MSC OPERATIONS GUIDE

The MSC Operations Guide *is updated periodically. The current master version of the document is available online at mnsoaringclub.com.*

MSC members are responsible for ensuring that the copy they are viewing is the current version.

Part 1: Flight Regulations

A. Flying Authorization

The Board of Directors determines the regulations regarding the use of club equipment, flight training, cross-country flight, and related activities.

The Director of Operations is responsible for flight activities as authorized by the Board. The responsibility for conducting a specific flight operation is delegated by the Director of Operations to a Field Operation Officer (FOO) assigned for the day.

MSC instructors and the Director of Operations have wide discretion with respect to authorizing members to fly MSP sailplanes. They may authorize members who do not meet the exact letter of the following guidelines, or they may withhold authorization from members who otherwise meet the guidelines.

B. Flying Qualifications

To qualify for flight privileges a person must be a member who is authorized to fly a particular sailplane and to make the type of flight planned (e.g., student solo, pilot in command, cross-country, back seat). To verify such authorization, each member must carry an MSC flight qualification card.

1. Membership Requirements

Only members in good standing will be permitted to fly club sailplanes. Membership classes which include flight privileges are specified in the bylaws. Financial obligations to the club must be current, as specified by the bylaws.

2. Compliance with Rules & Regulations

Members are responsible for being familiar with current FAA and MSC regulations. Members must comply with all applicable regulations, including airport rules and recommended procedures.

3. Safe to Fly

Members are responsible for ensuring that they are physically and mentally safe to fly.

4. Sailplane Authorizations

To fly an MSC sailplane, a member must be checked out in that sailplane by an MSC instructor. Additional authorization must be obtained to act as pilot in command (PIC) from the rear seat of a two-place sailplane, or to make a cross-country flight in an MSC sailplane.

5. Student Solo Flight

Student pilots must have a current endorsement from an MSC instructor to fly solo. To comply with insurance requirements, an instructor must be present on the field to observe each launch by a solo student. To fly the Junior, solo students must have had incipient spin training during the current soaring season. Students must get a new endorsement at the beginning of the soaring season, and every 90 days thereafter.

6. Cross-Country Flight

MSC members who wish to fly a club sailplane cross-country must first participate in cross-country flight training and earn the Soaring Society of America's A, B, C and Bronze badges. The training is intended to reduce the risk of an off-field landing—and to reduce the risk of injury or damage to aircraft in the event of an off-field landing.

The Bronze Badge requirements include the following:

- Completion of the Soaring Safety Foundation's ABC training program (C Badge earned).
- Logging 15 solo hours and 30 solo flights in gliders, with 2 flights of at least 2 hours duration.
- Making 3 solo spot landings observed by an instructor.
- Making 2 simulated off-field landings (altimeter covered) with an instructor.
- Passing the Bronze Badge written exam (and then reviewing with an instructor the topics relevant to each incorrect response).

Members must also learn how to rig and de-rig the sailplane. A signoff by an MSC instructor then qualifies the member to fly the sailplane cross-country.

Requirements for flying cross-country in an MSC sailplane are defined in Part 1, Section C: Flight Restrictions / Cross-Country Flights in MSC Sailplanes.

7. Check Rides

An MSC instructor or the Director of Operations may at any time require that a member take a check ride with an instructor before flying an MSC sailplane. Check rides are strongly recommended for members who have not made a solo flight within the preceding 90 days.

8. Annual Safety Quiz & Safety Meeting

Every soaring season, members must complete a safety quiz prepared by MSC instructors, and participate in a review of the quiz and safety-related topics at the annual Safety

Meeting, generally held in March. Members who miss the mandatory Safety Meeting can arrange a make-up session with an instructor.

9. First Flight with an Instructor (FFWAI)

Every soaring season, each member must take a first flight with an instructor to be approved to fly club sailplanes or to be launched in a privately owned glider by the club tow plane. Typically the "FFWAI" would happen at the beginning of the soaring season.

10. Qualification Cards

MSC instructors issue to each member a flight qualification card that lists different authorizations (solo, cross-country, rear seat) for flying each MSC sailplane. The card also has checkoff boxes for the safety lecture and FFWAI. An MSC instructor will initial the card for each authorization that has been achieved, typically at the annual Safety meeting, or later on the field.

Each Spring new cards will be distributed to all members. It is the responsibility of each member to present the blank card to an MSC instructor and seek re-authorization. A current flight qualification card, properly initialed, is the only valid evidence of authorization. The Field Operation Officer is responsible for ensuring that members fly MSC sailplanes only as authorized.

C. Flight Restrictions

1. Use of Club Equipment

No member may use club equipment for hire, or rent club equipment to any person or organization.

Except during MSC operations (scheduled or ad hoc), members may not launch a club ship behind a non-MSC tow plane unless approved in advance by the Director of Operations.

2. Flight Privileges

A member who is not currently authorized to fly an MSC sailplane cannot act as pilot in command, and can fly in a club sailplane only with an MSC instructor or with a member who does have current flight privileges.

3. MSC Tow Plane

An MSC tow plane can be flown only by qualified MSC tow pilots. The tow pilot is to be the only occupant of the tow plane during tow, unless the flight with a passenger is specifically

authorized by the Chief Tow Pilot or the Director of Operations for purposes such as training or checking out new tow pilots.

4. One-Hour Limit

Flights in MSC sailplanes during regularly scheduled soaring operations (weekends and some holidays) are not to exceed one hour unless approved by the Field Operation Officer. Flights in MSC sailplanes are restricted to the local area around the MSC Soaring Site (i.e., Stanton Airfield) except for properly authorized cross-country flights.

5. Aerobatics

Flight maneuvers that would require parachutes to be worn (per CFR § 91.307) are prohibited, except as authorized by the Director of Operations or an MSC instructor. However, spins, stalls, incipient spins, zero-G flight and wingovers are typical parts of the training curriculum.

6. Clouds, Instrument Flight

Instrument flying and cloud penetration are prohibited. Note that MSC sailplanes are not properly equipped for such flights.

7. Cross-Country Flights in MSC Sailplanes

The qualifications for flying cross-country in an MSC sailplane are defined in Part 1(B): Flying Qualifications / Cross-Country Flight.

A cross-country flight in one of the club's two-place sailplanes is permitted with specific authorization by the Director of Operations or the Chief Flight Instructor, typically for a cross-country camp or a soaring event at another airfield.

A cross-country flight in the Junior during scheduled soaring operations (weekends, some holidays and weekday training events) is permitted if the pilot has made prior arrangements with the scheduled FOO to reserve the Junior for the flight. The FOO must advise club members in advance (via email and Click 'n Glide) that the Junior has been reserved for that time period.

The Junior is available for cross-country flight during ad hoc weekday operations when there is a FOO coordinating the operation. A solo student may fly the Junior during an ad hoc weekday MSC operation when an instructor or FOO will be present to help retrieve and hangar the glider. A FOO-qualified member who has a private pilot-glider license can fly the Junior during an ad hoc weekday MSC operation when there is no FOO in charge.

Before making a cross-country flight in any MSC sailplane, the member must recruit a retrieve crew and make the sailplane's trailer ready for retrieval.

8. FAA Regulations

Members are responsible for being familiar with current FAA regulations. Members must comply with all applicable regulations. The Board of Directors can take appropriate action, including suspension of flight privileges, for a violation of an FAA regulation.

9. Operating Limitations

The pilot in command of a club sailplane must comply with the provisions of the flight manual or pilot operating handbook for that sailplane. Note that there are significant differences between the flight manuals for the ASK 21 and ASK 21 B, despite the similarity of the aircraft.

10.Aircraft Not Owned by MSC or MSC Members

Sailplanes not owned by MSC or an MSC member can be towed by an MSC tow plane only if each launch is authorized by the FOO, who is responsible for ensuring that the sailplane pilot is an SSA member. The pilot's SSA number is to be recorded on the flight log.

11.Instructor Endorsement

An endorsement by an MSC instructor is required before a member is allowed to fly an MSC sailplane, whether the member holds a private pilot license or a student pilot license.

12.Thermaling in the Pattern

Thermaling after entering the pattern is prohibited. Other restrictions on thermaling adjacent to the airfield may apply; see "Landing Pattern Airspace Restrictions".

Part 2: Appointment of FOOs, Instructors, Tow Pilots

A. Field Operation Officers (FOOs)

The Director of Operations or an MSC instructor may authorize a member to be a Field Operation Officer. To qualify, a member must have the appropriate experience and be willing to accept the responsibilities. A FOO candidate must be thoroughly checked out under policies overseen by the Director of Operations.

Generally, newer members lack the experience to serve as FOO. Most FOOs are certificated with a glider rating. Field Operation Officers are given significant authority and responsibility, and must be up to the task by having gained significant operational and flight knowledge. Refer to Part 5, *Field Operation Officer Guide*, for additional information.

B. Instructors

The Director of Operations may appoint a Chief Flight Instructor to supervise MSC instructors, to admit or remove an instructor from the list of active instructors, and to organize the MSC flight instruction program, but the Director of Operations retains ultimate responsibility for MSC instructor appointment.

MSC instructors are appointed by the Chief Instructor or the Director of Operations. Instructors must hold a current (unexpired) FAA-issued flight instructor certificate with a glider rating (CFI-G).

C. Tow Pilots

MSC tow pilots are appointed by the Chief Tow Pilot or the Director of Operations. Tow pilots must meet the applicable FAA, MSC and insurance requirements (see Part 7, *Tow Pilot Eligibility*). The Director of Operations may appoint a Chief Tow Pilot to supervise tow pilot training and to oversee tow pilot performance, but retains ultimate responsibility for tow pilot training and performance.

