. The tow fee schedule is included on the GBSC Website.

The Sterling Airport doubles as the Sterling Fair grounds. The Sterling Fair is held the week after Labor Day every year. During this time all flight operations at the Sterling airport are suspended. During this time, GBSC packs up all assets and moves to another location. This is a great opportunity for members to experience flying in a different location.

1.4.1 Encampments

The club traditionally organizes a number of encampments. Ridge encampment in Mifflin, PA is generally organized in the early spring and in the fall a September Labor Day encampment in Franconia, NH, and in October a Mt. Washington Wave Camp at Gorham, NH.

Members are reminded that they are responsible for the glider they take to an encampment and are to return it to Sterling and reassemble the glider as soon as possible after the encampment has ended.

1.4.2 Winch Operations

The club also periodically conducts winch operations at Tanner Hiller airport 8B5 New Braintree, MA

1.5 Organization of Club

GBSC is a non-profit corporation. Its charter is to promote the sport of soaring. The MITSA Juniors Program was developed to educate young people within the context of the sport of soaring. And through fundraising and contributions defray the cost of this education so it is available to all young people, regardless of financial status.

The club has a Board of Directors comprised of 3 officers (President, Treasurer, and Clerk) and 4 directors. They meet as needed (the majority of business is conducted via email) and oversee operation of the club. The Board appoints various club members as committee heads and committee members. There are committees to handle operations, aircraft maintenance, flight instruction, and towing. All tow pilots and flight instructors are club members.

Club communications, for the most part, occur through e-mail, the club Website (www.soargbsc.com), the *Towlines* periodic newsletter, postings at the airport, and word-of-mouth. There is an Annual Meeting held in winter where the officers and directors for the coming year are elected. Other club business and plans for the upcoming season are also discussed.

1.6 Membership

GBSC offers the following types of membership:

1. Regular Members - are those members at least 18 years old.
2. Family Members - are in the immediate family of Regular Members.
3. Junior Members - are those members under the age of 18.
4. MITSA Juniors Program Members – Members ages 13 to 18 enrolled and participating in the MITSA Juniors Program.
5. Student Members - are those members attending school full time up to Undergraduate status.
6. TOW pilot / Instructor Members – are those members who engage in towing & instructing activities on a regular basis.
7. Temporary Private Members - have their own glider and who may join the club for one day, up to a limit of five times per year. Cannot fly club gliders.
8. Introductory Membership - temporary one day membership for introductory glider lessons.
9. Guest Membership – temporary membership for the guest of a club member who will fly with a club member. There is no fee for this membership.
10. Tow Only Membership – for members who do towing only and do not fly club gliders. Tow only members are at the discretion of the chief pilot.
11. Mutual Membership – As of 2010, an agreement exists among a number of New England region clubs to allow members to obtain tows at other clubs. Guests must be prepared to demonstrate to the host club insurance coverage for the glider they are flying and membership in SSA and their home club, in our case GBSC. Tows will be charged at the Host clubs rates and billing will be done by the pilot's home club or by cash depending on the host clubs billing methods. Participating clubs: CT SA, Franconia SA, Mohawk SC, NE SA, Post Mills SC, Sugarbush SA

Appendix A is the GBSC Rate Sheet. It contains the annual dues and initiation fee structure for all the different types of membership and is published on the GBSC Website. A bill for a portion of the annual dues (and initiation fee, if applicable) will be sent in early January and should be paid promptly."

There are a few more membership obligations:

- All members are required to be members of the Soaring Society of America (SSA). This allows the club to purchase insurance at a discount and is a requirement of our insurance policy.
- Club members not otherwise performing major duties are assigned SFO/Logger duty for a full day, on rotation, typically two to three times during the season.
- Club members will be asked and are encouraged to participate in one of the club's committees.

1.7 Disclaimer

Much thought and energy has been expended to produce an accurate, complete, and hopefully easy-to-read manual. If any portion of this manual is in conflict with past, existing, or future Federal Aviation Regulations (FARs), the FARs obviously take precedence. As always, compliance with the FARs is the responsibility of the pilot in command(PIC). It is the responsibility of the PIC of any GBSC aircraft to make sure that they posssess any required identification while on the airport property. In addition, all members should stay up to date regarding temporary airspace restrictions due to national security. All pilots are expected to get a complete preflight briefing before each day's flying.

2 HISTORY

In 1973, four glider pilots (Chris Bogen, Jose Segerra, Dezi Hamvas, and Peter Arnet) joined to form the Greater Boston Soaring Council in Pepperell, MA. The Council was a commercial operation that intended to consolidate and support the activities of the Monadnock (FAA), MIT, and other struggling soaring clubs. The Council, led by Chris Bogen, started with a Cessna L-19 tow plane, and two Schweizer SGS 2-33's. The aircraft were paid for, in part, by members who signed notes and by Dezi Hamvas who mortgaged his home. Although the Council was a commercial operation for the various soaring clubs, its primary intent was not to serve the general public with commercial rides.

The Greater Boston Soaring Council was not able to fulfill its intended purpose, nor did any ride business develop to help finances. Continued operation of the Council eventually became a financial burden on the members. Furthermore, the incorporation of the Council was becoming unworkable with all the quarterly reports demanded by the state. Thus, after less than one year the members decided to liquidate the Council and reorganize as a club.

During the reorganization, original member Chris Bogen dropped out. However, the remaining members recruited Joseph Grasso and John Zachistol and formed the Greater Boston Soaring Club (GBSC). Through vigorous recruiting, the club more than doubled its membership during the first year. Membership dues were $200 annually and tows to 2500 feet were only $8. Additional revenues needed by the club were raised from interest paying bonds that new members were urged to buy.

GBSC continued to operate at Pepperell for the next two years (1973-1975). During this time a dispute between the landowner and jump school operator threatened to curtail operations. The club tried to assist financially in resolving the dispute but lost a considerable amount of money in the process. Eventually the landowner went to court over the lease and an order was handed down to close the field to all operations. During the off season, members searched for a new location to operate and settled on Sterling, MA, for the 1975 season. Members of the old Monadnock Soaring Club joined GBSC and brought their Blanik with them. During the stay at Sterling, the club also obtained a Lark and a SGS 1-26. However, one SGS 2-33 was lost in a non-fatal accident and the 1-26 twice suffered heavy damage.

Sterling was also home to a helicopter operation that eventually became incompatible with glider operations. Thus, GBSC moved to Groton where it operated for a short time in late 1981.

Because of rising rent at Groton, GBSC temporarily moved the club to Plymouth, New Hampshire. for the winter of 1981-1982. Finally, GBSC moved back to its original location at Pepperell, MA.

After moving to Pepperell, GBSC moved forward with improvements in capital equipment and increases in membership. In 1990, GBSC added an SGS 1-26E to its fleet of two 2-33's, two Pilatus B-4's and the L-19 tow plane. A Blanik L-13 was added in early 1993 when a former member offered to sell it to the Club. Improvements were made to the Pepperell airport by GBSC. In 1992 GBSC entered an agreement with the current airport owner to pave the runway in exchange for several years of rent. During these improvements a new staging area for gliders was leveled but not paved at the southwest end of the runway. Having operated out of two old trailers for many years, GBSC decided to build a clubhouse in 1993. With the help of club volunteers, Arthur Ducharme designed and supervised construction of the building located next to the river.

Also, during 1993, Capt. Eli's Glider Service began operation as a commercial service at Pepperell. Capt. Eli, a.k.a. club member Ritts Howard, reached an agreement with GBSC to do all commercial and introductory rides and also to provide weekday towing for the club. This helped alleviate long waits during busy flight operations. The second tow plane also helped the club during unscheduled tow plane repair.

Throughout the years GBSC sawa steady but small increase in membership through recruitment and word of mouth. However, the 1993 and 1994 seasons saw a great influx of new members when the Salem, NH-based commercial soaring operation closed its doors after more than 30 years of operation. Membership jumped from approximately 60 to more than 80 as Salem pilots, looking for a nearby place to fly, joined the club. During 1996, membership had grown to 93.

Membership stayed relatively constant during 1997 with gainers matching losers. Ritts Howard decided to phase out Captain Eli's Flying Service. GBSC purchased his Pawnee PA-25 tow plane and provided tows to him for the remainder of the season. Pepperell airport management insisted that GBSC personnel indemnify them in form of a waiver that was deemed unreasonable. Sufficient members declined and the club moved back to Sterling Airport for the start of the 1998 season. Sterling was now the home of both the MITSA and GBSC soaring clubs.

Although GBSC has not sponsored a soaring contest since the Sterling days, it does encourage cross-country soaring and participation in the SSA badge program. Several members are accomplished contest pilots at the regional and national level and travel around the country flying in various contests. In 1991, member Bruce Dyson became the U.S. Standard Class champion, earning him the honor of joining the US National Soaring Team and flying at the World Soaring Championships in Uvalde, Texas.

For many years GBSC has sponsored an annual trip to Franconia, New Hampshire, for some excellent ridge, mountain, and thermal soaring. Usually held on Labor Day weekend, the beautiful mountain scenery of Franconia provided a welcomed break from the flat lands of Sterling. In the late fall the Franconia group moves to Gorham Newhapshire for "Wave Camp" at the base of Mt Washington. Also, on an informal basis, members occasionally take a B-4 to Pennsylvania or other glider ports to experience soaring in different environments.

During 2002, a proposal was made to combine the recreational aspects of GBSC and MITSA. this would allow each organization to better serve their stated purpose. GBSC as the principle provider of recreational soaring aircraft and tow services, and MITSA as the principle provider of educational aircraft. Over the course of the next several months, the members of both clubs voted and both boards approved the proposal. MITSA was folded into GBSC. The new GBSC now has 160 members.

Glider clubs at MIT date back to Nov 1909 with Elisha Fales offering the club the use of his glider. In its early years, the club flew in and around Boston including Harvard's Soldier's Field, Newton and Waltham. Prior to the formation of MITSA, gliding at MIT was under the auspices of MIT's Aeronautical Engineering Society (AES). By 1922, AES was in the forefront of designing gliders including the glider designed by Dr Otto C. Koppen and Edmond T. Allen which they brought to meets at Clermont-Ferrand, France & at the Wasserkuppe, Germany. The club was very active prior to WW2 and did extremely well at meets in Harris Hill in Elmira, NY, including a second place finish by Walter Lob flying a Franklin PS2 "Allaire." (Note: Harris Hill was named after Hank Harris, an AES member). Walter returned to MITSA in the late 1970's as an active member and instructor. The club was very active in the 1950's with many notable members including Dick Seaman, Bertha Ryan, Lloyd Licher, Walter Cannon, Sture Blom, Bernie Paiewonsky, Dick Comey, Leonard Parker, and many others. In the early 1960's gliding at MIT ceased.

A successor to these clubs, MITSA was organized at M.I.T. in 1968 through the efforts of Ernst A. Steinhoff who arrived as a visiting professor to find no glider activity. Ernst held world records in Germany before WW II. He secured the support of Charles Stark Draper, head of the Aeronautics department, and other faculty, who undersigned the purchase of a Ka-7 and a Schweizer 1-26. Arthur LaPointe, a former Navy pilot, was a key figure in the early building of the club. Steve and Ann Fried (later to become Yankee Aviation at Plymouth) provided tow plane services followed by Joe Blucher. Larry Ryan, and Ken MacDowel purchased the Cessna 150 Tow Plane from Joe prior to MITSA buying it. First flights were made at Groton Airport, a private field, in the spring of 1969, and the club moved to Sterling in August. When winter came, the club followed the Frieds to Plymouth.

In late 1970, MITSA attempted to find a home at Taunton airport, but was rejected after a few weeks due to the limited space. It then moved to Norfolk Airport where it was to operate successfully for the next eight years, acquiring a Blanik L-13, a Schweizer 1-34 and two Schweizer 2-33s. A used 2-place Slingsby was bought, but it was complete loss from an emergency landing after a low altitude release before many members had a chance to fly it. The Brown University club shared operations here for a time, using their L-13.

In April, 1978, the club moved to Mansfield Airport and continued operations there for 13 years. During this period MITSA bought and later sold its only glass ship, a two-place Janus. In 1991 power traffic was deemed reason to seek a new venue. Briefly the club operated again at Norfolk Airport, and then returned to its home at Sterling Airport. At this time, the 2-33s were sold in favor of acquiring two new Blanik L-23 trainers, and a single-place L-33.

Originally designed to be a training club for student pilots, especially those from M.I.T. and other New England schools, MITSA opened its doors to anyone with a serious interest in flying gliders. As years passed, the ties with M.I.T. weakened, and the club began to take on the characteristics of any glider club, including numerous experienced private owners. This most recent change, of combining the recreational services with GBSC has allowed the MITSA organization to return to its training charter.

Although this is just a brief chronological history of the Greater Boston Soaring Club, the real history belongs to the stories told under the trees next to GBSC clubhouse. Come out to the field, take a flight, and talk to the long-time members for the really interesting history.

3 FLYING

3.1 When Does GBSC Fly?

3.1.1 Scheduled Flying Days

The GBSC flying season begins the first weekend in April if the field is usable (occasionally, it is too muddy to get the gliders out). The normal season typically ends mid to late November or when the field becomes unusable. The specific date is decided by the board in October in time to notify members of the scheduled decommissioning date. Limited winter flying is available depending on member interests.

Scheduled flying days are Saturdays, and Sundays during the GBSC flying season. Flying begins at 10:00 a.m. and continues as long as members wish to fly. Should a member (particularly students) wish to start early it is encouraged that they contact the field personnel and schedule an early start. Early morning air often provides the best conditions for flight training.

An Instructor, a Tow Pilot, a Senior Field Officer (SFO) and a Logger will be assigned for each scheduled flying day. Members of the MITSA Juniors Program will be assigned to work the grid and retrieve gliders. To maintain a safe and efficient operation, it is imperative that all assigned personnel show up.

MITSA Juniors Program members receive training in the early morning and late evening during normal weekend operations as well as during dedicated "junior's-only" weekday evening operations in the summer months.

3.1.2 Inclement Weather

Normally, GBSC flies as long as there are VFR minimums. There is no formal mechanism for remotely determining whether or not GBSC is flying. Members can monitor e-mails posted to GBSC Talk, or try calling the filed Cell Phone (978-944-0801)

3.1.3 Unscheduled Flying

Midweek Flying – By prior arrangement with a tow pilot, members may fly during the week. Solo students may fly with approval from a GBSC flight instructor who must be present at the start of the flight. Gliders are flown on a first-come-first-serve basis with normal weekend time rules applying. Midweek flying is coordinated via the winter/weekday email list. If you are interested in weekday flying contact the GBSC List master Tony Verhulst (verhulst@comcast.net) and he will add you to the list.

The individual member organizing any one weekday operation assumes all the responsibilities of the SFO and logger on that day: See the SFO section for more details.

Winter Flying - Depending on member interest, the 2-33, 1-26 & a tow plane may be left out for winter flying. In order to safely leave equipment out for winter flying snow and ice must be removed shortly after storms to keep the equipment from being damaged and to make it accessible for flying. Members who sign up for winter flying are assigned to clear snow and ice for one week at a time on a rotating schedule. Those members signing up for winter flying MUST adhere to their assigned schedule for snow removal from the gliders.

3.2 Flying a Glider At Sterling

3.2.1 Signing up for a Glider

The Logger maintains a sign-up list. This is where you must sign up for a glider and/or tow. Sign up procedures for club gliders and private tows are simple. The pilot does the following:

- Adds his/her name to the bottom of the list
- Places a check in the "instructor" column if an instructor is needed
- Places a check in the desired aircraft column or writes in the contest or N number for the Private ship being flown.

As of August 1, 2012 primary student pilots may sign up for two consecutive instructional flights the total duration of which shall be within the one hour limit. Primary students wishing two consecutive instructional flights will sign up on two consecutive lines on the sign up sheet.

The sign-up list is used as a baseline for sequencing club gliders. The SFO will assign your position on the grid.

- You must be ready to fly

It is the pilot's responsibility to monitor the grid and to be fully ready when it is his/her turn to launch.

An instructor is assigned for each flying day. To optimize instructor and aircraft utilization, the pilot needing an instructor takes the initiative in making contact with the instructor prior to the flight.

Note: Pilots requiring an instructor for a biennial flight review (BFR), must develop a plan with the instructor in advance. Pilots requiring an instructor for more than one flight need to coordinate such activity with an instructor and the SFO.

3.2.2 Takeoff Issues

It is the Pilot in Command's responsibility to ensure the following:

- First and foremost, the safety of the ground crew and the equipment is the responsibility of the PIC.
- Every glider should have a functioning radio. ***Due to the high traffic nature of Sterling, it is strongly encouraged to have a working radio.***
- The 1-26 requires a weak link, the 2-33 and 1-34 require an adapter.
- The hook-up to both the glider and the tow plane must be performed by a club member specifically trained in this procedure. It is the Pilot in Command's responsibility to ensure that the proper ring (including a weak link or adapter) is at the glider end. ***If in doubt, release the rope and request a new hook-up.*** The 1-26s, 1-34s and the 2-33s require a large Schweizer ring (the end with only one ring) to be attached to the glider. All other club gliders require the TOST Ring (smaller ring on the end with two rings).
- Advise the wing runner of any special procedures, e.g. wing lowered or lifted for crosswind conditions, extra long run when heavy with water, not holding the trailing edge of the wing when the ailerons extend to the wing tip. If you do not consider the wing runner able to assist in a safe launch, request a replacement.
- ***If at any time in this process, you change your mind, pull the release knob first, then deal with the problem.***

3.2.3 Takeoff

When a pilot is ready for takeoff, the following procedure is used:
(Use colored paddles to aid visibility of SSA approved hand signals)

- After the tow rope is connected to both the tow plane and the glider, the wing runner signals the tow pilot to take up slack (arm swung back and forth like a pendulum).
- If the glider has water ballast the pilot may request the wing runner to level the wings while the slack is taken out. (Leveling the wings helps ensure equal water distribution in the glider.)
- When slack has been removed from the tow line, the wing runner stretches both arms horizontally at shoulder height signaling the tow pilot to stop.
- The wing runner does a slow deliberate visual inspection of the pattern, looking for landing gliders or planes, and checks to see that the runway is clear
- If the pattern & field are clear, the wing runner responds, “Pattern & Field clear!”
- If the pilot is then ready, she/he signals ready for takeoff with a "thumbs up".
- The wing runner lifts the wing.
- The glider pilot wags the glider’s rudder.
- The wing runner signals the tow plane “clear for takeoff” with a full circular motion.
- The tow pilot, upon seeing signals from ***both***, the wing runner and the glider pilot, wags the tow plane’s rudder and begins the takeoff roll.

The radio may be used in conjunction with the above hand signals, i.e. the glider pilot can tell the tow pilot “take up slack” and “ready for takeoff”.

3.2.4 Spoilers Deployed on Tow

There is much concern and debate over unintentional glider spoiler deployment while on tow. Glider pilots need to monitor their climb rate on tow and periodically verify their spoilers are closed. If a glider’s spoilers are deployed, GBSC tow pilots may do any or all of the following:

- alert the glider pilot via radio
- alert the glider pilot by rapidly wagging the tow plane rudder
- wave off the glider (near the airport and at a safe altitude, if possible)
- release the glider (near the airport and at a safe altitude, if possible)

3.2.5 Class D Airspace

Small airports, such a Worcester, with operating control towers, are Class D Airspace. This airspace has a radius of four nautical miles and extends from ground level to 2500 feet AGL. See a current sectional chart for details.

An aircraft must establish radio contact with the control tower prior to entering Class D Airspace. Failure to do so, is a violation of the FARs.

3.2.6 Radio Procedures

This section applies specifically to radio procedures when operating out of Sterling Airport. An overview of radio usage is provided in Appendix H, *Radio Usage.*

The Common Traffic Advisory Frequency (CTAF) for Sterling Airport is **122.9**. It is important to keep transmissions clear and short to avoid congestion.

Set your radio to the Sterling CTAF when doing the following:

- taking off
- on tow
- landing
- communicating with the tow plane
- within two miles of Sterling Airport
- contacting GBSC base operations

For communications between gliders beyond 2 miles from Sterling, the proper frequency is **123.3**.

3.2.7 Boxing the Wake

The accepted technique for boxing the wake is to first descend through the wake followed by going clockwise around the wake. This technique allows the tow pilot to differentiate glider steering from the initial movement when boxing the wake.

Alternate accepted wake boxing techniques may be used upon Tow Pilot notification.

3.2.8 Glider Steering

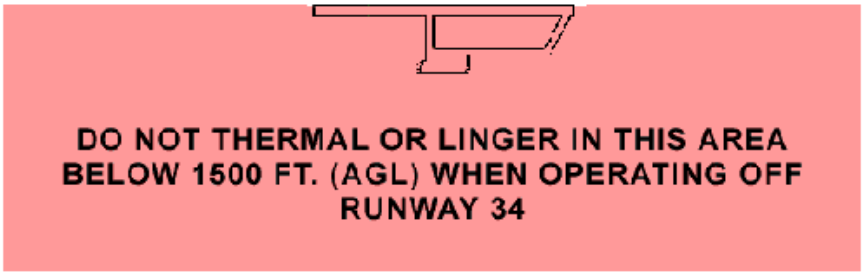
Glider pilots steer the tow plane by pulling the tail of the tow plane to the left or right. The tow pilot establishes a shallow turn in the yawed direction and waits for the glider to return to the centerline, before leveling out and establishing a new heading.

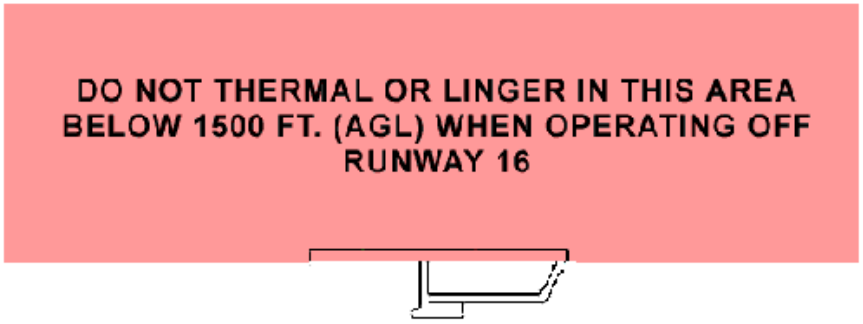
3.2.9 Rope release technique

Do not release from tow unless the airport is in sight or the glider position is fully understood via ground references, and within gliding distance of the airport. Release should occur with normal load on the rope, avoiding high loads and light loads. Rope release should be visually verified prior to initiating a shallow, level right turn.

3.2.10 High Traffic Areas

There are two zones in which glider pilots should not linger or thermal to keep out of the way of landing and departing power aircraft.





3.2.12 Glider Pattern

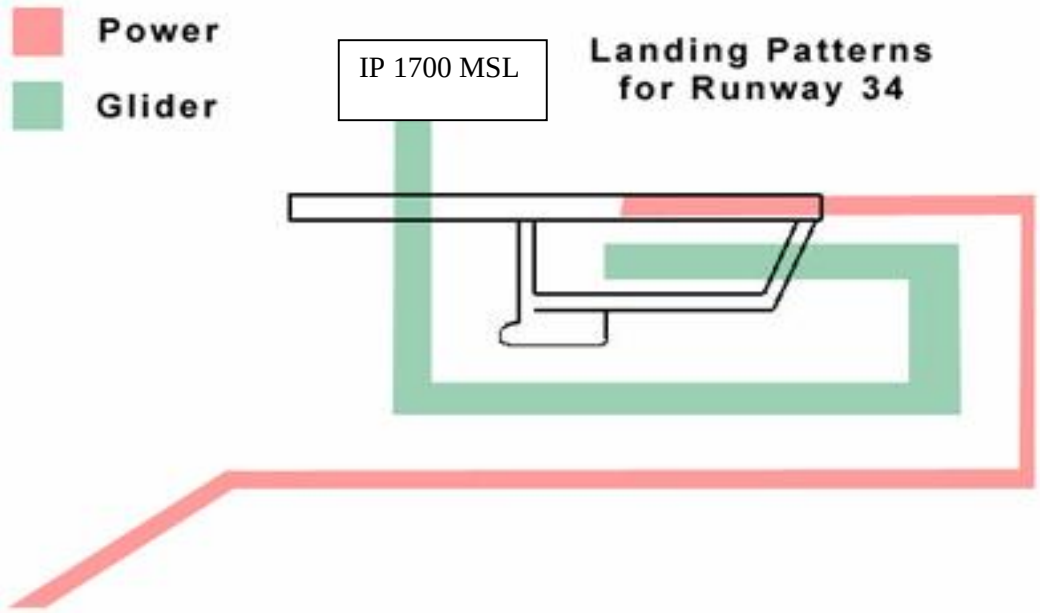
These are general descriptions of the standard landing patterns for both power and glider traffic at Sterling Airport.

In general, all power traffic will make left-handed patterns. Gliders will follow the standard patterns described below. There are situations where a glider pilot may not be able to follow the standard pattern due to lack of height or other conditions. In these cases it is up to the pilot to make the correct decision to keep proper separation and land safely, but these cases should be rare. A glider pilot making low or unsafe patterns may be asked to complete further training or take a check ride with an instructor.

In some cases, instructors may ask pilots to perform non-standard patterns during training or check flights. If you have any questions about different patterns, please talk to an instructor.

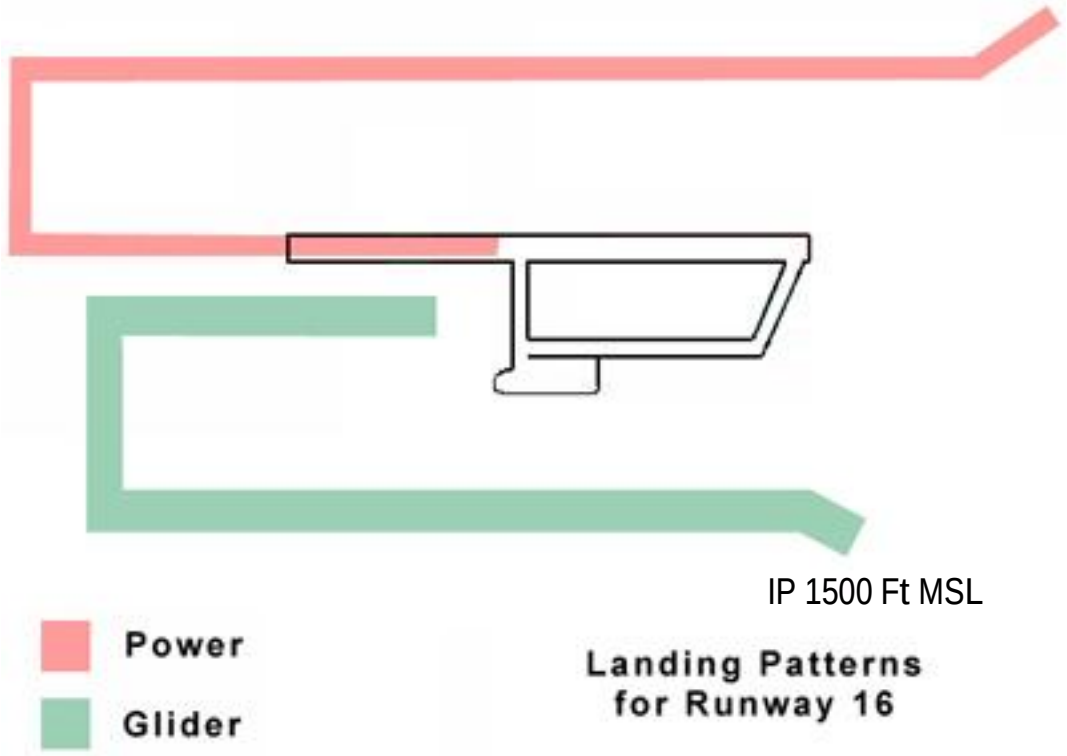
3.2.12.1 Patterns for Runway 34

Pilots landing gliders on runway 34 will fly a left-hand pattern, inside the normal power pattern:



3.2.12.2 Patterns for Runway 16

Pilots landing gliders on runway 16 will fly a right-hand pattern.



3.2.12.3 Cross Country Pilots

Remember, there are training flights going on throughout the day. In a lot of cases there will be pilots with few hours and low experience in the area around the field. It is your responsibility to insure good separation if you choose to merge into the pattern after returning from a cross-country flight.

No low level / high speed "contest finishes" are allowed within 1 mile of the airport. A pilot practicing such a maneuver away from the airport must complete the practice finish and return to pattern altitude before entering the pattern area. High speed pull-ups to crosswind, downwind, or base pattern legs are prohibited.

3.2.13 Landing

3.2.13.1 Landing Area

Sterling has two runways, the main runway (asphalt, 34R & 16L) and the grass area adjacent to the West Side of the main runway (34L & 16R). All glider landings will take place on the turf runway. Unless specifically approved by the Instructor of the day or in an emergency, no glider landings will take place on the asphalt runway. Generally, one or two gliders on the grass do not constitute an emergency. There is a lot of area and you should be able to land with little trouble.

Although Sterling does not have significant vertical obstructions on approach to either runway, there is major ground congestion consisting of people and gliders, and no guaranteed open space short of the displaced threshold. Approaches are to be high, with a steep decent angle and airspeed well controlled (a normal obstacle clearance landing). Available options for runway conflicts include the paved runway and/or landing beyond the cross taxiway. The suggested minimum vertical clearance over any obstruction on the field (Glider/Person/cart etc) is 30 feet. **Shallow low energy final approaches are not to be tolerated.**

Gliders landing on runway 34 should land after the south end of the blue hangers. **Gliders touching down before this point are a serious safety hazard to the launch grid. The SFO is authorized to require additional training for anyone touching down before this line. This is an extremely important point.**

NOTE: The grass is not exclusively a glider landing area. Power planes can and do use the grass for take off and landing. In the case of a power plane staged to take off on the grass, it may be wise to land on the asphalt if you are sure it is clear to do so.