The Chief Tow Pilot is responsible for maintaining a cadre of active tow pilots. The Chief Tow Pilot has the discretion to admit or remove a tow pilot from the list of active tow pilots.

Part 3: Inspection and Maintenance

A. Field Operation Officer (FOO) Responsibilities

The FOO is responsible for ensuring that a satisfactory inspection of the tow rope and attachments has been completed prior to a soaring operation.

The FOO or an MSC instructor may ground any aircraft deemed to be unsuitable for flight.

B. Director of Equipment Responsibilities

The Director of Equipment is responsible for inspecting and maintaining all club equipment.

C. Equipment Malfunctions

Members must immediately report any equipment malfunction to the FOO or the duty flight instructor. If the FOO or flight instructor is unavailable, the member must note the deficiency in the glider's daily log book and on a placard placed in the aircraft, and then contact the Director of Equipment by the most expeditious means available.

A malfunction or other problem with any club aircraft that renders it unsafe for flight must be reported as soon as possible. A “Do Not Fly” placard must immediately be posted on the instrument panel of the aircraft.

Part 4: Operations

A. Ground Operations

1. FOO Required

In general, a FOO must be present and will be responsible whenever club aircraft or equipment is removed from the hangar, during each flight operation, and when aircraft or equipment is being stowed. However, the FOO may delegate any of these activities to a FOO-qualified member, who then assumes responsibility.

There are two exceptions to the above requirement:

- A FOO-qualified member who has a private pilot-glider license can fly the Junior during an ad hoc weekday MSC operation when there's no FOO in charge. The FOO-qualified pilot is then responsible for safely returning the glider and all club equipment to the hangar.

- If a club two-place sailplane is flown by two members, at least one of whom is FOO-qualified, then with the FOO's prior consent the members may land after the day's operation has ended, when the FOO is no longer present on the field. The FOO-qualified pilot is then responsible for safely returning the glider and all club equipment to the hangar.

2. Handling Sailplanes, Driving Carts

In general, only MSC members are allowed to handle club sailplanes or drive carts, but the FOO may authorize a competent person to assist.

3. Wing Runners & Signalers

Wing runners and signalers must be well-versed in operational procedures at Stanton airfield. It is strongly recommended that each member complete the Wing Runner course offered online by the Soaring Society of America (SSA).

4. Wing Walkers with Wind

When moving sailplanes in high winds, walkers on both wings should be assigned by the FOO. A single wing walker should walk the upwind wing of the sailplane. In extremely windy or gusty conditions, a member may also be assigned to sit in the cockpit and adjust the flight controls to help stabilize the sailplane and prevent them from flapping around in the wind.

5. Securing the Sailplane

A sailplane should not be left unattended on the field at any time unless its canopy is latched. In moderate or strong wind, the lowered wing should be secured to the ground by an adequate weight or tie-down.

6. Runway Selection

In consultation with airfield management, tow pilot and duty instructor, the FOO selects which runway to use. If conditions change, the FOO may change the active runway, but should take into account any power aircraft traffic in the area.

7. Retrieving

Members should be quick to help retrieve landing sailplanes, especially when it's windy or when the sailplane has not cleared the runway. However, ground crew members should not approach the sailplane until it has rolled to a stop.

8. Hangaring

The pilot who makes the last flight of the day in a club sailplane is responsible for helping the FOO return the sailplane to the hangar. At the FOO's discretion, other members may be asked to remain on the field to help retrieve and hangar sailplanes, and to secure other club equipment. Before leaving the field at the end of the day, members are expected to check with the FOO to see if their help is needed.

9. Suspending an Operation

The FOO is responsible for halting a flying operation if the weather or other conditions are judged to be unfit for flying or are likely to become so.

B. Handling Canopies

Canopies are fragile! Pilots, wing runners and other ground crew members should keep the following guidelines in mind. Everyone is responsible for protecting our precious, easily damaged canopies.

1. General Canopy Guidelines

- Do not move a glider with an open canopy. It could slam shut and be damaged.
- Do not leave an open canopy unattended. A bump or wind gust could cause the canopy to slam shut and be damaged.

- Close canopies carefully and slowly. Do not allow the canopy to slam shut. A closed canopy must be latched.

- If the canopy latch does not close easily, do not force it. Something is probably interfering with canopy closure. Investigate.

- Never open a canopy by lifting on the top edge of the vent window. Always use the canopy handle!

- Avoid touching the canopy. When verifying that the canopy is locked, prior to takeoff, push upwards against the canopy frame rather than against the canopy itself.

- Sunlight can be reflected by the inside surface of an open canopy, and focused like a magnifying glass. A seat cushion, headrest, glare shield or anything else in the cockpit can be burned in a matter of seconds. Do not leave a canopy open unless carefully attended.

- When reaching through the vent window to lock or unlock a canopy, be careful not to apply any force to the canopy.

- Open the canopy first to operate the tow release when attaching the tow rope; do not reach through the vent window.

2. Canopy Guidelines for the ASK 21 and ASK 21 B

- The ASK 21 and the ASK 21 B have separate front and rear canopies. To minimize the chance of a canopy mishap on the ground, members must ensure that both front and rear canopies are closed and latched when the sailplane is left unattended. It is usually sufficient to latch only the near (left-hand) side of each canopy.

- The front and rear canopies of the ASK 21 and ASK 21 B have latches on both sides. Pilots must ensure that both latches for each canopy are properly closed before takeoff.

- The latches of the front and rear canopies of the ASK 21 B are interlocked. The front canopy cannot be locked unless both sides of the rear canopy are latched. Do not try to force the front canopy closed; first latch the rear canopy. Be careful to fully engage the latches: first close them until a “stop” is felt, then push more to fully close the latch in the locked position.

- The rear canopy of the ASK 21 B can be opened even though the front canopy remains closed. It would therefore be possible to launch with the rear canopy unlatched—in that event, the rear canopy would surely be blown away, possibly damaging the tail. Make sure that both latches for the rear canopy are closed.

- If flying the ASK 21 solo, lock the rear canopy before climbing into the front seat. If flying with a passenger who is not a glider pilot, be sure to instruct the passenger not to touch the latches in flight. In all cases it is the responsibility of the pilot to ensure that both canopies are properly latched before takeoff.

- On the ground, it is sufficient to secure the front and rear canopies of the ASK 21 or ASK 21 B by closing the left-hand latches only.

C. Flight Reports

1. Logging Daily Flights

All flights must be logged on a daily flight sheet. After the day's flying activities, the flight sheets should be placed in the designated location in the clubhouse. The FOO should photograph the flight sheet and send it via text or email to the club treasurer and/or the billing assistant.

2. In the Event of an Accident or Incident

Any accident or incident involving injury or nontrivial equipment damage must be reported immediately to the Field Operation Officer and to airfield management. Refer to Part 6, *MSC Emergency Response Plan*. A written report describing the accident or incident (or less serious event, such as minor damage to a sailplane) must be submitted to the Director of Operations.

3. In the Event of a Landout

If an MSC sailplane on a local flight lands out, the pilot is responsible for assembling a retrieval team, returning the sailplane to the airfield and reassembling it. The pilot must submit a written report about the outlanding to the Director of Operations.

Of course, the FOO and other MSC members should provide any assistance that may be needed to safely retrieve any sailplane, whether it's a club ship or a member-owned sailplane.

4. Regulation Violation

A member who violates flight regulations or who witnesses a violation is responsible for reporting it to the Director of Operations. Members are encouraged to report violations to the FAA's Aviation Safety Reporting System (https://asrs.arc.nasa.gov).

5. Aircraft Malfunction

A malfunction or other problem with any club aircraft must be reported as soon as possible. See Part 3 (C), *Equipment Malfunction*.

D. Flying Preference

1. Priority Preference List

During scheduled operations a priority list is used by the FOO to determine which member may make the next flight, either in an MSC sailplane or a privately owned sailplane. Upon arriving at the field, members add their names at the bottom of the priority list. A member can designate a sailplane preference (e.g., Junior, ASK 21).

The member whose name is at the top of the list is offered the next opportunity to launch, assuming the sailplane the member wants to fly is available. The member may choose to pass, in which case the next member on the list is given the option to fly or pass. This process continues until a member exercises the option to fly. The name of that pilot is crossed off the list at the time of takeoff.

As each sailplane lands the pilot is responsible for clearing the runway, moving the sailplane back to the flight line and securing the sailplane. Then the name of the pilot may be re-entered, at the bottom of the priority list.

Members who are signing up for instruction use a separate list on the priority sheet.

The FOO may give priority preference to practical exam flights, flight reviews, first solos, badge/record flights and demonstration or courtesy rides.

See topic (5) Instruction, below, for how students can sign up for instruction in the afternoons of a scheduled operation.

2. Family Members

If a Family member and the Family member's sponsoring Active member wish to fly during the same operation, they must share one position on the priority list. For example, if the Active member flies first, the Family member's name cannot be placed on the priority list until the Active member has landed.

A Family member and the sponsoring Active member (or two Family members having the same sponsoring Active member) cannot both have priority for instruction on the same day. Only if there are otherwise unfilled instruction slots can both members get instruction on the same day.

3. Passengers

A member who flies as a passenger in a two-place sailplane retains his or her position on the priority list.

4. Badge and Cross-Country Flights

The FOO should make reasonable efforts to give launch (and re-launch) priority to pilots attempting bonafide cross-country and/or badge flights.

5. Instruction

During scheduled instruction, the club's sailplanes are reserved for instruction until 12 PM noon. Likewise, launch priority is given to instruction flights until noon.

The FOO may allow any member to fly a club sailplane before noon if the ship is not needed for instruction. In such cases, and if the member lands before noon, the member's position on the launch priority list is retained. The FOO may launch any sailplane during the instruction period if it would not delay or otherwise interfere with instruction flights.