For runway 34, if a tow plane is staged to take off from the grass, it will usually be well off to the right side. When using runway 16, the tow plane will be well off to the left side. In either case there should be plenty of room to land on the grass.

If you know there are other gliders landing behind you, land long and give them space to land.

3.2.13.2 Landing technique

2-33 - The preferred landing technique for the 2-33 is slightly nose high, low energy, skid kept off the ground except for the last 30 feet of rollout (stick full aft prior to skid contact). Deceleration is controlled with dive brakes, then wheel brake, then (in an emergency) allowing the skid to lower prematurely.

Blaniks - The preferred landing technique for the L-23 Blanik is fully arrested descent, touch down is low energy prior to tail wheel contact, roll out on the main gear. Deceleration is controlled with dive brakes, followed by the wheel brake. More than light wheel brake usage when slow can result in the forward fuselage contacting the ground and is only approved during an emergency.

Other GBSC gliders – Consult glider Pilot Operating Handbook (POH) and GBSC Instructor.

3.2.13.3 Rollout

Gliders should land STRAIGHT and level on the grass. Once the glider is firmly on the ground and under control, AND WELL SLOWED DOWN, it may be veered 20 to 30 degrees (no more) to clear the grass area (See 3.2.13.4. *Taxiing Gliders*).

It is important that you clear the center of the runway so that others may land after you. Once stopped, get out and move your glider to the side of the runway. Do not wait for a crew to assist you, most pilots can move even the largest glider the distance required to clear the runway.

Do not leave your glider unattended.

3.2.13.4 Taxiing Gliders

It is very unusual to see ANY type of aircraft make a deliberate and abrupt change of direction while performing a normal landing. **All SFOs are authorized to require additional training for any pilot who creates a hazard because of a "taxiing" glider.**

3.2.14 Glider's Last Flight of the Day

Members taking the last flight of the day in a given glider are responsible for securely tying down the glider. Check with the SFO to determine if you are the last flight of the day.

3.3 GBSC Limitations

3.3.1 First Flight of the Season

At the beginning of the GBSC season, each member must be approved by a GBSC flight instructor before soloing any GBSC gliders.

3.3.2 First Flight in any GBSC Glider

Each GBSC member must be approved by a GBSC flight instructor before their first flight in each make and model of GBSC glider. This checkout requires a log book endorsement for insurance purposes. The pilot should also discuss the flight characteristics of the glider with a member who has first hand experience flying the glider in question. Useful flight characteristic notes may also be found on the GBSC web page.

3.3.3 Cross-country (x-c) Flights in GBSC Gliders

GBSC supports members wishing to fly x-c using club gliders. These guidelines define the procedures for using club ships. It does not address flight skill development as members should work with the instructors as required for their own situation. The SSA badges through Bronze are excellent training templates (although not required).

For this section, the definition of x-c is "any flight that extends beyond 33% of the best no wind glide performance of the glider from the take off airport". (For example, B4 = 35:1 = 7sm per 1000', and 33% of that is 2.3sm per1000' above takeoff.) While admittedly arbitrary, this rule is simple and unambiguous (no excuses for not knowing if the x-c rules apply). If you work the scenarios a bit (for example, 4000' at Fitchburg is on the edge) it feels about right. Of course, this definition is just for enabling these rules and the pilot must always consider the actual flight conditions for safely returning to the field.

Members making x-c flights in club ships are required to review their flight plan with an instructor prior to the flight and after the flight. A Private License or better is required. Flight plan reviews are necessary until the member receives instructor approval for unsupervised x-c flights. The specifics of the review are determined by the instructor and no logbook entry is required. The idea is to keep in touch but allow the pilot to do what he thinks is right.

Landouts at airports for an aero retrieve are most desirable. If aero retrieves can not be ensured, the member should ensure that a proper ground retrieve has been planned (trailer condition, crew, etc.). To encourage new X/C pilots to venture away for the home airport, the aerotow retrieve fee for the very first land out at an airport will be paid for by the club.

Pilots flying club gliders x/c must give the SFO a note containing:

1) The "intended" route

2) The name of whom they have made arrangements with for an auto retrieve (should it become necessary) or a statement that the pilot intends always remain within gliding distance of airports capable of aero retrieves.

3) The pilots cell phone number (if available). Weekday pilots must attach the note to the daily flight log. This requirement is mandatory for all x/c flights in club ships that will not be completed in one hour and encouraged for those less than an hour.

3.3.4 One Hour Flight Limit

Flights in GBSC gliders are limited to one hour. There are four exceptions to this rule:

The B-4 and the L-33 are limited to two hours,

The limiting or extension of flight times on busy days,

Extended flight times when there is no demand for the glider,

Reserving a glider for cross country or badge flights.

The second- exception usually occurs on those days when the soaring is exceptionally good and the waiting list for various gliders is quite long. At the discretion of the assigned instructor and/or SFOs, flight time limits can be applied to certain gliders. Flight times may be reduced to 45 or even 30 minutes, depending on the size of the waiting list. If the line at the grid is getting unmanageable then flight times may be extended in order that the tow pilots may get caught up and reduce the amount of gliders in the grid.

The third- exception occurs when there is no waiting list for a particular type of glider. In this case, pilots can continue flying until someone wants to use the glider. Flying beyond the one hour maximum must be done in the following way:

- The glider pilot informs the SFOs of their intention for an extended flight.
- The onus is on the glider pilot to ascertain nobody is waiting for the glider.
- Just prior to one hour, the pilot contacts GBSC ground on 122.9 to verify there is still no waiting list. If GBSC ground is not responding on 122.9, the pilot lands.
- Beyond one hour, the pilot monitors 122.9 for the duration of the flight and lands within 10 minutes of being called.

An adjunct courtesy to the above rule is that no pilot should be called down if an airworthy equivalent glider is available (even if it needs to be untied and preflighted).

The forth exception applies for x-c flight plans that require more than the standard 1or 2 hour limit for club gliders, the glider may be reserved for as long as necessary to execute the specific flight plan, which may be all day. To reserve a glider, the member notifies the assigned SFO of his intention to fly an x-c task and his need to reserve the glider. Email is good for this, along with a copy to the x-c advisor. The SFO notification may be several weeks in advance, or the day of the flight (in person). Initially, the SFO will permit a maximum of one single place glider reservation per day, on a first requested, first reserved basis. For weekday flights, the tow pilot will fulfill the SFO reservation duties.

3.3.5 Towing Non-GBSC Club Gliders

In addition to towing GBSC club-owned gliders, GBSC can tow any other glider piloted by a qualified GBSC member, regardless of whether the pilot personally owns the glider. This includes temporary 1-Day members who are using their own glider, a borrowed glider, or a glider from another club. Temporary 1-Day members must be SSA members as do all members of GBSC.

3.3.6 Encampments

When you go to any encampment for the first time and want to use GBSC equipment, you have to get familiarization flight from the pilot who flew in this place and is familiar with it.

3.3.7 Aerobatics *(Pending Safety Committee review)*

Pilots
No pilot shall intentionally perform any aerobatic maneuver, including spins, in a GBSC aircraft without meeting the following requirements:

1) The Pilot shall have a logbook endorsement for the maneuver from an instructor qualified to issue such an endorsement. See Instructors below.
2) The maneuver shall be performed only in an aircraft in which the POH allows that maneuver.
3) The maneuver may be performed only in an aircraft which the Board of Directors has certified as available to perform that maneuver. {The POH of a 30-year old metal ship may allow loops, but it can be a really bad idea.}
4) The pilot must have completed an annual check ride with a maneuver-qualified instructor. (Because:
   a) Skills unused deteriorate
   b) Aerobatic skills deteriorate quickly
   C) The margin for error in some of our gliders is small

Instructors
No instructor shall issue a logbook endorsement for an aerobatic maneuver in a GBSC aircraft unless he is approved by the Board to do so.

1) An instructor shall be deemed qualified for a specific maneuver if he:
   a) Receives a logbook endorsement for the maneuver from a recognized aerobatic training organization or operation.
   b) Has received an endorsement from a maneuver-qualified instructor, or
   c) The board has good reason to believe the instructor is competent and current in the maneuver.
2) An instructor shall provide ground and flight training on the maneuver and aerobatics before issuing an endorsement.
3) The ground training shall include the following:
   a) The specific maneuver, including required entry speeds, maximum speeds, required G ranges, maneuver hazards, and maneuver abort procedures
   b) Bail out and parachute use
   c) FAA regulations pertaining to aerobatics
   d) General aerobatic considerations including the effect of exceeding flight envelopes on the aircraft and the subsequent users of the aircraft.

AIRCRAFT
No aircraft shall be used for aerobatic activity (excluding spins) unless the aircraft has:

1) A working G-Meter
2) Has been certified by a *TBD* for the maneuver.

3.4 Special Group Events

All group first flight and special events (including event date, equipment, staff, and discount) need to be approved by the board at least two weeks before the day of the event. A group consists of more than five people.

3.5 Visiting Pilot Requirements & Fees

Check out in club equipment at intro price of $100.00 per flight as needed
$60.00 per flight in his glider which include the tow to 3k
GBSC Day membership
SSA membership for insurance purposes.

3.6 No Fly List

In order to exercise flying privileges the following requirements must be met:

- You must be a member of SSA
- The date of your next flight review (BFR) must be in the GBSC membership profile.
- Your Emergency Contact Information must be in the GBSC membership profile.
- You have complied with the annual GBSC spring Safety program.
- You have not been prohibited from flying for some serious infraction
- Your GBSC payments must be up-to-date.
  Any bill that is overdue by 30 Days and in excess of $100.00 dollars will be considered overdue. If paying your monthly statement in a timely manner is a problem making an advance payment is a good way to prevent late payment from getting you on the no fly list.

If you are not in compliance with any of the above requirements your name will be put on the No Fly list and you will not be allowed to fly GBSC gliders or be towed by GBSC tow planes. The No Fly list will be issued each Friday during the flying season and will be made available to the duty team.

The intent of the No Fly list is to encourage members to comply with the club rules and their responsibilities as members. It would save the club a lot of work if this list did not need to be generated. Do your best as a responsible member to prevent this list from having to be made.

A person can get off the no fly list for late payment if they show up at the field by either contacting the Treasurer regarding the payment issue or paying the overdue balance by cash or check (check preferred) to the duty personnel at the field that day.

3.7 Introduction to Soaring Flights

GBSC offers the general public and persons interested in joining the club the opportunity to experience glider flying in a two place glider with either a commercially rated pilot or flight instructor on weekends during the normal season. The tow is to 3000Ft AGL.

Students and other club members have priority, and intro flights should be performed after 14:00 unless there are no students or other members waiting for a tow.

The SFO should give first priority to the duty flight instructor if there are no students waiting for instruction. Second priority is given to any flight instructor or GBSC approved commercially rated pilot that has informed the Logger/SFO they are available for intro flights. The commercial pilot must be approved by GBSC's Board of Directors.

Fly A Sailplane Today (SSA FAST) program http://www.ssa.org/FAST.asp
Intro flights with FAST vouchers require 30 minutes of ground instruction and flight instruction with GBSC certified glider flight instructor. The SSA directly supplies the FAST participent a flight log book, the Glider Flying Handbook, a copy of the SSA Soaring magazine, and 3 month membership in the SSA.

Payment is by cash, personal check, GBSC gift certificate, or a FAST program voucher. If the passenger decides to join GBSC, the intro flight is charged at the member rate, and the remainder of the payment is credited toward a future flight(s).

Additional information about these flights and GBSC Introductory Flight gift certificates may be obtained from the membership chairman via email at:
membership@soargbsc.com or on the GBSC website at:
http://www.soargbsc.com/intro_soaring.php

4 GROUND OPERATIONS

4.1 Definition

Note: Additional details may be found in the GBSC "Ground Operations Manual"

Ground Operations consists of all GBSC activities involved in the following three segments of the flying day:

- pre-flight operations
- flight-line operations
- post flight operations

To insure efficient and safe operations a SFO and a Logger will be assigned to coordinate and control these activities for each scheduled flying day. The scope of their duties is covered in detail in Section 5.

At least two members of the MITSA Juniors Program will be assigned to assist with grid operations and the retrieval of gliders. These young people are NOT expected to do all the work. Other GBSC members will be required to assist with any tasks necessary to keep operations running smoothly, safely, and efficiently.

4.2 Pre-Flight Operations

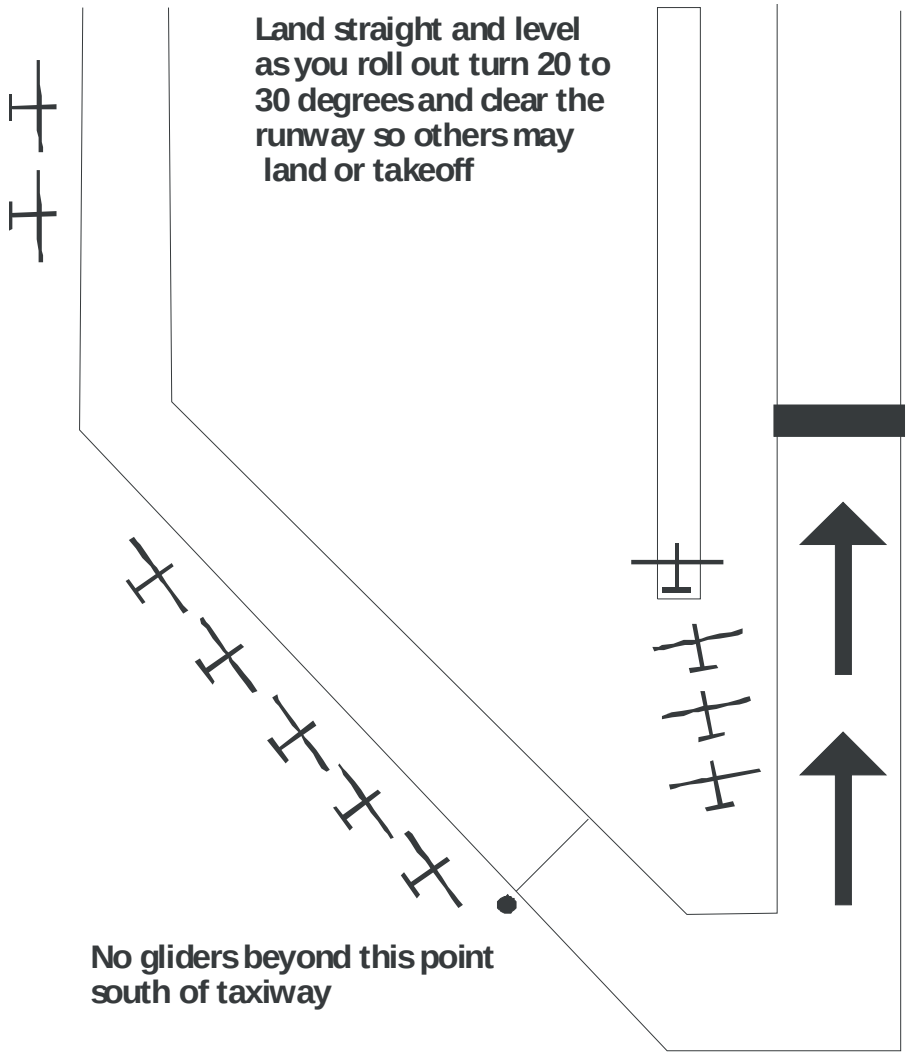
Pre-flight Operations consists of the activities necessary to have at least one of the two place gliders ready for flight by 10:00 a.m. on a scheduled flying day. This includes opening the clubhouse; setting up the bulletin board and outside counter; preparing the Carts for use; setting out tow ropes; and pre-flighting at least one two place glider and moving it to the staging area. For the most part this will be performed by the Senior Field Officer and Logger. Other members may be requested to pre-flight the other gliders. The first member of the flying day to use one of the other gliders will be responsible for performing the initial pre-flight inspection.

Note: it is ALWAYS the responsibility of the PIC to preflight his or her glider prior to use. Do not assume that because the glider flew before, it is ok.

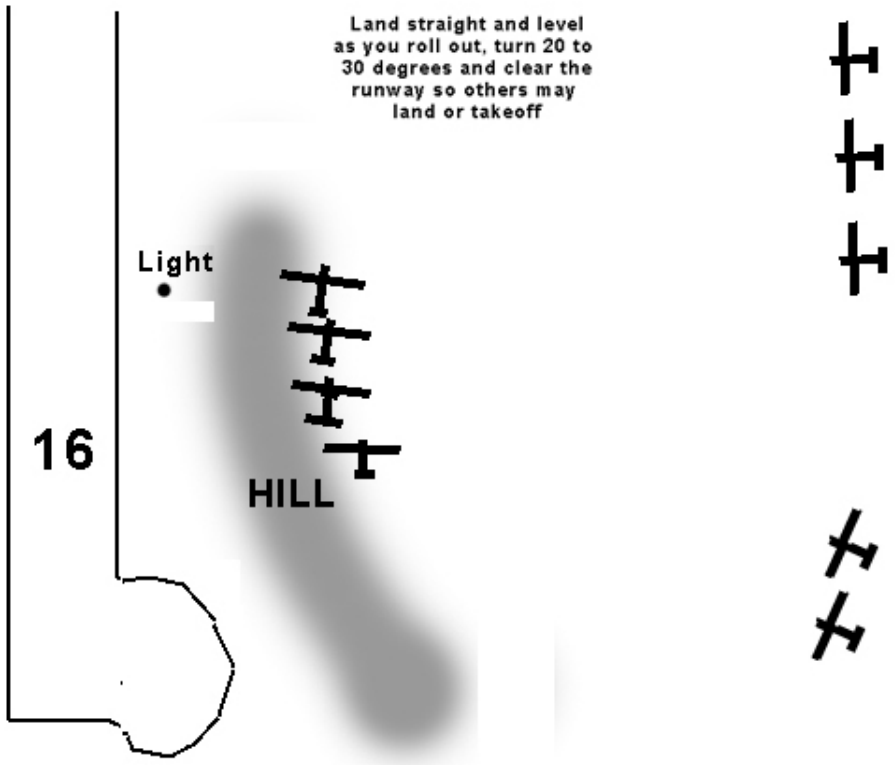
Appendix D is the Pre-flight and post-flight checklist for ground operations.

4.2.1 Moving a Glider to the Staging Area

The primary staging area for takeoffs on runway 34 is at the southern end of the runway between the taxiway and the street. This space is limited. Private gliders should not push down here until they are ready for immediate launch. If you (or the conditions) are not ready for launch, you are requested to remain in the assembly area. No vehicular traffic is allowed on the airport operating area. Carts are accepted, but no cars, trucks or vans, may be used for ground tow unless equipped with factory recommended tow out gear.



For runway 16, the staging area is on the northwest end of the field close to the trees.



Care must be taken in moving and parking gliders in these areas. Park the gliders such that there is no possibility of collision due to sloppy movement or the wind moving them. Position the aircraft with the downwind wing on the ground, dive brakes deployed, and the canopy closed.

Carts are used to move gliders. The directions for operating the carts are on the vehicle.

4.3 Flight Line Operations

Once all pre-flight line operations are completed, the SFO, Logger and MITSA Juniors will turn their attention to the flight line and launching gliders. The SFO is in charge of the overall operation. His/Her primary duty is to ensure that the operation is safe and efficient and conducted in accordance with the procedures spelled out in this manual Cooperation by all GBSC members is essential. Again, these club members are not expected to do everything. Experienced members will be asked to help with hookups, wing running, glider retrieval, or any other tasks deemed necessary.

4.3.1 Launch Order GBSC

The Logger uses a sign-up list or board to establish the glider use order. If a pilot is not ready or decides not to take a flight when their name comes up, the next pilot on the list will be reassigned to the flight (and glider). The pilot who declined to fly then becomes the next pilot in the flight order - he/she does not go to the bottom of the flight list.

The pilot's name is entered in the log after his takeoff. The pilot's name is crossed off from the sign-up sheet. This helps keep the sign-up order up-to-date. Pilots may only enter their name once on the sign-up sheet. After a flight, a pilot may sign up for another flight/glider.

To maximize use of our instructors, instructional flights may be given priority over other flights in the launch sequence. This does not mean always launching them next, but it does mean attempting to maximize their utilization. Additionally, be aware of special circumstances, such as practical test flights in progress. These should be given priority.

4.3.2 Pedestrian controls

No one should be standing on the edge of the taxiway, or active areas of the airport, such that any aircraft need maneuver around the person. All need to be aware of infringing the operating areas of the airport. In addition to being aware our selves, we need to be truly diligent about other spectators in the area. If you see someone unescorted by a member of our club, approach them and direct them to stand off the taxiway at/or north of the picnic tables (for operations on 34). If you see someone that looks lost out in the operating area, you need to react as if you see a toddler approaching a swimming pool. They need to be saved from themselves!!!.

4.3.3 Moving a Glider onto the Grid

As room becomes available on the grid, the SFO will direct the next glider in the launch order to reposition from the staging area to the back of the grid. Once on the grid you should never leave the vicinity of your aircraft. Don't be distracted by others in line and concentrate on what you need to prepare for takeoff. On a busy day with 3 tow planes running, you should be seated in your glider no later than the 3nd place from the front of the line. You should not be rushed for takeoff, and the best way to avoid this is to be ready for launch before it is your turn. Don't worry about moving up in line as the MITSA juniors and other pilots farther back in the queue will help push you up.

4.3.4 Hookup

GBSC currently has two different kinds of tow line systems. A retrieve winch and conventional Schweizer releases on the tow planes. After the initial procedures, the glider hookup remains the same. The winch system is currently not in use as of Spring 2012

4.3.4.1 **Retrieve winch** (Not In normal use as of Spring 2012)

The Pawnee has a retrieve winch, which allows the tow line to be retracted into the fuselage of the aircraft on return. This system allows for a landing without the need to drop the rope. The towline consists of a ¼" Dacron line terminating in a Tost weak link and tow ring. Hooking up a glider using this system consists of walking to the back of the Pawnee, pulling the towline from the internal drum as you walk back to the glider, then pull off a little more than you need to reach the tow hook of the glider. Examine the Tost weak link for damage or elongation. The weak link is a metal tab inside a protective metal sleeve. The first sign of damage is elongation of the holes in the link. This can be detected by pushing the shackles at and away from each other. Get familiar with a "good" one, so you will know what is excessive play. Also the links are color coded by breaking strength. We use a BLUE one only. This link will safely tow all our gliders.

4.3.4.2 Schweizer & TOST tow plane releases and tow rope winches

With the Schweizer tow plane release the tow plane will drop the line near the paved runway on its return. If the line is dropped on the paved runway it should be retrieved to the near side of the runway as soon as safely possible. The rope on the runway could present a hazard to arriving or departing power traffic. Once a tow plane has arrived, the tow line needs to be attached. If the tow plane uses a Schweizer tow release the end with the "big single ring" needs to be attached to the tow plane. After attaching the tow plane, return to the glider to connect that end. It is always a good idea to walk back with the rope sliding thru your hand so you can better examine the rope for knots or abrasions.

The Pawnees have a tow rope winch system which retracts the tow rope in flight. When ready for hookup the tow rope is manually pulled out of the winch and toward the glider for hookup.

The Pawnees also have an external TOST tow release that may be used if the winch is inoperative or during winter flying when there is a possibility of the winch freezing up, in which case the tow rope is droped as described above. Note that when using the eternal TOST tow release the small ring is required at the tow plane.

4.3.4.3 Adaptors and Weak Links

Glider tow releases also come in two different types. Tost and Schweizer. The Tost release uses a small (~1 in) ring with a larger ring that is attached to the line. The Schweizer release uses a single large (~2 in) ring which is attached to the line. As one might guess Schweizer gliders use Schweizer releases, most all other gliders us the Tost release. Use of the wrong ring(s) on the wrong release can cause malfunction.

To keep our procedures as consistent as possible, our tow lines are equipped with small rings (TOST) for the glider ends (same as the retrieve winch). To connect a Schweizer glider to the tow line, a weak link or adaptor must be used.

- The 1-26 requires a weak link (short, less that 1 ft long, yellow poly rope). It has a loop of line at one end and a large Schweizer ring on the other end.
- The 1-34 and the 2-33 require the white adapter (short , less that 1 ft long, white rope) Again the adapter as a loop of line at one end a the large Schweizer ring on the other
- All other club gliders require the TOST Ring (smaller ring on the end with two rings).

The adaptor and weak link are attached to the tow rope in the same manner. Attach the adaptor/weak link by passing the loop of line thru the Tost ring and then pulling the Schweizer ring thru that loop. This will result in a ring hitch (or cow hitch). If you see the adapter/weak link rope appears worn or frayed should retire it and use a new one. Place the old adaptor/weak link in the club house so the parts may be used to make a new one.

4.3.4.4 Glider hookup

When you have configured the tow line as needed for the glider, "present" the end you will be hooking up to the pilot of the glider. She/he has the final say about the proper configuration, and condition of the rope. When she/he signals you to hook up, do so, indicating with an open hand and then closed hand to open and close the release. Ask if the pilot would like a test release. If they indicate they would like one, apply tension to the line as they pull the glider release. Reattach the line, and give it a good tug, to be sure it is firmly attached.

4.3.5 Wing runner signals

When a pilot is ready for takeoff, the following procedure is used. Use the large orange colored paddles to aid visibility of SSA approved hand signals:

- After the tow rope is connected to both the tow plane and the glider, the wing runner signals the tow pilot to take up slack (arm swung back and forth like a pendulum).
- When slack as been removed from the tow line, the wing runner stretches out both arms signaling the tow pilot to stop.
- If the pattern and field are clear, the wing runner responds, “Pattern and Field clear!”
- If the pilot is then ready, she/he signals ready for takeoff with a "thumbs up".
- The wing runner lifts the wing.
- The glider pilot wags the glider’s rudder.
- The wing runner signals the tow plane “clear for takeoff” with a full circular motion.
- The tow pilot, upon seeing signals from ***both***, the wing runner and the glider pilot, wags the tow plane’s rudder and begins the takeoff roll.

4.3.6 Running Wings

"Running wings" is typically a casual, pleasant formality in the initiation of a glider flight. Launching a 2-33 into a 5 mph head wind is a non-event -- more a salutation than a procedure. However, most planes demand more attention.

The Blaniks and Schweizer 2-33 have castering tail wheels resulting in rapid weather vaning into any crosswind, even before the takeoff starts! Glass ships are not quite as bad, but they require higher airspeeds and are aggravated by slow acceleration when carrying water ballast.

The wing runner should, in most instances, actually support the wing from underneath rather that than holding the wing. Should the wing runner hold the wing, and they start off at a faster or slower pace than the glider or stumbles while holding the wing, it could cause the glider to pivot at too large an angle for the glider pilot to correct. This can be especially dangerous should the glider have a C/G hookup where the tow rope has much less influence on helping to straighten out the glider on startup.

Gusty and/or crosswind conditions may require holding the wing. But again, match your speed to the gliders so as not to cause pivoting of the glider on the initial takeoff run.

4.3.6.1 Proper Wing Position

Prior to takeoff, the wing runner ensures the glider is balanced laterally by noticing whether the wing tries to drop or rise on its own. This is usually only a problem with gliders carrying water ballast, although not always. Alert the glider pilot immediately, if any imbalance is noticed.

During the takeoff run, the wing must be supported in the proper flying position. Note that this may very well **not** be level. In a cross wind, hold the upwind wing parallel to the ground or slightly lower as instructed by the pilot. It must not be higher than the downwind wing.

Toward the end of the takeoff run, allow the wing to go toward the direction of any vertical pressure. This causes the glider pilot to make the proper aileron corrections, rather than having the wing drop immediately after release.

4.3.6.2 Avoid Weathervaning

On days with strong crosswinds higher performance gliders cannot takeoff without a skilled wing runner--his/her ability to run fast. Don't be afraid to choose a younger wing runner!!. The winds will typically cause the glider to weather vane. In such cross wind conditions, maintaining directional control is often more difficult for the pilot than keeping the wings level.

In order to keep the glider going straight in such conditions, monitor the glider's track down the runway by looking at the nose of the glider. If the glider starts to track off the center line, apply fore or aft pressure as required (limited pressure, as glider wing tips should never be pushed hard). In strong conditions, consider running the downwind wing, as it is easier to apply a bit of back pressure rather than forward pressure during the run.

Tow pilots note that maximum acceleration is required in such conditions.

Occasionally, a runner may trip or stumble during the takeoff run. In such a case, release the wing immediately. Not only does this give the pilot the best chance for a successful takeoff, it is a lot easier for the runner to keep his face out of the dirt.

It is often felt that speed is the major ingredient in a good run -- it is actually less important than proper wing position and runway track. On difficult days, take pride in a proper wing run; the pilot surely appreciates it.

4.3.7 Flight Limitations

4.3.7.1 Reduced Flight Time (See Section 3.3.4)

4.3.7.2 Bad Weather

If the weather takes a turn for the worse, the SFO confers with the assigned instructor and assigned tow pilot about shutting down flight operations. At the first sign of bad weather, the gliders should be moved to their tie-down areas and secured. The assigned instructor has the final word on shutting down operations. In any case, all regulatory limitations contained in FAR part 91 and the aircraft POH regarding wind, ceiling and visibility must be observed.

4.4 Post-Flight Line Operations

This activity consists generally of securing the gliders and clubhouse cleanup. Again, while this is coordinated by the SFO, other members may be requested to assist. Specifically, **the last member to fly a glider is responsible for it's tie-down.** Check with the SFO to determine if you are the last flight of the day for that glider. Appendix D contains a post-flight line checklist for reference.