Students (members who do not have a private pilot-glider certificate) may put their names on the pilots' priority list to fly a club ship in the afternoon of a scheduled weekend operation if an instructor is willing to fly with them or, in the case of solo students, if an instructor will be present to observe the launch. However, students are not allowed to add their names to the pilot priority list until 12 PM.

6. Signing Up for Instruction

Students and other members sign up via Click 'n Glide for instruction on weekend mornings or midweek training events. Per club policy, Click 'n Glide will not allow a student to be signed up for more than four instruction slots. This policy was established to ensure equitable access to instruction for all members. A student with four future signups would have to cancel one of them before trying to sign up for a newly opened training slot on a preferable day.

Members who sign up for instruction on Click 'n Glide but then determine that they will not show up at the designated time are required to cancel their signups as soon as possible. When a member doesn't show up for instruction, it takes away the opportunity for other members to get instruction, and annoys everyone involved. For a late cancellation (within 4 days of the reserved date) the member should email or call the scheduled FOO, in addition to canceling on Click 'n Glide.

7. FOO's Discretion

The FOO may give priority preference to practical exam flights, flight reviews, first solos, badge/record flights and demonstration or courtesy rides.

8. Cross-Country Flights in MSC Sailplanes

The qualifications for flying cross-country in an MSC sailplane are defined in Part 1(B): Flying Qualifications / Cross-Country Flight.

Other requirements for flying cross-country in an MSC sailplane are defined in Part 1(C): Flight Restrictions / Cross-Country Flight in MSC Sailplanes.

The FOO is responsible for verifying that the member is qualified and approved to fly a club ship cross-country.

A cross-country flight in the Junior during scheduled soaring operations (weekends, some holidays and weekday training events) is permitted if the pilot has made prior arrangements with the scheduled FOO to reserve the Junior for the flight. The FOO must advise club members in advance (via email and Click 'n Glide) that the Junior has been reserved for that time period.

9. Guest Pilots

See Part 1, Section C: Flight Restrictions / Aircraft Not Owned by MSC or MSC Members.

E. Field Flight Patterns

1. Standard Landing Pattern

The flight pattern to be used at Stanton is the AIM standard left-hand pattern with a 45-degree dogleg entry, as shown in Figure 1. At Stanton, sailplane pilots should enter the 45-degree dogleg at approximately 800' AGL. Pilots may deviate from this pattern when required for safety.

Tow pilots and pilots of higher performance sailplanes must be aware that inexperienced pilots fly the club sailplanes. More experienced pilots should be ready to adjust their patterns to minimize conflicts with less experienced pilots.

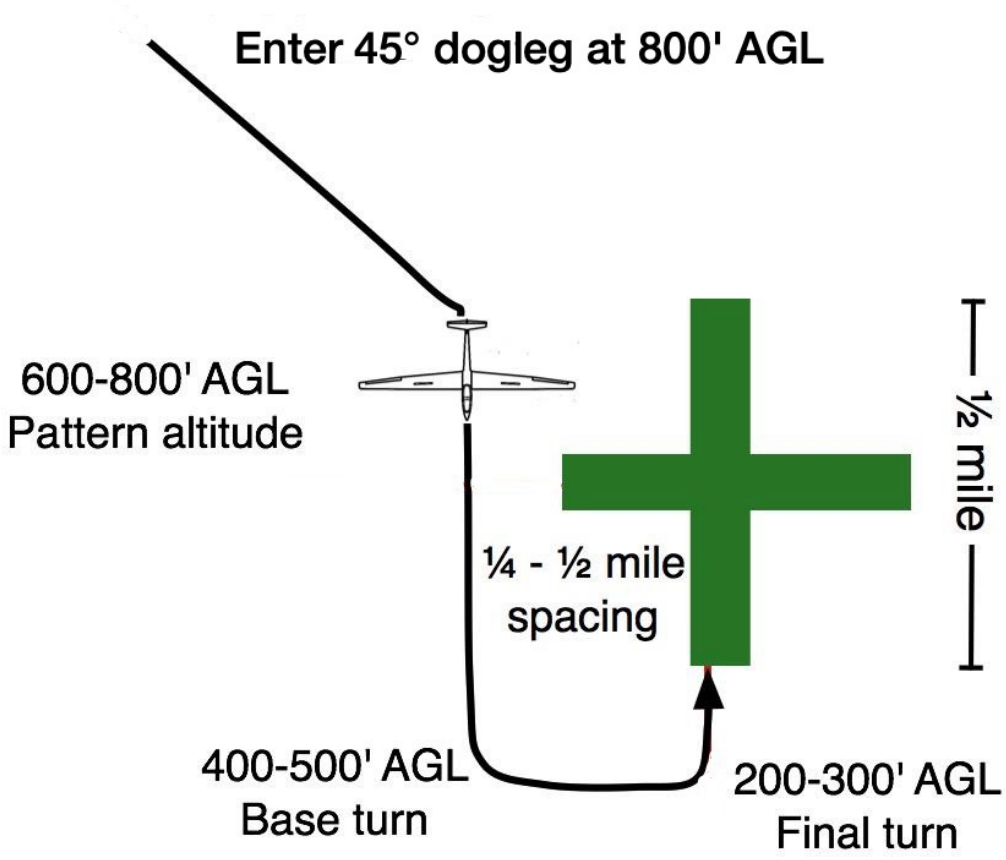

Figure 1: Standard landing pattern at Stanton (in still air conditions)

2. Landing Pattern Airspace Restrictions

Figures 2-5 illustrate rectangular landing pattern regions for each of the four active runways. Sailplane pilots should not fly in the active landing pattern airspace below 2400' MSL except when transitioning into the pattern or landing (i.e., no thermaling).

Each of the rectangular areas is 1.5 miles long and 1.0 mile wide. One long edge of the rectangle overlies the centerline of the active runway. The rectangle extends from 0.5 mile upwind of the cross runway to 1.0 mile downwind from the cross runway.