4.5 Emergency & Incident reporting

In the event of an incident or accident at the airport:

- Notify the Airport manager & SFO
- Notify the GBSC club president, Chief Tow Pilot, & Duty Instructor
- Follow the GBSC Emergency plan
- DO NOT notify the FAA, a club officer will determine if it is a reportable incident.

5 SENIOR FIELD OFFICER, LOGGER & JR'S

5.1 Definition and Duties

The SFO coordinates all field operation activities, and keeps the flight line running safely and efficiently as described in section 4, Ground Operations. He is fundamentally seen on the grid, ensuring that only the appropriate people are there, and doing there jobs correctly. He dictates the launch and staging order, and in general keeps a lookout for any potential safety issues that might arise. SFOs are picked from our more experienced pilots. The SFO shall mentor and monitor inexperienced members in proper grid and operational procedures.

The Logger is responsible for logging of all flights and controlling the club glider usage sequence. The logger is also responsible for "greeting" visitors, and arranging introduction to soaring flights. Keeping the log is a very important task, and should a logger find it difficult to keep the log current, and perform other aspects of the job, the logger is encouraged to "draft" a volunteer to help with any of his or her other duties.

The Junior's (JRs) job is principally to run wings and retrieve gliders using our ground tow vehicles. They should report to the SFO when they are ready to serve their duty, and the SFO will direct them to the task currently needed. The JRs should be treated with respect for the valuable job they perform, by the same token, they are still young and might need to be reminded as to what is expected of them from time to time. Inexperienced juniors shall be mentored and trained by the SFO to ensure grid safety.

To ensure efficient and safe operations, SFO, Logger and JRs are assigned for each scheduled flying day.

5.2 Scheduling

Before the start of the soaring season, the Director of Operations assigns all active and qualified GBSC members, excluding instructors, tow pilots, and board members, as SFOs and Loggers. The roster is published in the March edition of the TowLines newsletter and is updated, as necessary, in future TowLines and on the GBSC website (www.soargbsc.com). Assignments are made for all GBSC scheduled flying days for two or three months at a time.

During February or March, and prior to completion of the roster, a member may contact the Director of Operations and identify any weekend(s) the member is unavailable for SFO or Logger duty. The Director of Operations can then avoid scheduling members when they are unavailable. After the roster is created, members swap days among themselves to resolve scheduling conflicts. From time to time, GBSC has had problems with SFO or Loggers failing to show up on their assigned date. To alleviate this problem, the Director of Operations, or his designee, notifies the assigned members by email early in the week before their duty. This is to remind members to either show up or to make arrangements with another member to substitute for them. It is the responsibility of the assigned member, not the Director of Operations or SFO, to make sure their substitute shows up on the proper day. If the Director of Operations is notified at least one week in advance of the substitution, s/he can note the change and remind the substitute.

5.3 Pre-flight Line Operations

Pre-flight Operations consists of the activity necessary to have at least one of the two place gliders ready for flight by 10:00 a.m. on a scheduled flying day.

5.3.1 Duties And Responsibilities

The SFO, Logger and assigned MITSA Juniors should be at the field by 0900. The SFO is responsible for coordinating the activities listed in Appendix D.

5.3.2 Senior Field Officer

In addition to those items above, the SFO is responsible for the following:

- Overall safety and efficiency of the operation.
- Talk with the FBO and get current weather information
- Determine active runway with FBO.
- Fill out new flight log (date, SFO name and Instructor, tow pilot(s), and JRs names, when they check in)

The first member of the flying day to use one of the other gliders will be responsible to perform the pre-flight inspection of these gliders.

5.4 Flight Line Operations

Flight line operations consists of the ground activities necessary to launch gliders and have them safely return to the staging area. This includes the following:

- Moving gliders to the staging area
- Control of the sign-up list and launch order list
- Moving gliders to the launch grid
- Control of the grid
- Hook-up and wing running
- Tow rope retrieval (after it is dropped by the tow plane)
- Retrieving gliders that have just landed

5.4.1 Logger

The Logger is responsible for maintaining the tow sign up sheet and the log sheet.

Basic Logger Instructions:

- Read the example log sheet and refer to it as you fill out your log sheets for the day.
- At the end of the day, write the day and date on an empty large envelope. Put the days records inside. The records include:
  - Completed log sheet or sheets
  - Intro forms and Visiting Private Pilot forms with payments
- Leave the large envelope in the big plastic box marked "operations records".

For more detailed logger instructions see Appendix C.

Note as of 201/2012 an electronic loggers system is in use, but the paper system is still used at encampments and as a backup.

5.4.2 Senior Field Officer

The SFO shall:

- Assign the launch order
- Prioritize training flights to keep instructors fully utilized.
- Along with the Logger, monitor the MITSA Juniors and lend assistance when necessary
- Ask for experienced members to assist in hookups, running wings, moving and retrieving GBSC gliders.

This is a club operation so everyone should be willing to lend a hand.

5.4.2.2 Flight Log

The Logger will keep a legible, accurate and complete flight log of the day's flights. The flight log is crucial for keeping an accurate record of GBSC flights, both for billing and for logging aircraft hours. Log the pilot's complete name, passenger, instructor, 'N' number of the glider, tow pilot, tow plane, and glider takeoff and landing times. Sign and date the flight log at the end of the day. Paper logs are to be placed in a large dated envelope along with intro forms and payments and the large daily envelope left in the plastic bin marked "operations records" at the end of the day. See appendix C for a sample log and detailed instructions

5.4.3 MITSA Juniors

The MITSA Juniors will work primarily on the grid with hookups, wing running, tow rope retrieval, moving gliders forward in the grid and helping to move gliders from the staging area to the grid.

5.6 Post-Flight Operations

The SFO, Logger and MITSA Juniors are required to accomplish the duties listed in Appendix D at the end of the flying day:

> ***It is expected that other club members will assist with these tasks. Don't just get in your car and go home!!***

5.6 Miscellaneous

5.6.1 New Members

For existing members, please ensure that new members know the operations around the field. If it is a busy day, find another qualified member to guide them through the field procedures. Before they fly with GBSC, they must speak with and be checked out by a GBSC instructor. Show them how to sign up for a flight with a GBSC instructor.

5.6.2 Prospective New Members

GBSC is always looking for new members, whether they are new to soaring or experienced pilots. Greet them kindly and supply them with the GBSC informational brochure, SSA literature, a copy of *Soaring*, and if a membership form is requested, direct them to the GBSC Web site Sorgbsc.com or the membership chairman's email address membership@soargbsc.com. Find other members to talk with the prospective member and have them explain in more detail, the workings of the club.

All GBSC members are expected to welcome and make prospective members feel comfortable. Do not let new-comers stand around and be ignored or they will go away with bad feelings about the club and soaring. If they wish to take an introductory glider lesson, guide them to the SFO SFO or experienced club member to fillout a One Day Membership Application.

6 FLIGHT INSTRUCTORS

Consistent with GBSC's charter to promote the sport of soaring, GBSC offers instruction to primary and advanced glider pilots. GBSC relies on those club members with Certified Flight Instructor - Glider (CFIG) ratings, to provide instruction in all disciplines of soaring.

6.1 Scheduling

At the beginning of the year, the Chief Flight Instructor fills out an instructor roster. The instructor roster designates an instructor for each scheduled flying day. It is extremely important that instructors show up on all of their assigned days, or trade the day with another instructor.

On most days, two instructors are required from 11 a.m. to 3 p.m. Since only one instructor is officially scheduled, non-scheduled instructors come out to the field as their time permits.

6.2 Assigned Instructor

The assigned instructor is responsible for providing instruction from 10:00 a.m. until the last flight of the day anytime the conditions are 1000 foot ceiling and 3 mile visibility. The instructor is the final authority for all flight operations, including but not limited to:

- resolving questions of club glider air worthiness
- setting weather related solo pilot limits in club ships
- approving student solo flights
- approving temporary members

The instructor also organizes and initiates instruction flights to maximize the day, should the SFO or Logger fail to do so. (She/he gets people moving!)

Unassigned instructors at the field coordinate load-sharing with the assigned instructor on busy days. On slow days, the assigned instructor may choose to do all of the instruction flights since s/he is committed for the day.

6.3 First Solos

Pre-solo exams are issued well in advance of the student being ready to solo. Blank tests are available in the clubhouse. Preferably, the student takes the test at home with any study materials desired. The instructor grades the test and reviews errors with the student. Completed tests can be stored in the clubhouse (the FARs require instructors to keep completed pre-solo written tests for 3 years after the test).

6.4 Consistency of Instruction

Because students fly with many instructors, efforts must be made to limit contradictory information. An instructor's meeting is held at the beginning of the season to review basic procedures and techniques. In addition, regular dialog at the field promotes consistency of instruction for various lessons and techniques.

6.4.1 Altimeter setting

Students will be instructed that the standard GBSC technique is to set the altimeter to field elevation (450 feet) prior to takeoff. Should a rated pilot receiving instruction state a personal pilot technique preference for setting the altimeter to zero, this is acceptable.

6.4.2 Takeoff check list

CB-SIT-CBE (Controls, Ballast, Straps, Instruments, Trim, Canopy, Brakes, Emergency) will be used on instructional flights (same as the textbook, with the addition of E). This and the landing checklist are to be used for verification of settings and actions previously completed (don't wait until E to plan your flight, including studying the days conditions and preparation for a rope break). It is desirable to have these checklists posted in the club gliders.

6.4.2 Landing check list

USTALL (Undercarriage, Speed, Trim, Airbrakes, Lookout for traffic, landing spot)

6.5 Syllabus

Students and instructors will have a common reference by utilize the following books throughout the flight training process: Knauff's training books: Glider Basics - From First Flight to Solo, After Solo, and Transition to Gliders (for power pilots), as well as the SAA Soaring Flight Manual and FAR/AIM. All pilots are encouraged to expand their soaring library beyond these core texts.

7 TOW PILOTS

The GBSC tow pilot roster consists of club members satisfying the appropriate FAR requirements who are willing and able to commit to a schedule. Good tow pilots realize they are a service provider; offering glider pilots timely and safe tows to an area permitting a good soaring flight.

7.1 Qualifications

Minimum requirements are: GBSC membership, meeting the appropriate FARs, and meeting the insurance requirements of 500 hours total time and 100 hours in tail draggers for tow pilots flying the Birddog and Pawnee.

Tow pilots are encouraged to fly club gliders on a regular basis in order to understand and anticipate the needs of the glider pilot.

7.2 Scheduling

At the beginning of the year, the Chief Tow Pilot (Chief Pilot) fills out a tow pilot roster. The tow pilot roster designates a tow pilot for each scheduled flying day. It is extremely important that the assigned tow pilot show up on time for all of his/her scheduled days, or trade the day with another tow pilot. This is vital to running a reliable operation.

7.3 Assigned Tow Pilot

The tow pilot shifts are assigned per the schedule; First shift is 10-2, second is 11-3, and third is 2-6. First shift (AM) pilot must be ready to tow starting at 10:00 a.m., anytime the conditions are at least 1000 foot ceiling and 3 mile visibility. The Second Shift (PM) pilot must be ready to tow at 11:30 unless the day is non-soarable in which case the start time is 1:00. The tow plane should be fueled, preflighted, and ready to go by the start times.
The assigned tow pilot is responsible for the tow plane on that day including:

- Pre-flight inspections
- Oil level
- Cleaning the windows
- Wiping down exterior oil streaks and bugs
- Inspecting Pawnee winch tow rope
- Reporting/logging mechanical problems
- Securing the airplane between tows
- Post flight inspection
- Properly tying down the airplane

All other things being equal, because of economy of operation and concerns about noise for the local community, the Pawnee tow planes are the preferred tow planes for normal use.

GBSC's L-19 is an excellent tow plane and quite enjoyable to fly, but should be considered the last aircraft to utilize in normal weekday/weekend operations. It is also expensive to maintain. Variations in pilot technique can greatly affect the reliability and condition of the tow plane. Tow pilots are expected to handle and operate the tow plane thoughtfully and with explicit actions taken to minimize wear and tear.

The L-19 should not be flown with the front seat windows open due to the difficulty involved with replacing the window hinges. Flying with back seat windows open is permitted. (The rear seat hinges are different.)

Since GBSC is a soaring oriented club, tow demand tends to come in bursts. That is, even when a second tow plane is available, the tow pilot must be ever vigilant to not "fall behind", as even short delays tend to accumulate, cause congestion, and eventually limit the amount of flying accomplished. On busy days, unassigned tow pilots should offer relief to the assigned tow pilot as their time permits.

The tow pilot remains attentive to the flight line, to be available on demand. Make fuel stops during lulls in the activity, as opposed to waiting for the tanks to get low, and possibly needing to refuel when gliders are ready to launch. During busy times, it is important to maximize the tow rate by climbing in lift, descending in sink, and minimizing ground time; all while being safe and gentle with the airplane.

7.4 Speeds

The Birddog and Pawnee tow planes have a mark on the airspeed indicator that is appropriate for a two place trainer. Add 5 mph for glass, 10 mph for glass with water and subtract 5 mph for a 1-26. Glider pilots are encouraged to ask for faster or slower speeds as desired.

If the cylinder head temperatures are high, increase the tow speed.

7.5 Takeoff

Standard SSA wing runner signals are used: swinging arm below the waist for removing slack in the rope, and full circular motion for takeoff. In addition, the glider wags its rudder when ready and the tow plane responds with the same signal. Use the radio (122.9) as backup between the glider and the tow plane.

Be aware that many power plane pilots use the mid-field taxi way with no consideration that they are crossing an active grass runway.

7.6 Climbing

Thermaling on tow is a normal and expected procedure in appropriate conditions. Prior to first solo, all students must be able to thermal on tow. For this to be effective, thermals must be fairly large, as aggressive, tight thermaling is usually not productive in significantly improving climb time. The glider pilot is better served flying through more air while straight and level.

7.7 Boxing the Wake

The accepted technique for boxing the wake is for the glider to initially descend through the wake, followed by going clockwise around the wake. This technique allows the tow pilot to differentiate glider steering from the initial portions of boxing the wake.

Alternate, but commonly accepted, wake boxing techniques may be used upon Tow Pilot notification.

7.8 Glider Steering

Tow pilots need to be attentive to attempts by the glider to steer the tow by pulling the tail of the tow plane to the left or right. This is differentiated from the glider boxing the wake because steering is done in the normal high tow position, whereas boxing starts in the low tow position. If the glider initiates a turn, establish a shallow turn in the yawed direction. Wait for the glider to return to the center line before leveling out and establishing a new heading.

7.9 Release

The tow pilot must ensure (visually is most reliable) the glider is released before making any aggressive turns or descents. It would not be the first time a tow pilot started a rapid descent with the glider still attached.

7.10 Descent

While there are as many descent techniques as there are pilots, there is a preferred method for GBSC that attempts to trade off engine shock cooling, timely descents, and aircraft wear and tear. Immediately after verified release:

- turn left
- slow to 50 mph(L-19 only), throttle back to 2000 rpm, deploy full flaps (maintain this power setting for at least two minutes), then reduce to 1800 rpm for two minutes, etc.
- start tracking back to the airport at 80 mph or below for the L-19, 100 mph or below for the Pawnee.
- spiral down in sink to maximize descent rate
- set up for entering the landing pattern

The initial slowing/power back/flap deployment is applied simultaneously. It is very important to be slow when deploying the flaps as the load increases dramatically with speed.