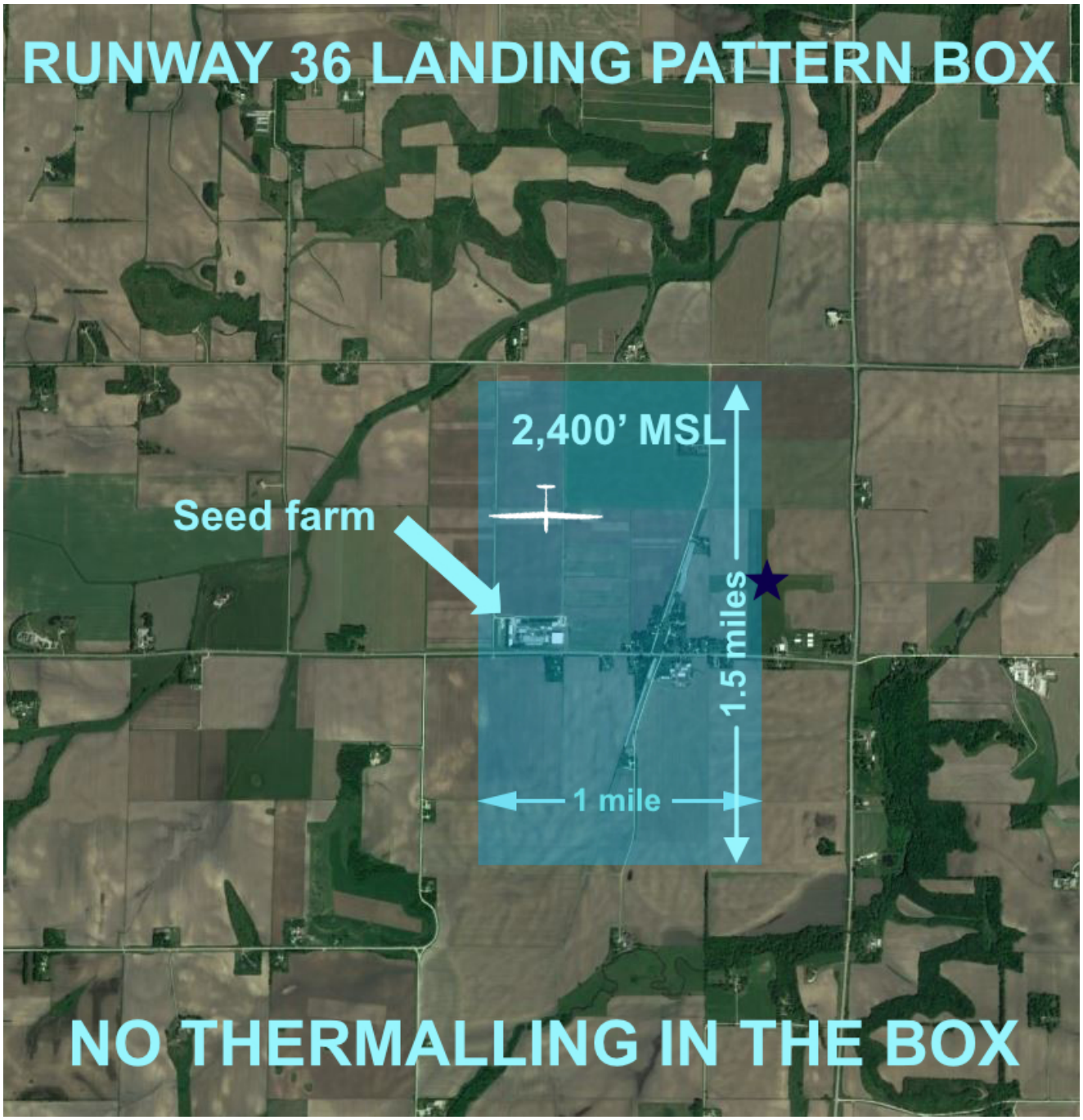

Figure 2: Runway 36 Landing Pattern Box

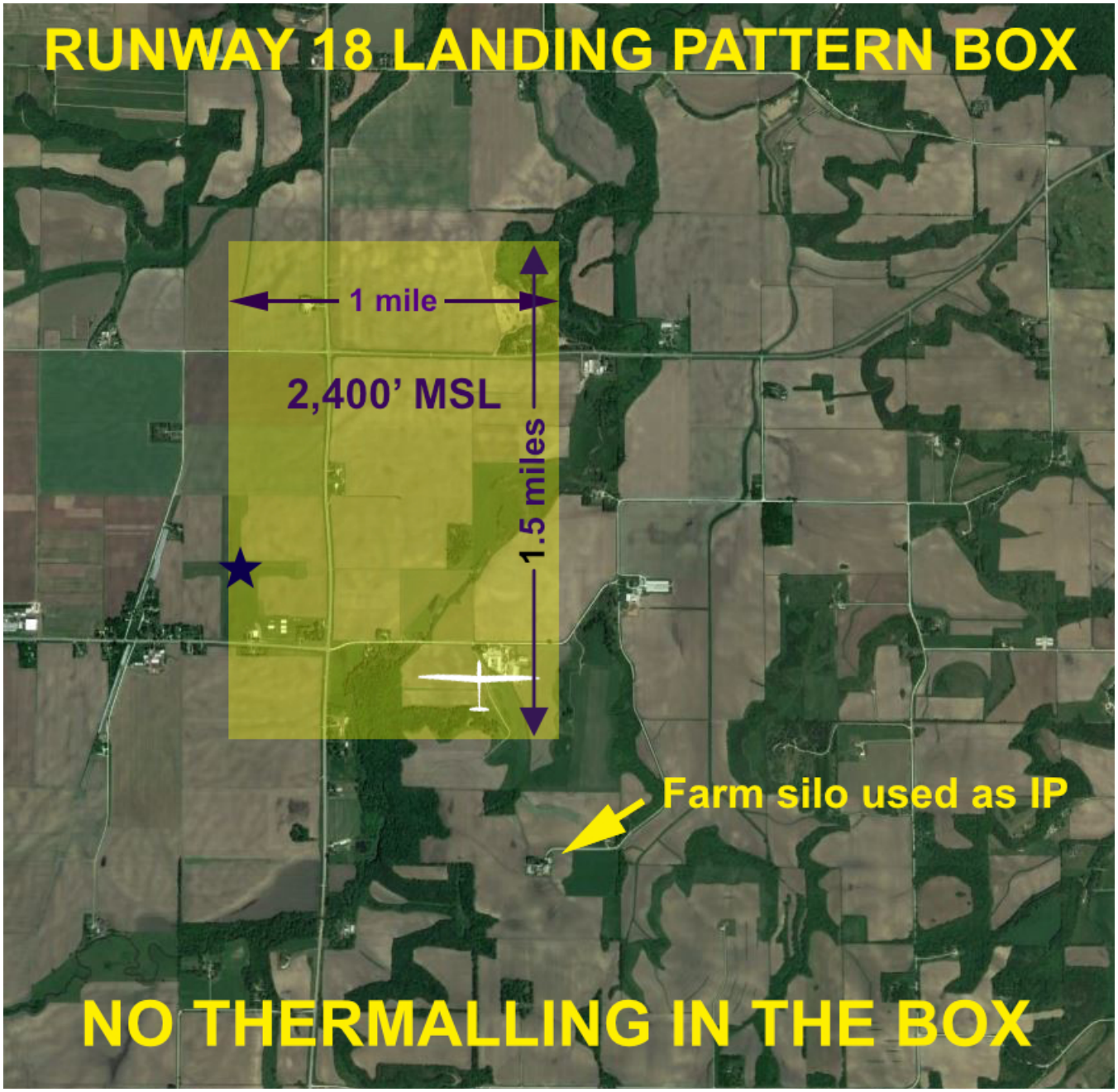

Figure 3: Runway 18 Landing Pattern Box

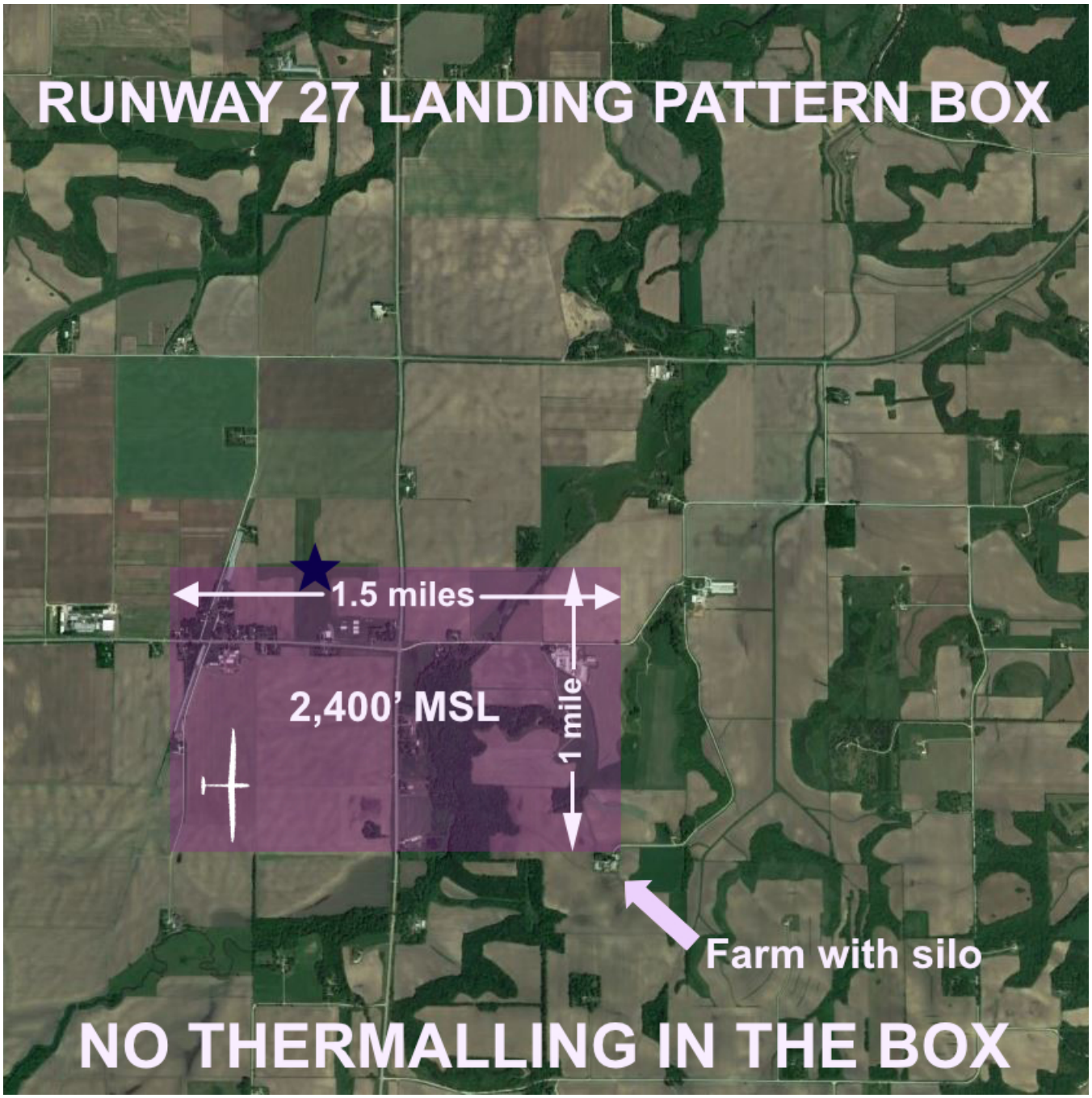

Figure 4: Runway 27 Landing Pattern Box

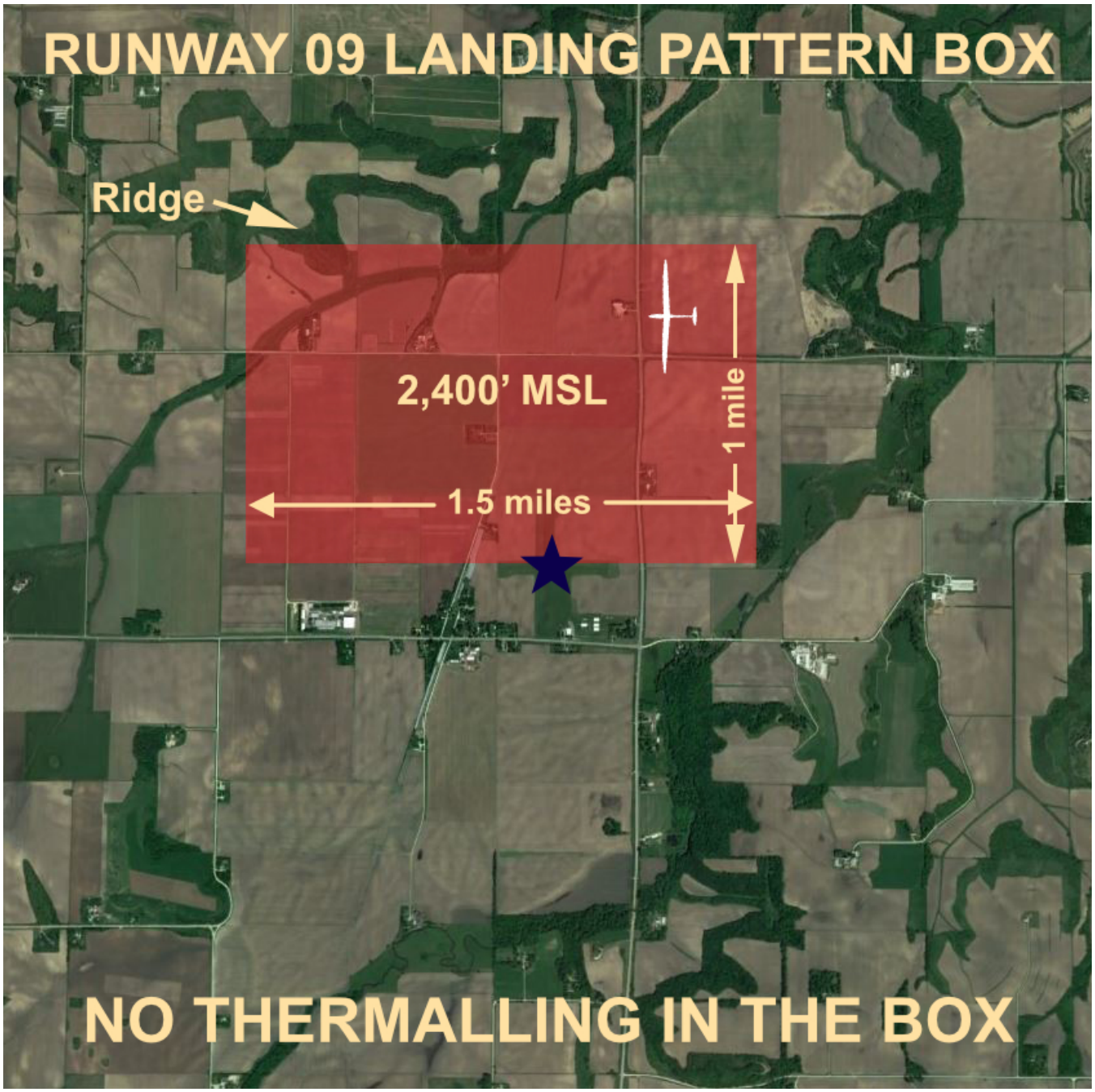

Figure 5: Runway 09 Landing Pattern Box

3. Pattern Tows

A practice pattern entry tow will be to at least 2400' MSL (1500' AGL). *The tow plane will land first*. The minimum release height of 2400' allows the glider to circle a few times before entering the pattern, in order to maximize separation from the tow plane. See Figure 6, *Typical Pattern Tow*.

If required for safety, the sailplane can land before the tow plane, provided the sailplane pilot confirms the change with the tow pilot.

To increase separation from the airfield, typically the tow pilot will commence a 45-degree right turn at 1000' to 1200' AGL.

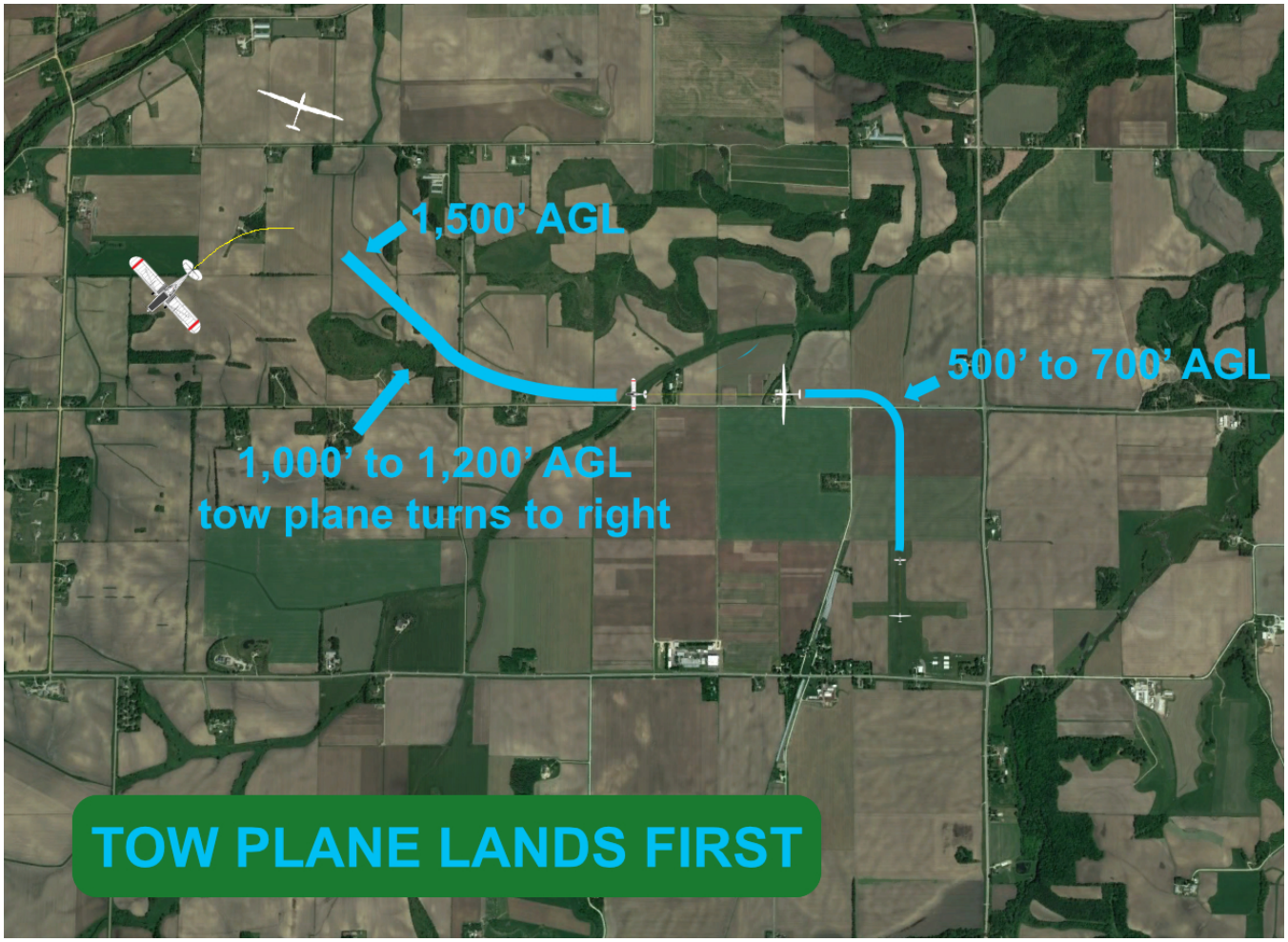

Figure 6: Typical Pattern Tow. The glider pilot releases at 1500' AGL and turns right. The tow plane turns left, and lands before the glider does.

Instructors have the discretion to intentionally terminate tows at lower altitudes for training purposes, and any pilot may do so in an emergency or urgency situation.

To minimize the chance of a midair encounter between the sailplane and tow plane, the following procedure is strongly recommended for pattern tows:

> On the ground before launching, the tow pilot and glider pilot confirm that the tow pilot will land first.
>
> Upon release, the sailplane pilot confirms that the tow pilot will land first by radioing something like, "Tow Plane niner-zero-yankee, glider has released and will land second."

F. Launch Signals and Procedures

In preparation for a sailplane launch, a sailplane wing runner and a tow plane starter (signaler) assist communication between the sailplane pilot and the tow pilot. The wing runner and the starter facilitate safety by ensuring that the launch does not conflict with other traffic and that the runway is clear.

Figure 7, *Aerotow Pre-Launch Signals*, illustrates the signals used on the ground for launching a sailplane. Standard launch procedures are as follows:

- The sailplane pilot is in command. All takeoff signals must originate from the sailplane pilot (or the student, in a training flight with the instructor aboard).
- The sailplane wing runner has the primary responsibility of ensuring that there is no conflicting traffic. The wing runner must check for traffic on the cross runway and upwind, as well as in the active pattern.
- The sailplane wing runner places the sailplane wingtip on the ground when there is a delay. The wingtip on the ground makes it obvious that the takeoff is delayed.
- The starter (signaler) should stand along the edge of the runway within sight of the tow pilot. The starter should also check for conflicting traffic.
- The starter relays signals to the tow pilot, as directed by the wing runner. However, the starter may at any time signal to hold or stop the launch.
- When the sailplane pilot gives the thumbs-up signal, the wing runner levels the wings and gives the Take Up Slack signal.
- The sailplane pilot signals readiness to launch by pointing forward with an index finger. The wing runner, after checking for traffic, gives the Begin Takeoff signal. After a final check for conflicts, the starter relays the Begin Takeoff signal to the tow pilot.

Figure 7: Aerotow Pre-Launch Signals (from *Glider Flying Handbook*, FAA-H-8083-13A, 2013)

G. Airborne Signals

1. Airborne Signals in Normal Flight

Refer to Figure 8, *Aerotow In-Flight Signals*. The following signals can be used by the sailplane pilot and tow plane pilot in flight, whether or not radio communication is possible.

- Request Right Turn: The sailplane moves to the left and high, to a position where the tow pilot can see the glider, but not beyond the bounds of the wake box.
- Request Left Turn: The sailplane moves to the right and high, to a position where the tow pilot can see the glider, but not beyond the bounds of the wake box.
- Request Speed Up: From directly behind the tow plane, the sailplane rocks its wings repeatedly.
- Request Slow Down: From directly behind the tow plane, the sailplane yaws repeatedly.