The goal is to get into the pattern and on the ground as directly as possible, while maintaining an urgent lookout for all traffic.

7.11 Landing

The tow plane can be landed on the grass or the paved runway. Be aware that the wiring for the runway lights is above ground in many places and may be an obstacle for the tailwheel. Be cautious of the runway lights. Communicate with any landing or departing traffic before crossing the grass runway.

7.12 Dropping the Tow Rope

When landing on 34, the preferred location to drop the rope is along the left side of the displaced threshold, just at the edge of the grass and pavement. This allows a rope retrieve without having to cross the runway and keeps the pavement clear of ropes for departing a/c.. When landing on 16, the preferred location to drop the rope is along right side of the runway, just at the edge of the grass and pavement. In any event, the tow pilot must be certain that he can drop the tow rope clear of any bystanders and property. If any doubt exists, drop the rope on the far side of the runway.

7.13 Parking/Prop Blasts

Because of the tight operating space, tow pilots must always be aware of the effects of the prop blast on people and objects behind the tow plane. It is unacceptable to blow dirt and dust onto people and equipment. If necessary, move the plane by hand before starting it.

7.14 Pattern Tows

The objective of pattern tows is to position the glider for a release at 1300 feet AGL, near the IP (not at the IP).

7.15 Cross-country Towing

Special considerations are necessary when towing straight and level, as opposed to climbing. As the power produced by the tow plane is reduced, the superior performance of the tow plane relative to the glider decreases, and with sufficient power reduction the glider's performance exceeds that of the tow plane. This creates dangerous slack rope conditions as the glider attempts to pass the tow plane!

Given this possible condition, the burden is on the tow pilot to properly change attitude and power. When transitioning from climb to straight and level tow, reduce power gradually (a maximum of 300 feet per minute per minute), and hold the airspeed constant (equal to climb airspeed). The typical technique of adjusting to level flight attitude with a pitch change before reducing power is absolutely incorrect in this case. Once straight and level flight is achieved at the original tow speed, add power to increase airspeed.

Descent under tow is even more problematic; rates greater than 200 FPM are not recommended. The higher the performance of the glider, the more serious the problem.

When towing cross-country, select a course and altitude to allow the most options for the glider pilot should the rope break or release.

Improper tow pilot technique in cross-country towing can create serious problems for the glider pilot. Tow pilots are encouraged to practice straight and level cruise and descents with an attached glider.

7.16 Passengers

For performance and safety reasons, it is GBSC policy to discourage passengers in the tow plane during towing. Passengers are only carried when the tow pilot finds there are no safety concerns.

7.17 Wave-off

Normally, the glider pilot releases at his discretion, as opposed to being waved off at a specific altitude. If the glider does not release at the expected altitude, continue the tow and inform the Logger of the actual release altitude upon landing.

In the event of a mechanical failure or other problem, wave off the glider and give it the opportunity to release. If the glider fails to release or conditions become sufficiently dangerous, release the glider.

A note on the wave-off signal -- the rocking of the tow plane wings must be done without heading change and with rapid oscillation. There have been cases where the attempted bank angle was too high and the roll rate too slow, such that the glider pilot initially tried to "follow the turn".

7.18 Release Failure

Follow normal SSA procedures in the case of a release failure. Should the glider indicate release failure (moving to the left and rocking the wings), return to the airport before releasing the glider.

In the rare event of a double release failure, the required landing while on tow can be difficult. The key to this procedure is to limit the descent rate as described in the cross-country towing section. The pattern needs to be extremely wide and flat. Obviously, an excessive slack rope condition could be catastrophic. A landing on a long runway, like Worcester, may be the best option.

7.19 Open Spoilers

Towing with the glider spoilers open has been a recurring problem in soaring. Depending on specific performance (tow plane, glider, air density) and obstacles, this can easily result in an accident. While the reasons for open spoilers are many, and often difficult to understand in retrospect, the reality is that it continues to happen. If the tow pilot realizes the spoilers are open during tow, his options are limited, but normally sufficient.

To enhance roll control, some glider pilots choose to deploy spoilers during the initial portion of the takeoff. This is accepted practice that tow pilots should be able to distinguish from unintentional deployment. When the signal to start the tow is given, the glider pilot has the spoilers closed (although maybe not locked), and only opens them as the roll starts; closing them once sufficient airspeed is achieved.

With the L-19, a positive rate of climb can often be achieved even with spoilers open, as long as proper tow speed is maintained. Too slow (due to "trying to climb") can reduce performance and risk a stall, while too fast lowers the glider performance even more.

If the glider has a radio, alert the glider pilot of the problem. It has also become accepted procedure for the tow pilot to indicate an open spoiler condition to the glider pilot by very rapidly wagging the rudder. This is quite noticeable to the glider pilot and the frequency is high enough that there is no attitude effect on the tow plane.

If the situation continues, fly directly over the airport and wave off the glider. Given the reduced performance of the glider, the tow pilot must give the glider pilot the best chance of reaching the airport after release.

Do not start a tow when the glider's spoilers are deployed unless you are certain the pilot has them open intentionally.

8 SHIP CAPTAINS

GBSC is fortunate to have a large fleet of gliders, plus the advantage of our own tow plane. To keep all GBSC aircraft in an airworthy state, various members are assigned by the Board of Directors as ship captains.

8.1 Definition and Duties

The ship captain is responsible for his/her assigned aircraft as well as its trailer and tie-down. This includes:

- Recognizing and performing preventive maintenance needs.
- Recognizing and performing minor repair needs.
- Recognizing and resolving major repairs.
- Maintaining accurate and up-to-date aircraft logs.
- Maintaining the Aircraft Status Board entry (see below).
- Determining maintenance procedures.
- Making sure the annual gets done on time.

The hardest job the ship captain has is getting assistance. Lend a hand when asked, or better yet, offer assistance. Maintaining the aircraft can be part of the fun and enjoyment of belonging to a glider club. It is also good preparation for owning a glider.

8.2 Aircraft Status Board

The aircraft status board is located in the clubhouse. For each aircraft there is an entry, which includes: aircraft N number, ship captain name, date of most recent annual, and the aircraft's status. All status including grounding, major problems, repairs, as well as minor problems, are noted on the aircraft status board.

The aircraft status board is used by the following members:

- Any member taking a glider from its tie-down must first check its status on the board.
- SFO and Logger check the board at the beginning of the day so they are aware of each aircraft's status.
- Ship captains update the board continuously and erase problems as they are rectified.

In addition to the status board in the green clubhouse, there is also a secondary web based Aircraft Status Board accessible to members at: http://soargbsc.com/members/ac_status.php

In addition to the aircraft status and member contact information, the web based board also has links to the documents associated with that glider, POH, Instrument manuals flight notes etc.

The data is available to all club members once logged on, but only the Ship Captains and the Maintenance Director have access to change the information on the status board.

Be aware that the primary Status board is in the Green clubhouse, because it is not feasible to keep the web based version as up-to-date as the one at the field.

8.3 Grounding an Aircraft

Grounding an aircraft is done by the assigned instructor. The two reasons for grounding an aircraft are:

- There is damage or incorrectly functioning components that leave the aircraft in an unairworthy condition.
- Further use of the aircraft might cause damage to the aircraft.

It is the responsibility of all members to identify aircraft problems (squawks) by doing the following:

- Placing a note inside the cockpit indicating the squawk or the reason the aircraft is grounded.
- Providing an entry on the Aircraft Status Board located in the clubhouse.
- Notifying the ship captain and/or a club board member & Maintenance Director.

APPENDIX A - 2012 RATE SHEET

MEMBER GLIDER RENTAL*

Schweizer 2-33	$10.00
Schweizer 1-26	$6.00
Schweizer 1-34	$6.00
Blanik L-23	$10.00
Blanik L-33	$6.00
Pilatus B-4	$6.00
Puchacz SZD 50-3	$10.00

* Rental fees have a 1 hour minimum and a 2 hour maximum. The second hour is charged in 1/10 hour increments.
There is no rental charge for gliders for pattern tows or rope breaks.
There is no rental charge for CFI currency flights

MEMBER TOW FEES

$11.00 hookup fee and $1.20 per hundred feet (minimum 1k Feet) AGL, except rope breaks:

Practice Rope Break	$10.00
Pattern Tow	$21.00
2000' Tow	$33.00
3000' Tow	$44.00
4000' Tow	$55.00
5000' Tow	$67.00

There is no tow fee for CFI currency flights
Note: An additional $5.00 per tow is applied for tows received at encampments to cover the additional cost of transporting club equipment.

RETRIEVES RATES:

$3.00 per radial Mile from Sterling, $40.00 minimum
There is no retrieval fee for a pilot's very first land out.
Note: Aero tow retrieves are only done from an airport.

CREDITS:
Winch Drivers receive a $1.00 dollar credit per launch.
Instructors receive a $5.00 dollar credit per flight.

2012 GBSC MEMBERSHIP PLANS

MEMBERSHIP FEES:

Membership Type	Initiation Fee[1]	Annual Dues	
Regular member	$400.00	$520.00	
Family member	$200.00	$320.00	
Student member	$200.00	$320.00	
Tow pilot/instructor	$200.00	$320.00	
Junior member	N/A	$60.00**	N/A

** Juniors are credited with $10 per hour for work on the airfield.

1) Initiation fees are paid 1/2 with application and 1/2 in January of the second calendar year of joining.

2) Regular Members annual dues are paid 1/2 in January and the remainder is charged monthly over a 10 month period from January.

For new members the first 1/2 or pro-rated amount (see table below), is due upon application.

For Junior members the total is due in January or upon joining - there are no pro-rated dues for Juniors.

For Family/Student/Tow Pilot/Instructor members the full amount is paid over a 10 month period starting in January or upon application for new members.

3) A student must be in full time education up to Undergraduate status.

Family Membership:
First family member pays Regular rate, 2nd and subsequent family members pays Family rate.

Temporary Membership: $15.00 for 1 day; entitles temporary member to tow in private ship at club rates. Does not include use of club gliders. Maximum of five per calendar year. Must be an SSA member. This does not apply to local New England pilots from clubs whit which there is a reciprocal membership agreement.

Pro-Rated Dues: The first year's annual dues are pro-rated for members joining later in the year, according to the following schedule:

Jan. - June: Full Dues; July: 85%; Aug. 75%; Sept. 50%; Oct. 35%; Nov.20%

SSA Membership: All members of the club MUST be members of the Soaring Society of America, please see the SSA website www.ssa.org for current rates and online application instructions.

MERCHANDISE: A variety of soaring books and merchandise is available from the club. Please refer to the rate sheet posted in the clubhouse.

	Amount Due with Application Balance billed at $30/month through October. Juniors only pay annual dues of $60											
	Initiation 1/2 billed upon joining 1/2 billed Jan. of second year	Annual Dues	January	February	March	April	May	Jun	July	August	September	October
Regular	$400	$520**	$450	$480	$510	$540	$570	$600	$520	$490	$460	$430
Family/Student	$200	$320**	$150	$180	$210	$240	$270	$300	$220	$190	$160	$130
Junior		$60**	$60	$60	$60	$60	$60	$60	$60	$60	$60	$60

** Rates subject to change without notice

For tow pilots and instructors to receive the reduced initiation or annual dues fee, they must agree to work x shifts per month and be approved to be added to the roster by the chief pilot or chief instructor. The approval can be withdrawn at any time at which point the member would be subject to the regular dues or family dues, if applicable.

APPENDIX B - SIGN-UP LIST

GBSC Signup Sheet

Day Sat

Date 03/01/2008

Name	Tow Height	Inst Req?	L-23 373BA 118BB	Puch 607OU	2-33 17899	L-33 120BB	1-26 1135S	1-34 1156S	B-4 65317	PVT (ID)
Roelke, Rick										RR
Sam Smith (Intro)		Intro		√						
L,Heureux, Piere		√	√							
Pavola, Steve										LT
Young, George						√				
Acers, Paul									√	
Bliden, Ira										A1

APPENDIX C – EXAMPLE FLIGHT LOG (SIDE 1&2)

SFO MandelbaumJ
Logger KelleyG

GBSC Flight Log

Day Saturday
Date 10-22-08

Blank = 3.0

	Tow Customer	Intro? Blank If No	Instructor or Passenger	Glider	Tow Plane	Tow Pilot	Time (24 Hr Format) Launch	Land	Tow Height
1	HallRC		BourgeoisR	65852	Z	MP	10:15	10:35	2.8
2	KoepperM			MK	P	RG	10:40	18:30	1.8
3	FlatonE		GaisfordP	373BB	Z	MP	11:25	12:45	1.2
4	RoelkeR			RR	P	RG	11:29	16:40	2.3
5	DoeJane	X	HamvasD	65852	Z	MP	11:45	12:15	
6	HoltzhausenH		KruegerK	118BB	P	RG	11:55	12:21	
7–12	**Example**								
13	FlatonK		VerhulstT	373BB	Z	MP	13:55	14:30	0.4
14	HoltzhausenH		KruegerK	118BB	P	RH	14:30	15:30	
15	CherkusD			1156	Z	JW	15:15	16:30	
16	BliedenI			A1	Z	MP	13:55		2.9
17	JacobA		ClarkGloria	118BB	P	RH	14:30	15:30	2.8
18	CherkusD			1156	Z	JW	15:15	16:30	
19	PitoniakM			4B	P	RH	15:30	17:00	
20	JonesRider	X	HamvasD	373BB	Z	JW	15:48	16:30	
21	BoydB			76PS	P	RH	15:38	16:34	
22	DimeoF		KruegerK	TA	Z	JW	16:08	18:00	
23	Martha Kobus		JR HRS				9:00	17:00	
24	Max Flaton		JR HRS				9:30	15:00	
25									
26									
27	BliedenI		Retrieve Gardner		Z	JW		18:25	
28									
29									
30									
31									
32									
33									
34									

List tow pilots and their initials here: Mike Pitoniak - MP, Bob Fletcher - BF, Richard Gammon - RG, Ritts Howard - RH, John Wren - JW

APPENDIX C - FLIGHT LOG (SIDE 2)

Gliders:

Two Seat:

17899	Schweizer 2-33 Yellow
373BA	Blanik L-23 Silver
118BB	Blanik L-23 White
922SB	Blanik L-23 White
607OU	Puchacz White

Single Seat:

1135S	Schweizer 1-26 Orange
1156S	Schweizer 1-34 Yellow
65317	Pilatus B4
120BB	Blanik L-33

Tow Planes:

P	9716P	Piper Pawnee with fabric wing covering
Z	6368Z	Piper Pawnee with metal wing covering
B	3573B	Cessna Birddog

APPENDIX C - GBSC FLIGHT LOGGING PROCEDURES

General instructions

Write neatly so the data can be read. That means write the required information in simple block letters and don't attempt to stuff in irrelevant data. If you make a significant mistake, draw a line through the row and start on a new row. Don't add unnecessary information such as BFR or check ride. Don't write a K in the tow height column. Flight order on the sheet makes no difference because launch and land times are recorded. Don't draw arrows or notes that one flight was before another. If a note will clarify things by all means write one on the back of the form where there is plenty of room or if necessary add another sheet. Use the line numbers to indicate a particular flight your note pertains to.

All fields are mandatory.

Fill in all fields. If you miss an event do your best to track down the correct information and provide an estimate. Your guess on the day will be better than a guess days later.

Exceptions

1. Tow Height. Leave it blank if you think the tow was three thousand feet or if you don't know. Empty tow height fields are billed as three thousand feet.

2. Junior Hours. Fill in Tow Customer, Launch and Land. Write JR HOURS in the Instructor / Passenger field. All other fields blank.

3. Aero Retrieves. Launch and tow height fields should be empty.

SFO, Logger, Day of Week, Date, Sheet n of m

Fill these out with names, day and date. Indicate how many total sheets cover the operation. For example Sheet 1 of 2.

Tow Customer

This is the member who will be billed for the tow. **This must be a member on the billing list!** The only exception is for pre-paid flights (intro / visiting private pilot) see **Intro Field** below.

Members will thank you for confirming the paying party and filling this out legibly. If a member wants to split costs ask them to please work out their deals separate from club billing. If a member insists on being billed for a flight for which he is not in the glider then put him down in the Tow Customer field and write a note on the back of the log sheet indicating who is in the glider on that flight. But again ask first if he can work out his deals without club involvement.

Intro Field

In the case of Intro flights or tows by visiting private owners the Tow Customer field may contain a person who is not on the billing list. The corresponding form must accompany the logs sheet for the day.

- Enter the persons name in the Tow Customer field
- Check the Intro field
- Find the Intro or Visiting Private Glider form. Confirm the flight has been paid for in advance. Enter glider, takeoff and landing times on the intro form to match it to this logged flight.

Instructor or Passenger

This is the person in a two place glider who is not the Tow Customer.

Glider Field

Enter the complete registration number (you don't need to include the leading N) or contest number of the glider. Club gliders and tow planes are listed on the back of the example log sheet. If it is a private ship use the contest number (the big 2 or 3 digit numbers or letters on the fin, or the wing) or "N" number.

Tow Height

Don't write a K after the number. If you think the tow height is three thousand feet or you don't know then leave the field blank. The Tow Customer will be billed for a three thousand foot tow. If you know the tow height and it is not three thousand feet then enter it in decimal thousands of feet to the nearest one hundred. For example:

1200 = 1.2

2700 = 2.7

300 = 0.3

3000 =

Tow Plane Field

Enter B, P or Z

B	3563B	Cessna L-19 Birddog
P	9716P	Piper Pawnee
Z	6368Z	Piper Pawnee

Tow Pilot Field

Enter an abbreviation for the tow pilot. JO for Jeff Orchard etc. Please, as you add abbreviations for tow pilots, add a legend at the bottom of the form. I.e. JO = Jeff Orchard and so on.

Launch / Land Fields

Log the takeoff time and landing time of all GBSC Gliders in 24hr format (example 11:30 = 11:30 and 2:45 = 14.:45). It is important to log the landing time for private ships to be sure of their return. If for some reason you miss the landing time of a ship, attempt to find out an approximate one, and log that, barring that, when you have confirmed that they have safely returned (or are being retrieved) you can note that they are confirmed down.

Junior Hours

Don't draw borders around junior data. Enter the junior's name in the Tow Customer field. Write JR HRS in the Instructor / Passenger field. Enter start time in Launch field and finish time in Land field. Leave all other fields blank. If you leave your duty and come back then log a separate entry for each time period served.

Aero Retrieves

Write "retrieve <airport name>" in the Instructor / Passenger field or write a note on the back of the log sheet. Launch and tow height fields should be empty.

Non Billable Flights

Instructor currency flights and some rare cases such as news media events may not be billable. In this case write a note on the back of the log sheet indicating the line number of the flights.

APPENDIX D - CHECKLIST SFO, LOGGER & MITSA JUNIORS

Pre-flight Line Operations

- Arrive at the field prior to 9:00 a.m.
- Open the clubhouse.
- Set up the worktable by the picnic bench on 16 and near the Green Club house on 34.
- Locate the Logger clipboard, pens, club brochures (these should be in the clubhouse).
- Set up the launch order list.
- Set up the GBSC sign on the grass near the road (Only if using runway 34). The sign is in the clubhouse.
- Get a tow rope out for the day if one is neede for the Bird Dog. . Inspect them for knots, weak spots, length, proper ring connections etc. Repair or replace inadequate tow ropes. Set them up next to the launch grid (tow ropes are in the green shed).
- Get the Aviation hand helds radios club cell phone, and walkie-talkies from battery shack attached to the FBO building.
- Get the carts from the hangar. (The keys for the carts are in the battery shack) Top off gas and oil as necessary. Instructions for operating the carts are on a placard.
- Preflight a two place glider. Draft "volunteers" if need be.
- Tow the glider to the secondary staging area.

Post-flight Line Operations

- Make sure all the tow planes and all the gliders are securely tied down. Lock all control surfaces in place with aileron/rudder locks and by immobilizing the stick with bungee cords or harness straps. Severe damage can result to unsecured control surfaces in high winds.
- Remove all the batteries from the gliders and place them on charge in the battery shack attached to the FBO. E glider and sorer
- Remove any ballast from the glider and store its proper location.
- Make sure all the glider canopies are its proper secured and covered, if a cover exists..
- If a canopy cover is used, cushions are to remain in the glider and the vent window left open.
- Re-coil the tow lines, re-inspect them as you go. Hang them on the pegs in the clubhouse.
- Put all Carts away in the hanger. Lock the carts and put the keys in the battery shack. Be sure all carts are off, and electric ones are charging.
- Check the flight log and make sure that every flight is logged. Place the log sheet in the large envelope and place the envelope in the post operations box. (If Paper Log is used)
- Stow the unused pens, log sheets, etc., in the clubhouse.
- Clean up around the clubhouse, store the worktable, and sign in the clubhouse, remove trash.
- Stow lawn chairs.
- Stow the sign
- Close and lock the green shed and battery shack.

APPENDIX E - RADIO USAGE

E.1 General

Most club gliders, as well as the tow planes, are equipped with two-way radios operating in the VHF aeronautical radio frequency band. Radios in the gliders are powered by rechargeable (i.e., storage) batteries. Typical uses are:

- position reports
- condition reports
- traffic alerts
- "bring the club glider back" requests
- along with more general soaring communications such as saying hello to a friend 100 miles away or pointing out landing areas to a flying companion.

The radios in use are half duplex on a single frequency. This means:

- the radio transmits and receives on the same frequency
- the radio cannot transmit and receive simultaneously
- only one radio in the area can transmit at a time
- you can not hear messages while transmitting
- you must listen on the frequency before transmitting to ensure that no one else is transmitting

E.2 Frequencies

The frequencies of 123.3 and 123.5 MHz are assigned to flight schools and glider operations. The soaring community uses 123.3 and 123.5 for glider to glider as well as glider to ground communication. 123.5 is used when 123.3 is too busy. 123.3 is also used as the "company" frequency for various FBOs and flight operations.

If a contest is operating on one of the frequencies, use the other one as there are probably a lot of ground transmissions you cannot hear which you will "step on". (Contests are indicated by the calling out of many contest numbers with no other information being transmitted.)

E.2.1 Common Traffic Advisory Frequency

Airports without a control tower, (magenta colored airport symbols on the sectional), utilize a Common Traffic Advisory Frequency (CTAF) on which all traffic, landing or taking off, broadcast their intentions.

No replies are expected on this frequency. The goal is that all aircraft operating in the area will hear these broadcasts and be aware of the traffic. The CTAF frequency is charted on the sectional. The Sterling CTAF is 122.9.

E.2.2 Air To Air

The only FAA/FCC supported frequency for air to air communication is 122.75. This frequency is typically unusable due to non stop chatter between power pilots. It is a good frequency to use if you need to have a long conversation.

E.2.3 Emergencies

121.5 is a dedicated emergency frequency. Do not transmit on 121.5 unless there is an emergency. Preface your transmission with "MAYDAY, MAYDAY, MAYDAY." 121.5 is monitored by commercial aircraft and airports.

E.3 Usage

E.3.1 Phraseology

Normal aircraft radio identification is via the aircraft registration number. When communicating with Air Traffic Control (ATC), use your full registration number, preceded by "glider". For example, say "Glider seven six PAPA SIERRA," to identify a glider with the registration N76PS. Note that the initial "N" is implied and not spoken. When speaking letters of the alphabet, such as a glider registration number, use the phonetic alphabet.

Once communication is established with ATC, the last three characters of the registration are usually sufficient. Glider to glider communications usually use the contest numbers or the last two characters of the registration.

When initiating communication, first state the entity trying to be reached, followed by your identification number.

GLIDER: *Nashua tower, glider one three zero charlie alpha.*

E.3.2 Frequency Congestion

The message capacity of a frequency is really quite limited. It is not unusual for the frequency to be full, i.e., almost continuous transmissions. A full frequency not only limits your ability to use the radio for your needs, but is very annoying to listen to. While there may be a strong urge to turn off the radio to avoid the chatter, a better solution is fewer transmissions.

The range of a glider radio at a few thousand feet off the ground, is approximately 150 miles! This means many gliders are sharing the frequency and everything said is heard by a lot of people.

Conversely, when transmitting on or low to the ground, it is not possible to receive (hear) all the traffic on the frequency. The frequency may sound quiet, when in reality, gliders in the air may be receiving many transmissions. Therefore, keep ground transmissions to a minimum.

E.3.3 Takeoff and Landing

The CTAF is used to broadcast landing and takeoff intentions and positions. The tow plane usually handles the takeoff transmissions. However, prior to takeoff the glider pilot may want to tell the tow pilot to "take up slack" and "ready for takeoff".

GLIDER: *Bird-dog, glider four one sierra, take up slack.*

TOW PLANE: (may or may not acknowledge, but takes up slack)

GLIDER: *Bird-dog, glider four one sierra, ready for takeoff.*

TOW PLANE: *Sterling traffic, Bird-dog with glider in tow rolling on runway 34.*

After releasing from the tow plane, glider pilots may also inform the tow pilot they have released:

GLIDER: *Bird-dog, glider four one sierra, off and clear.*

Listen to the frequency a minute or two before entering the pattern to determine the current traffic situation. Enter the pattern at the proper place and time. Do not hesitate to cut inside power traffic, if their patterns are too wide for you to follow.

GLIDER: *Sterling traffic, glider seven six papa sierra entering left crosswind runway three four Sterling.*

GLIDER: *Sterling traffic, glider seven six papa sierra turning final runway three four Sterling.*

It is also good practice when operating in the vicinity of an airport, to monitor other traffic and periodically announce your position:

GLIDER: *Fitchburg traffic, glider seven six papa sierra circling at eight hundred feet, one half mile north of runway three two Fitchburg .*

Be aware that not all traffic in the pattern will have a radio. Be aware that many airports share the same CTAF frequency.

Note: Before exiting the cockpit, turn off the radio and any other electronics. The club member(s) tying down the glider at the end of the day turns off the electronics, turns off the master switch, and removes the battery and puts it on charge in the battery shack.

E.3.4 Operating Procedures for Controlled Areas

There is not much need to talk to Air Traffic Control (ATC) from our gliders. ATC does not especially like to deal with gliders anyway. Those areas where it might be necessary are when entering Class D Airspace (such as Nashua) or entering Class C Airspace (such as Manchester).

E.3.4.1 Class D Airspace

Prior to entering Class D Airspace, call the tower and state position and intentions. They will permit scratching (at a reasonable altitude) as long as they are kept informed. If a landing is imminent, let the tower know.

GLIDER 130CA: *Nashua tower, glider one three zero charlie alpha.*

NASHUA TOWER: *glider one three zero charlie alpha, Nashua tower.*

GLIDER 130CA: *one three zero charlie alpha is three miles west descending into your airspace, heading south east, searching for lift.*

NASHUA TOWER: *glider zero charlie alpha, roger, report any change in your intentions.*

GLIDER 130CA: *zero charlie alpha, will keep you informed.*

E.3.4.2 Class C Airspace

Entering Class C Airspace requires two way radio communication and a transponder. Without a transponder, permission to fly through Class C Airspace is unlikely. Call ATC and ask. If they are not busy, they may permit entry. The tower frequency is on the sectional, in the blue boxes outside the Class C Airspace circle.

GLIDER 130CA: *Manchester Approach, glider one three zero charlie alpha, one two miles southwest at four thousand two hundred, heading northeast, request clearance into the Class C Airspace, negative transponder.*

While there are some FARs taken more seriously than others, flying in Class C Airspace without a clearance is one not to be taken lightly.

E.3.5 Position Reports

Position reports are perhaps the most common usage of 123.3. Unfortunately, it can be one of the most frustrating exchanges due to inaccurate or vague responses. When two gliders are trying to locate each other, very accurate and specific position reports are needed. Nothing consumes more airtime and irritates others on the frequency more than a continuous exchange of: "where are you", "I'm right here", "I don't see you".

Position reports should consist of a bearing and a distance from a charted landmark, along with altitude to the nearest 100 feet, such as:

GLIDER 1A: *Bravo one, one alpha, what's your position?*

GLIDER B1: *Bravo one is three miles northeast of Lakewood at five point six*

Poor position reports:

GLIDER B1: *ah...er... I'm near Milford*

GLIDER B1: *just north of the lake*

GLIDER B1: *under this big cloud*

Probably the most common error in position reports is actually realizing your true position. At 5000 feet AGL, it does not take much angle to be several miles off, which will make a rendezvous very difficult. Unless you are in a steep circle, if you can see it, you aren't there! Look straight down. As for judging distance, Sterling airport is 9 statute miles from Fitchburg airport. Next time you fly, get a feel for how it looks from different altitudes.

E.3.6 Traffic Alerts:

When flying closely with other gliders, there are two types of traffic alerts that are sometimes useful - power traffic, and close soaring traffic. It's usually better to use a direction rather than a "clock" position unless the two gliders are flying straight and level together.

GLIDER B1: *One Alpha, jet traffic, one mile west, level*

In the case of two sailplanes flying together where pull ups and thermal entries cause the two planes to keep coming within a couple hundred yards of each other, very brief messages are used, usually without call signs because you recognize each other's voice.

GLIDER B1: turning right

APPENDIX F - (DELETED)

APPENDIX G - BY-LAWS

BY-LAWS OF GREATER BOSTON SOARING CLUB, INC.

ARTICLE I

Articles of Organization

The name of the corporation, the purposes for which it is established, and the nature of the business to be transacted by it, shall be as set forth in the Articles of Organization, as from time to time amended. The powers of the Corporation, Greater Boston Soaring Club, Inc. (hereinafter called the "Club") and of its directors, officers, and members, and all matters concerning the conduct and regulation of the business of the Club, shall be subject to such provisions in regard thereto, if any, as are set forth in such Articles of Organization, and such Articles of Organization are hereby made a part of these By-Laws.