2. Airborne Signals for Abnormal Conditions or Emergencies

Refer to Figure 8, *Aerotow In-Flight Signals*. The following signals can be used by the sailplane pilot and tow plane pilot in flight whether or not radio communication is possible. *See the next section for emergency procedures.*

- Release Immediately: The tow plane rocks its wings two or more times. The sailplane must release without hesitation!
- Glider Problem, Spoilers Are Open: The tow pilot waggles the rudder rapidly (with little or no yawing).
- Sailplane Cannot Release: The sailplane moves out to one side (preferably to the left, so the tow pilot can see) and rocks the wings.
- Tow Plane Cannot Release Either: The tow pilot uses the rudder to yaw back and forth.

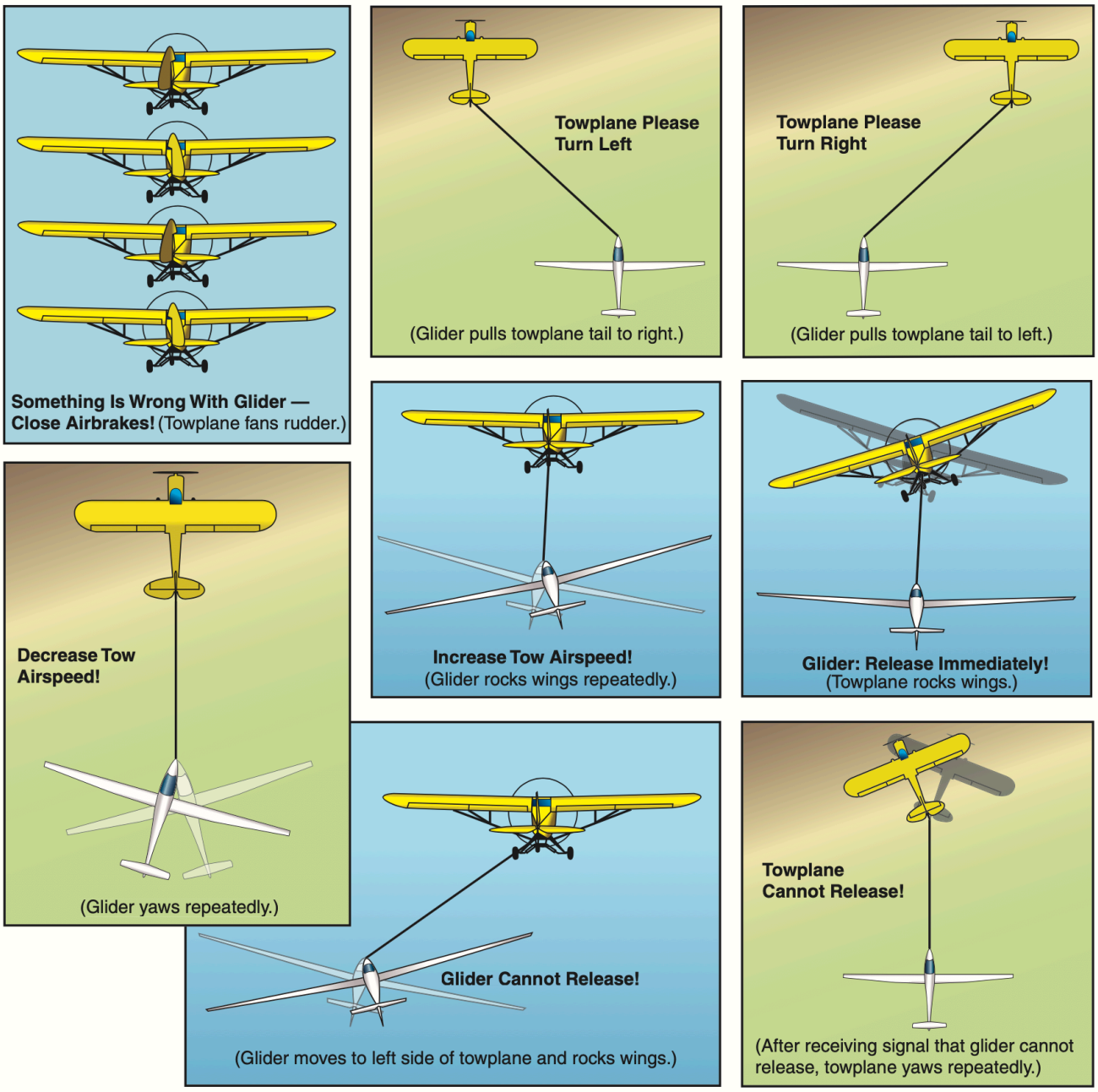

Figure 8: Aerotow In-Flight Signals
(from *Glider Flying Handbook*, FAA-H-8083-13A, 2013)

H. Emergency Procedures

Except for immediate-release commands, the following standard procedures would best be coordinated by radio, assuming the two pilots have radio communication.

1. Immediate Release Signal

When the tow plane rocks its wings, the sailplane must release immediately.

2. Tow Plane Not Visible

If at any time the sailplane pilot loses sight of the tow plane, the sailplane pilot must release immediately.

3. Sailplane Cannot Release

If the sailplane has signaled that it cannot release the towline, the tow plane should tow the sailplane over the airfield or other designated soaring site. The sailplane pilot should maintain a high tow position.

The tow pilot releases the towline at an adequate altitude above the airfield. The sailplane, with the towline still attached, should cross the landing area boundary high enough to prevent the dangling towline from hitting anything or getting snagged.

4. Neither Sailplane Nor Tow Plane Can Release

When the tow pilot and sailplane pilot have signaled or radioed each other that neither aircraft can release the towline, the standard procedure would call for the tow plane to proceed to the largest practicable landing area within reasonable range.

The tow plane should gradually descend while the sailplane pilot descends to the low-tow position, and yaws to prevent overrunning the tow plane, using airbrakes only if yawing is insufficient. The final approach to landing should be straight-line, shallow and at least one mile long.

On the landing roll, the tow plane should use no brakes, and perhaps apply a little power to extend the roll. The tow plane should favor the left side of the runway. The sailplane should favor the right side of the runway.

Assuming radio communication is possible, the two pilots should plan and coordinate this procedure by radio. In any case, the tow pilot (assumed to have a radio) should declare an emergency to keep the area clear of other traffic.

5. Aborted Takeoff Roll

When the takeoff roll must be aborted due to engine failure, conflicting traffic or other factors, both the tow plane and the sailplane should release the towline. The tow plane should favor the left side of the runway, and the sailplane should favor the right side of the runway.

6. Tow Plane Engine Problem

In the event of an engine problem that stops short of complete engine failure, the tow plane should attempt to continue level flight in order to get the sailplane in a favorable position for an emergency landing. If level flight is not possible, the tow plane should signal (and radio) the sailplane pilot to release.

7. Tow plane Engine Failure

In the event of a complete engine failure, the tow plane should immediately release the towline.

Part 5: Field Operation Officer (FOO) Guide

A. About FOOing

The FOO is in charge of the soaring operation and has full responsibility for running it safely and efficiently, consistent with flight regulations and MSC bylaws.

The role of the FOO is critical for a soaring operation to be safe and efficiently run, yet fun for all involved. To be a good FOO requires organizing ability, people skills, assertiveness, attentiveness and knowledge—knowledge about aviation in general, flight procedures at the airfield, sailplane handling, safety issues, and MSC practices for running a successful soaring operation.

B. Appointment

To be approved as a FOO, a member must be authorized by an MSC instructor or by the Director of Operations as having been checked out in all related procedures and practices, and having completed the SSA's Wing Runner course.

It is important that FOOs be aware of any updated procedures or practices.

The Director of Operations maintains a listing of FOO-qualified members, and oversees FOO assignments for scheduled soaring operations.

C. Obligation to Serve as FOO

It is the obligation of all members who are active pilots to become FOO-qualified and serve as FOOs. Student pilots may be qualified for FOO service at the discretion of the Director of Operations.

All FOO-qualified members are required to serve as FOO during the course of the soaring season. FOO-qualified members who choose not to serve in this role can lose flight privileges.

Prior to the start of each soaring season, members may sign up for FOO duty on dates they choose. The Director of Operations will determine the required number of signup dates based on the number of FOO-qualified members. The Director of Operations may schedule members for FOO service, as circumstances may warrant.

Tow pilots and flight instructors are not required to serve as FOOs.

D. FOO Procedures and Practices

See the Appendix for an abridged FOO checklist.

1. Preparing Yourself

Before you serve as FOO, please re-read Part 4 (Operations) and Part 5 (Field Operations Officer Guide) of this document. Your responsibilities as FOO are complex, and it is critical that you be prepared. A short checklist can be helpful, but does not adequately cover all circumstances.

2. Planning and Communicating

- Several days prior to the operation, the FOO should contact the scheduled instructor(s) and tow pilot, to ensure everyone is on the same page.

- The FOO should email the membership to announce the planned operation a couple of days prior. If forecasts indicate that the weather may be unsuitable for flying due to rain, low ceiling, high winds, etc., the FOO should advise the members about the prospect that the operation may be canceled, and ask them to stay tuned.

- Before canceling an operation due to weather, the FOO should consider first consulting with the tow pilot and instructors. FOOs are urged to wait until the morning of an operation before canceling—on many occasions the weather has turned out to be suitable for instruction on a day that has been canceled. If canceling, notify the entire club by email, and notify via Click 'n Glide all members who have signed up to fly, tow or instruct.

3. Consulting Airfield Management

- Before commencing operations, the FOO should consult airfield personnel (preferably the airfield manager) about the day's events, such as CAP operations, glider rides, power instruction or airfield mowing.

- The FOO should discuss with airfield personnel (preferably the airfield manager) which runway should be the initial active runway.

- The FOO should notify airfield personnel in advance about ad hoc weekday operations.

4. Preparing for the Operation

- The FOO, students and duty instructors should arrive at the hangar by 8 AM unless other arrangements have been made.

- Upon arrival at the field, the FOO should don the stylish day-glo vest so that students and other members can easily identify who is the FOO.