ARTICLE II

Membership

1. Classes. There shall be the following classes of membership of the Club: regular, family, junior and private. Other classes of membership and degrees of association may be created by majority vote of the Board of Directors.

2. Qualifications. New members may be admitted to the Club upon the affirmative vote of two-thirds (2/3rds) of the Board of Directors, who in determining membership shall not discriminate on the basis of sex, race, color, religion or ethnic or national background. A person admitted into membership shall be deemed an active member upon payment of the initiation fee and other charges as determined by the Board of Directors.

3. Active Members. Active members shall be those members who have paid all fees and charges assessed by the Club. Active members shall be entitled to participate in all activities of the Club and to utilize all property of the Club, subject to the provisions of these By-Laws and regulations of the Club. An inactive member shall return to active status upon payment of all appropriate fees and charges.

4. Regular Membership. Regular members shall be those members of age of at least eighteen (18) years and so designated by payment of the fees and charges established by the Board of Directors. Each active regular member shall be entitled to one vote on each matter submitted to a vote of the members.

5. Family Membership. Family members shall be members who are dependents of regular members. Fees for family members shall be such proportions of the fees for regular members as is determined by the Board of Directors. Each active family member who is of age of at least eighteen (18) years shall be entitled to one vote on each matter submitted to a vote of the members and shall be entitled to participate in all other activities of the Club.

6. Private Members. Private members are owners of sailplanes who pay fees equal to such proportion of the fees of a regular member as is determined by the Board of Directors. Each active private member shall be entitled to one vote on each matter submitted to a vote of the members and shall be entitled to participate in activities of the Club as provided in the regulations of the Club.

7. Junior Members. Junior members are members under the age of eighteen (18) years. Fees for junior members shall be such proportions of the fees for regular members as is determined by the Board of Directors. A junior member shall not be entitled to vote on matters submitted to the vote of the members.

Upon reaching the age of eighteen (18) years, a junior member shall acquire the status of a regular member upon payment of such initiation fees as are established by the Board of Directors; provided, however, that a junior member who is also a dependent of an active regular member shall be a family member and may become a regular member upon reaching the age of eighteen (18) years without the payment of an additional initiation fee.

8.MITSA Junior Membership – See bylaws.

9. Term of Membership. The term of active membership shall be one (1) year and coincide with the fiscal year of the Club unless otherwise determined by the Board of Directors.

10. Proxies. Voting by proxy may be permitted under such conditions as prescribed by the Board of Directors.

11. Expulsion. The Board of Directors, by affirmative vote of two-thirds (2/3rds) of all the members of the Board, may suspend or expel a member for cause. Any member may resign by filing a written resignation with the Secretary of the Club.

ARTICLE III

Meetings of the Members

1. Annual Meeting. The annual meeting of the members shall be in March each year at a time and place to be determined by the Board of Directors.

2. Special Meetings. A special meeting of the members may be called by the President of the Club, a majority of the Board of Directors or by written petition of at least three voting members of the Club. Upon such written petition it shall be the duty of the Clerk to call the meeting of the members within ten (10) days after receipt of such petition.

3. Notice. Written notice of the annual meeting of the members shall be sent to the members not less than fourteen (14) days before the date of such meeting and by or at the direction of the President or the Clerk. Written notice of special meetings shall be sent to the members not less than seven (7) days before the date of such meeting, by or at the direction of the President or the Clerk. The purpose or purposes for which a meeting of the members is called shall be stated in the notice.

4. Quorum. A majority of the voting members of the Club, by proxy or actual presence, shall constitute a quorum at meetings of the members.

ARTICLE IV

Board of Directors

1. Duties and Powers. The business of the Club shall be managed by its board of Directors, which may exercise all of such powers of the Club and do all such lawful acts and things as are allowed by statute, by the Articles of Organization and by the By-Laws; provided however, that the Board of Directors shall not commit the Club to major financial transactions, except such transactions which are essential for preserving the safety of the Club's members or maintaining the Club's financial condition, without the approval of a majority of the voting members of the Club.

2. Structure. The Board of Directors shall consist of seven (7) members, which shall include the President, Clerk and Treasurer.

3. Selection and Term. The voting members shall elect the Directors. The term of office of a Director shall be one (1) year.

4. Removal. Any member or members of the Board of Directors may be removed for cause at any time by the affirmative vote of two-thirds (2/3rds) of the Board of Directors.

5. Vacancies. Vacancies arising for any reason may be filled by a majority vote of the Board, and the Directors so chosen shall hold such positions on the Board until the end of the term of the Directors they replace or until their successors are duly elected.

6. Resignations. Any member of the Board of Directors may resign at any time; such resignation shall be made in writing and shall take effect at the time specified therein, and, if no time be specified, at the time of its receipt by the President or clerk. The acceptance of a resignation by the Board of Directors shall not be necessary to make it effective.

7. Meetings. The annual meeting of the Board of Directors shall be held immediately after the annual meeting of the members of the Club. Additional regular meetings shall be held periodically as the Board shall schedule. Special meetings of the Board may be held from time to time upon the call of the President or upon a request in writing by any three members of the Board of Directors. Written notice of such special meeting shall be mailed to each Director, setting forth the time, place and purpose of the meeting no less than five (5) days prior to the date affixed. Special meetings may also be held at such times as the full Board may from time to time determine, and, if so determined, no notice thereof need be given.

8. Quorum. At all meetings of the Board of Directors, four (4) members of the Board shall constitute a quorum for the transaction of business, and the act of a majority of the members present at any meeting at which there is a quorum shall be the act of the Board of Directors, except as may be otherwise specifically provided by statute or by the Articles of Organization. If a quorum shall not be present at any meeting of the Board of Directors, the members present may adjourn the meeting by announcement.

9. Voting. At all meetings of the Board of Directors each member of the Board shall have one vote.

10. Committees. At his or her discretion the President may appoint committees of the Board of Directors, with such powers as the President may determine.

11. Compensation. Each member of the Board of Directors shall serve without compensation or reward, except for legitimate expenses incurred in the course of his or her duties or as otherwise provided in the By-Laws.

12. Interest of Directors. No member of the Board of Directors shall have an interest, directly or indirectly, in any transaction of the Club, unless such transaction is approved by the vote of the Board of Directors, from which vote the interested Directors shall abstain, after full disclosure of such interests by the interested Directors. The presence of the interested Directors may be counted in determining the presence of a quorum at a meeting of the Board of Directors.

13. Records. The Board of Directors shall cause to be kept a complete record of all its acts and proceedings and shall present a full statement on the condition of the affairs of the Club at meetings of the members of the Club.

ARTICLE V

Officers

1. Number and Term. The officers of the Club shall be a President, Treasurer, Clerk, Chief Pilot, Maintenance Officer, Director of Operations , and such other officers, as the Board of Directors deems necessary and appropriate. The President, Clerk and Treasurer shall be elected by members of the Club and shall serve for a term of one (1) year. The President, Clerk and treasurer shall also serve as members of the Board of Directors. Other officers shall be chosen by the Board of Directors and shall serve for a term of one (1) year.

2. Removal and Vacancy. The President, Treasurer and Clerk may be removed at any time by an affirmative vote of two-thirds (2/3rds) of the members of the Club or by the affirmative vote of five (5) members of the Board of Directors. Other officers may be removed at any time by a majority vote of the Board of Directors. Vacancies in offices shall be filled by the Board of Directors at its next meeting.

3. Compensation. No officer shall receive compensation or any form of monetary benefit for his or her time and effort other than reimbursement of expenses incurred in carrying out his or her duties as an officer.

4. Duties of Officers. The duties and powers of the officers shall be as follows:

A. President. The President shall be the chief executive officer of the Club and shall have general supervision and direction of the affairs and management of the Club, preside at all meetings of the members of the Board of Directors of the Club, appoint members of committees and serve as an ex officio member with the right to vote on all committees of the Board of Directors. He or she may sign with the Clerk or any other appointed officer of the Club, any deeds, mortgages, bonds, contracts, or other instruments which the Board of Directors of the Club has authorized to be executed, except in the case where the signing and execution thereof shall be expressly delegated by the Board of Directors, these By-Laws or by statute to some other officer or agent of the Club, and shall have such other powers and duties as from time to time may be assigned by the Board of Directors of the Club. He or she shall make a report at the annual meeting of the members of the Club.

B. Clerk. The Clerk shall prepare such reports as directed by the Board of Directors of the Club and keep a record of the proceedings of the meetings of members and the Board of Directors of the Club, see that all notices are fully given in accordance with the provisions of the By-Laws or as required by law, be custodian of the Club's books and records and, in general, perform all duties incumbent to the office of Clerk, and have such other powers and duties as from time to time may be assigned by the President or the Board of Directors of the Club. The Clerk shall act as agent for service of legal process upon the Club unless he or she resides outside the Commonwealth of Massachusetts, in which case the President shall designate another member of the Board of Directors, who is a resident of the Commonwealth of Massachusetts, as agent for service of legal process on the Club.

C. Treasurer. The Treasurer shall have custody of all funds of the Club, receive all monies and deposit them in a depository selected by the Board of Directors in such separate accounts as may be deemed necessary by the Board of Directors. He or she shall deposit in such separate accounts an amount or amounts of money authorized by the Board of Directors as working fund accounts which shall be available for payment by check, signed by the Treasurer or such other person as authorized by the Board of Directors. Expenditures from other accounts shall be made only upon authorization by the Board of Directors and by check signed by the Treasurer or such other person as authorized by the Board of Directors. The Treasurer shall submit an annual report of the financial condition of the Club based on the preceding fiscal year of the Club at the annual meeting of the members. He or she shall also be prepared to report on the financial condition of the Club at any other meetings of the members or the Board of Directors. The Treasurer shall perform all the duties incident to the office of Treasurer and such other duties as from time to time may be assigned by the President or the Board of Directors of the Club.

D. Chief Pilot, Maintenance Officer and Director of Operations . The Chief Pilot, Maintenance Officer and Director of Operations shall have such powers and duties, as the Board of Directors shall determine.

ARTICLE VI

Finances

1. The Board of Directors shall establish a schedule of fees that shall be sufficient to pay the Club expenses and to maintain the value of the Club's assets.

2. Any member who has failed to pay his or her dues or any sum owed to the Club within thirty (30) days after billing may be suspended automatically from the use and operation of all Club equipment.

3. If a member fails to pay any sum owed to the Club for more than sixty (60) days, the Treasurer shall submit a statement of the amount owed, and if such sum is not promptly paid, he or she shall be deemed to have withdrawn from active membership status unless appropriate arrangements have been made with the Board of Directors.

4. Withdrawing from active status of the Club shall not extinguish obligations for sums owed to the Club.

5. The fiscal year of the Club shall begin on the first day of January and end on the thirty-first day of the following December.

6. Before the first day of March of each year, a special auditing committee of two members appointed by the Board of Directors shall audit the books of the Club. The Board of Directors in its discretion may cause an independent audit to be made.

ARTICLE VII

Execution of Instruments

When necessary for, or expedient to, the conduct of any phase of the business of the Club, the Board of Directors may authorize an agent, officer or employee of the Club to negotiate and execute on behalf of the Club any specified contract, conveyance, agreement or other instrument. Such contracts, conveyances, agreements or other instruments, executed by the agent, shall become acts of the Board of Directors when signed by the President and the Clerk or Treasurer.

ARTICLE VIII

Indemnification of Officers and Directors

The Club shall indemnify and hold harmless each person who is now or shall hereafter serve as an officer or Director of the Club, from and against any and all claims and liability, whether the same are settled or proceed to judgment, to which such person shall have become subject by reason of his or her having heretofore or hereafter been an officer or Director of the Club, or by reason of any action alleged to have heretofore or hereafter been taken or omitted by him or her as such officer or Director, and shall reimburse each such person for all legal and other expenses (including the cost of settlement) reasonably incurred by him or her in connection with any such claim, liability, suit, action or proceeding; provided, however, that no such person shall be indemnified against, or be reimbursed for, any claims, liabilities, costs or expenses incurred in connection with any claim or liability, or threat or prospect thereof, based upon or arising out of his or her own willful misconduct.

The rights accruing to any person under the provisions of this Article shall not exclude any other right to which that person may be lawfully entitled, nor shall anything herein contained restrict the right of the Club to indemnify or reimburse such a person in any case even though not specifically herein provided for.

ARTICLE IX

Parliamentary Authority

Robert's Rules of Order Revised shall constitute the ruling authority in all cases in which they are not inconsistent with these By-Laws or with any statute of the state.

ARTICLE X

Notice and Waiver of Notice

Whenever a notice is required by these By-Laws to be given, personal notice is not meant unless expressly so stated, and any notice so required shall be deemed to be sufficient if given by depositing the same in the United States mail, postage prepaid, addressed to the person entitled thereto at his or her address as it appears on the records of the corporation, and such notice shall be deemed to have been given on the day of such mailing. Whenever any notice whatever is required to be given under the provisions of the Articles of Organization or the By-Laws, a waiver thereof in writing signed by the person or persons entitled to said notice, either before or after the time stated therein, shall be deemed equivalent thereto. Attendance by a Director at a Board of Directors' meeting, without protesting the lack of notice prior to the meeting or at the commencement thereof, shall be deemed the equivalent of a written waiver of such notice.

ARTICLE XI

Amendments

These By-Laws may be amended by the vote of two-thirds (2/3rds) of the voting members of the Club present at any meeting, provided that notice of the proposed amendment is contained in the written notice of the meeting, and provided that a copy of the proposed amendment is sent with the notice.

ARTICLE XII

Dissolution

The Club may be dissolved by the affirmative vote of a majority of the voting members of the Club in accordance with Massachusetts General Laws Annotated Chapter 180, Section 11, or any amendment thereto or supplement thereof, and the Articles of Organization.

ARTICLE XIII

Liability

1. Liability Insurance. The Club shall carry adequate liability insurance to protect the Club and its members against suits by third parties or members of the Club.

2. Uninsured Liability. Each operation of any aircraft owned or operated by the Club shall be conducted at the risk of the member under whose control the aircraft is assigned, insofar as responsibility for damage resulting from operation of said aircraft is concerned. If the activity causing such damage involves violations of regulations of the Federal Aviation Administration by the member responsible for the damage, said member may be liable for the entire uninsured non-reimbursable cost of the accident. If no such violation is involved, the responsible member shall be assessed for the uninsured, nonreimbursable cost up to a maximum of $200.00; remaining costs shall be borne by the Club.

ADOPTED: March 8, 1985

ARTICLE XIV

Personal Liability

No director, and/or officer of the Corporation shall have any personal liability to the Corporation or its members for monetary damages for breach of fiduciary duty as a director, an officer, or both, except with respect to:

(1) Any breach of the director's or officer's duty of loyalty to the corporation or its members.

(2) Acts or omissions that are not in good faith or that involve intentional misconduct or a knowing violation of law.

(3) Any transaction from which the director or officer derived an improper personal benefit.