- The three club aircraft share a hangar with the golf carts and FOO cart. The FOO should supervise the students or other members present as they remove aircraft and other equipment from the hangar.

- Priority should be given to preflighting the two-place ships and getting them to the flight line so that instruction can commence promptly.

- Unless the afternoon operation is expected to be canceled, the Junior should be preflighted and brought to the staging area so that it will be readily available to members following instruction. However, the priority is to get instruction started as soon as possible, so the FOO must decide how and when to arrange for the Junior to be preflighted and brought to the staging area without delaying instruction.

- Note that seatback cushions of specified thickness are required equipment for the ASK 21 and ASK 21 B. Custom upholstered cushions which fit the seatbacks should be left in each glider.

- Any aircraft or club equipment that will not be used for the day's operation should be kept in the hangar. The hangar door should be closed before leaving.

- The tow pilot will generally remove the tow plane from its hangar without assistance, but the FOO should offer to help.

- The FOO is responsible for ensuring that preflight inspections and positive control checks have been completed before sailplanes are moved to the airfield. The FOO should also ensure that the golf carts have adequate fuel and oil.

- When moving aircraft to the airfield on a windy day, the FOO should ensure that the wing walker for each glider is on the upwind wingtip. Additional people may be assigned to walk the other wing or sit in the cockpit.

- If for any reason an aircraft not owned by the club has to be moved, the FOO must ask Stanton Sport Aviation (airfield management) for permission and/or assistance.

5. Staging

- Sailplanes should be staged on the south side of the runway approach end when using runway 9 or 27, and on the east side of the runway approach end when using runway 18 or 36.

- A "sterile zone" extending 100 yards forward from the launch position should be kept clear of other sailplanes, carts, people, etc., to minimize the risk of an accident during the early takeoff roll. The FOO should be especially attentive to spectators and children.

- Sailplanes left unattended on the field must be adequately secured. Whenever a sailplane is parked on the field it should be placed with the upwind wing on the ground and with the sailplane angled so that the wind blows over the ship from a rear quarter. In moderate or strong wind the lowered wing should be secured to the ground by an adequate weight. Tail dollies must be removed.

- After landing a club sailplane, the pilot is responsible for seeing that it is either secured properly or turned over to the next pilot assigned to fly it.

6. Preflight Briefing

Prior to first launch the FOO should conduct an operational and weather briefing for the assembled pilots and students. The FOO's name and mobile phone number should be written on the whiteboard on the FOO cart.

7. Coordinating the Operation

To run an efficient operation, the FOO must be aware of everything that is going on, and politely assertive to direct the activities of the pilots, ground crew and other members on the field. Situational awareness at all times is imperative.

A critical responsibility of the FOO is to regularly scan the airspace during operations, to minimize the risk of conflicts that could result in a midair collision.

FOOs should not be shy about asking any member to assume duties such as chasing the rope, readying or moving sailplanes, retrieving gliders or attending to the flight log sheet. Be ahead of the game and anticipate the situation's requirements.

a) FOO Handoff

When a FOO must leave the staging area for any reason (e.g., bathroom break), another qualified member should take over, and wear the day-glo vest so that everyone knows who the FOO is.

b) Launch Efficiency

The FOO should ensure that the next pilot to launch is in line, strapped in and ready, before the tow plane is back on the ground from the previous tow.

c) Wing Runners

The FOO is responsible for ensuring that wing runners and signalers (tow plane starters) are qualified. They must be familiar with the launch signals and procedures

followed by MSC at Stanton Airfield. Completion of the SSA Wing Runners course is strongly recommended. Several near-accidents have occurred because of the ignorance of well-meaning helpers.

d) Pilot Qualifications

The FOO is responsible for ensuring that members fly an MSC sailplane only as authorized. If in doubt, the FOO can request to see the member's qualification card.

The FOO is responsible for verifying that a member is qualified and approved to fly a club ship cross-country. See Part 4, Section D: Operations / Flying Preference / Cross-Country Flights in MSC Sailplanes.

e) Daily Flight Log

The FOO is responsible for logging all flights on the flight log sheet, noting the times of launch and landing, and entering the release altitude. The name of a passenger or instructor for the flight should be recorded, along with any applicable notes about the flight.

The FOO should also record the tail numbers of member-owned gliders. In the event that sailplane is overdue, the FOO can check online resources (flightaware.com, adsbexchange.com) for the flight path of a sailplane that is equipped with a transponder.

The flight logs are permanent club records, and should be treated accordingly. After the day's flying activities, the flight sheets should be placed in the designated location in the clubhouse. The FOO should photograph the flight log and send it via text or email to the club treasurer and/or the billing assistant.

f) Tow Ropes

It is the FOO's responsibility to ensure that the correct tow rope is used for launching club ships. Private ship owners are responsible for ensuring that the correct tow rope or pigtail is used to launch their ships. Pigtails with both Tost and Schweizer rings are kept in the FOO cart.

g) Flight Order and Priority

During scheduled weekend operations, flights in club sailplanes are limited to one hour when another pilot is waiting to fly that ship. The FOO can authorize longer flights. The FOO can request by radio that a pilot flying a club ship return to the field, so that another member can fly that sailplane. The FOO has broad discretion to give priority to flight reviews, first solos, badge or cross-country flights, and to deviate from the order of signups on the list.

h) Radio Communications

An air-band radio installed on the FOO cart, powered by the 12-V cart battery, should be tuned to the Stanton CTAF frequency, 122.8 MHz, and continuously monitored. A handheld aviation radio is also provided at the FOO cart. It should be tuned to 123.3 MHz and used to communicate with pilots aloft, who should address the FOO cart as "Stanton Glider Ground." Transmissions to pilots on the CTAF frequency should be limited to calls about flight operations or safety—for example, advising the pilot about traffic conflicts.

i) Suspending an Operation

The Field Operation Officer is responsible for halting a flying operation if the weather or other conditions are judged to be unfit for flying or likely to become so. Gusts that exceed or are predicted to exceed 25 mph would be justification for suspending the operation (*ref: Stephen Nesser's 1/8/23 email to the club)*.

The FOO may choose to shut down the operation if members are not showing up to fly on what appears to be a mediocre soaring day. However, the FOO should send an email at least 2 hours before shutting down, asking members to call if they are planning to fly that day. There have been several instances where members have arrived at the field only to find that the operation has been scrubbed.

j) Wrapping Up the Operation

Under the FOO's supervision, the pilot who makes the last flight of the day is responsible for returning that sailplane to its proper place in the hangar, cleaning bugs from the wings and tail, ensuring the airbrakes are released from detente, removing the battery and putting it on the charger, and replacing the canopy covers. Any trash at the staging area should be cleaned up. The FOO cart, golf carts and other club equipment should be stowed in the hangar after the sailplanes are in position. A weight should be placed on each sailplane's lowered wing.

k) Approval for Landing After the FOO Has Left the Field

If a club two-place sailplane is flown by two members, at least one of whom is FOO-qualified, then with the FOO's prior consent the members may land after the day's operation has ended, when the FOO is no longer present on the field. The FOO-qualified pilot is then responsible for safely returning the glider and all club equipment to the hangar.

l) Overdue Aircraft

If a sailplane is overdue, the FOO should attempt to reach the pilot by radio (122.8 MHz & 123.3 MHz) and by phone—members' mobile phone numbers are listed in the roster on the MSC website. The FOO can ask other pilots in the air to relay the radio

call. If the sailplane is equipped with a transponder (all club ships have transponders), then the FOO can check online resources (flightaware.com, adsbexchange.com) for the sailplane's flight path. If the pilot cannot be contacted, and if there is reason to suspect the pilot may have landed out, then the FOO should call the FAA Flight Service Station (1-800-WX-BRIEF, 1-800-992-7433), and then notify Stanton airport management and any MSC board member.

m) Sending a Recap

Members are eager to hear about the day's operation—what kind of a soaring day it was, how many flights were made, how long were the flights, who flew what, who completed a badge flight or cross-country goal, etc. The FOO is encouraged to email a recap of the operation to the club. Even better, include a photo or two.

Part 6: MSC Emergency Plan

A. Relationship with Stanton Airport Emergency Operations Plan

The *Stanton Airport Emergency Operations Plan*, developed in compliance with 14 CFR § 139.325 ("Airport emergency plan"), was formalized in 2017. This 21-page document is linked on the MSC website.

While the Stanton plan is essentially the letter of the law for emergency operations at or near Stanton Airfield, it does not adequately address how MSC members should respond in the event of an aircraft accident or incident at Stanton or elsewhere. Accordingly, the MSC Emergency Plan is intended to supplement the Stanton plan.

There are two notable, overriding provisions in the Stanton plan that are relevant to MSC:

- "The Airport is responsible for emergency response on the Airport."
- "Only the airport board of directors or the airport manager will release information or press release statements to the press regarding any incident that took place on the airport property."

B. MSC Emergency Response for an Accident or Serious Incident at Stanton Airfield

The following actions are listed in priority order, but several of the actions could be underway at the same time. For example, the FOO might be trying to reach the airport manager while another member is radioing pilots aloft. The first priority, however, is to call 911 in the event of a serious accident.

1. Call 911

In the event of an accident that may have caused injury, immediately call 911.

2. Render Aid

MSC members would naturally want to assist someone who is injured or is in danger. Minnesota's Good Samaritan Law is applicable: "A person at the scene of an emergency who knows that another person is exposed to or has suffered grave physical harm shall, to the extent that the person can do so without danger or peril to self or others, give reasonable assistance to the exposed person."

A fire extinguisher and first aid kit are kept at the FOO cart.

3. Notify Stanton Personnel

Stanton Airfield is responsible for emergency response, pursuant to the Stanton Airport Emergency Operations Plan.

The FOO (or someone designated by the FOO) should call airport manager John Quilling's mobile phone at 952-454-2859 as soon as possible when an accident or incident of any nature has occurred. Keep trying if there is no answer. The Stanton Airfield office should also be notified by calling 507-645-4030.

Stanton Airfield is responsible for contacting the FAA or the NTSB about any accident or incident occurring at or near the airfield—even if it involves club aircraft.

An MSC member should not contact the FAA or NTSB to report an accident at Stanton involving MSC aircraft unless cleared to do so by Stanton Airfield management. If so cleared, the FOO (or designee) should promptly report an accident by calling the NTSB's 24-hour Response Operations Center at 844-373-9922.

Stanton Airfield personnel can be expected to close the airport and update the AWOS recording with a closure notification.

4. Contact MSC Pilots Aloft

The FOO should radio any MSC pilots aloft on 122.8 MHz and/or 123.3 MHz to advise them about the emergency. Any member present can make the radio call, but it should primarily be the FOO's responsibility. An MSC pilot aloft could relay the information to any pilots who are out of range of Stanton.

Safety considerations would permit MSC pilots to land at the airfield, but of course they must avoid the accident site, typically by selecting an alternate runway. MSC pilots may choose to land at another airport if one is nearby.

5. Provide Appropriate Assistance

Although Stanton Airfield is responsible for emergency response, MSC members should assist when appropriate.

6. Stop the Operation

The day's soaring operation should be ended. Do not move MSC aircraft or equipment on the field until getting clearance to do so by Stanton Airfield management.

7. Notify MSC Club Leaders

In the event of an accident or incident involving club aircraft or a club member, the FOO (or someone designated by the FOO) should promptly call and/or text the club president, vice president and director of operations.

If a club member is injured, the club president (or designee) should call the member's emergency contact. If the member is hospitalized, a member or two can be dispatched to the hospital to provide moral support and to report back any updates about the member's status.

MSC leaders should be alerted about any accident at the field, but with much greater urgency when a club member is involved, especially if injured.

8. Report an Accident or Incident Involving MSC Aircraft

It bears repeating that no MSC member should contact the FAA or NTSB to report an accident or incident at Stanton involving MSC aircraft unless cleared to do so by Stanton Airfield management. If so cleared, the FOO (or designee) should promptly report an accident or serious incident by calling the NTSB's 24-hour Response Operations Center at 844-373-9922.

Accidents require immediate reporting. In brief, 49 CFR § 830.2 defines an *aircraft accident* as an occurrence in which a person suffers death or *serious injury* or in which the aircraft receives *substantial damage*. Refer to 49 CFR § 830.2 for detailed definitions of the italicized terms. An *incident* is defined as "an occurrence other than an *accident*, associated with the operation of an aircraft, which affects or could affect the safety of operations."

Not all aircraft incidents require immediate reporting. Refer to 49 CFR § 830.5, "Immediate notification". Damage to a sailplane caused by a hard landing might not call for immediate reporting, but even minor damage caused by a midair encounter would require immediate reporting. If in doubt about whether immediate reporting is required, promptly call the NTSB's Response Operations Center.

When reporting an event to the NTSB, be prepared to provide the aircraft type, aircraft N number, owner's name (Minnesota Soaring Club, for club ships), PIC's name, time of the event, location of the event, passenger names, injuries, nature of the event, weather conditions at the time, extent of damage. Refer to 49 CFR § 830.6, "Information to be given in notification".

9. What Not to Do

Do not disturb the scene of the accident or serious incident. In particular, do not attempt to move any involved aircraft, except to rescue someone. The aircraft cannot be legally moved until released by the NTSB and/or FAA. Do not provide any information to the press. Refer any media inquiries to Stanton Airfield management.

C. MSC Emergency Response for a Sailplane Accident or Serious Incident Away from Stanton Airfield

When it is learned that an MSC aircraft or member-owned sailplane has been involved in an off-field accident and that the pilot or a passenger might be injured, the first priority is to call 911.

If it is known with certainty that there is no injury or imminent danger of injury, there is no need to call 911. For example, if the sailplane pilot calls the FOO and says, "I'm fine, but my glider is trashed," there may be a need for an NTSB report, but no need to call 911.

The following actions are listed in priority order, but several of the actions could be underway at the same time.

1. Call 911

When it is learned that an MSC aircraft or member-owned sailplane has been involved in an off-field accident and that the pilot or passenger might be injured, the first priority is to call 911—even if it's uncertain that there are injuries, and even if the exact location of the site is unknown.

If the location of the site is unknown, 911 operators can initiate search efforts, including airborne searches by law enforcement aircraft and/or CAP aircraft.

2. Render Aid

If the location of the accident site is known, a team of 3-4 members should be dispatched to the site to render whatever assistance may be needed. If 911 has been notified, it is entirely likely that First Responders will reach the scene first.

If it appears likely that the NTSB will investigate the accident, the team must not try to retrieve the glider, but should allow law enforcement personnel on scene to secure the aircraft.

3. Establish Communications Command Post

A central command post should be established. The FOO or a designated responsible MSC member should coordinate all communications with the pilot (if possible), emergency personnel, MSC members on the scene, and MSC leaders.

The Stanton Airport Emergency Operation Plan does not apply to such off-field events, but Stanton Airfield management should be notified nonetheless, and asked for assistance as may be appropriate.

4. Notify MSC Club Leaders

The communications post commander should promptly call and/or text the club president, vice president and director of operations to report the accident.

If a club member is injured, the club president (or designee) should be the person who calls the member's family or emergency contact. If the member is hospitalized, a member or two can be dispatched to the hospital to provide moral support and to report back any updates about the member's status.

5. Report an Accident or Incident Involving MSC Aircraft or Member-owned Aircraft

If it is known that there has been an injury—or if the site of the accident remains unknown—the FOO or communications post commander should promptly report an accident by calling the NTSB's 24-hour Response Operations Center at 844-373-9922. An injury event should be immediately reported by MSC whether the sailplane is owned by MSC or by an MSC member.

An accident or serious incident involving a member-owned sailplane can be reported by the owner.

In any case, *accidents* require immediate reporting. In brief, 49 CFR § 830.2 defines an *aircraft accident* as an occurrence in which a person suffers death or *serious injury* or in which the aircraft receives *substantial damage*. Refer to 49 CFR § 830.2 for detailed definitions of the italicized terms. An *incident* is defined as "an occurrence other than an *accident*, associated with the operation of an aircraft, which affects or could affect the safety of operations."

Not all aircraft incidents require immediate reporting. Refer to 49 CFR § 830.5, "Immediate notification". Damage to a sailplane caused by a hard landing might not call for immediate reporting, but even minor damage caused by a midair encounter would require immediate reporting. If in doubt about whether immediate reporting is required, promptly call the NTSB's Response Operations Center.

When reporting an event to the NTSB, be prepared to provide the aircraft type, aircraft N number, owner's name (Minnesota Soaring Club, for club ships), PIC's name, time of the event, location of the event, passenger names, injuries, nature of the event, weather conditions at the time, extent of damage. Refer to 49 CFR § 830.6, "Information to be given in notification".

6. What Not to Do

Do not disturb the scene of the accident or serious incident. In particular, do not attempt to move any involved aircraft, except to rescue someone. The aircraft cannot be legally moved until released by the NTSB and/or FAA. Do not provide any information to the press. Refer any media inquiries to the club president, and tell the reporter that you cannot comment.

Part 7: Tow Pilot Guide

A. Introduction

This guide is intended to standardize the operational procedures of all MSC tow pilots. These guidelines should not be interpreted as a substitute for good judgment in an emergency situation. In no case should any MSC tow pilot feel induced to provide towing services under conditions that are perceived as being beyond their piloting skills or beyond the capabilities of the equipment. It should be emphasized that the priorities governing MSC operations are:

1. SAFETY
2. Care of the club equipment
3. Expeditious service

These priorities should be observed strictly in the order listed. The most important thing about towing is to plan ahead and be careful. It is better to quit towing and disappoint a few people than to wreck a tow plane in bad weather or high winds. If you feel the wind is too strong or the engine is running poorly (etc.), QUIT!

B. Tow Pilot Eligibility

Each year, before towing, potential tow pilots must present themselves to the Chief Tow Pilot and confirm that they are in compliance with FAA regulations, MSC regulations and insurance requirements. All tow pilots are MSC members (Associate or Active) and are enrolled by the MSC Treasurer as members of the Soaring Society of America (SSA), a requirement for coverage under the club's group insurance plan.

MSC tow pilots must complete the SSA tow pilot exam every year.

1. FAA Towing Requirements

The FAA regulation for tow pilots is FAR 61.69. This regulation must be read and understood by all tow pilots.

Tow pilots must hold a Private Pilot certificate (or higher) with an airplane single-engine land rating; have a tailwheel endorsement, or have logged tailwheel flight time as per 14 CFR Part 61.31(i); meet the requirements of 14 CFR Part 61.31(f) for piloting high-performance aircraft; have a current Basic Med or third-class medical certificate (or higher); and possess a current Flight Review as per Part 61.56.

Per CFR 61.69, the tow pilot the preceding 12 months must have performed three actual or simulated tows accompanied by a qualified pilot, or have been towed for three flights in a glider or unpowered ultralight vehicle.

2. Tow Pilot Experience Requirements

Normal minimum experience requirements are a combination of insurance policy restrictions (if any) and the discretion of the Director of Operations and Chief Tow Pilot. The present guidelines for experience are listed below:

- 200 hours power PIC flight time
- 25 hours in tailwheel aircraft
- 10 takeoffs and landings in the same make and model tow plane
- 10 previous tows in any aircraft

Stanton Sport Aviation offers tailwheel and tow endorsement training.

3. Check Out

When an MSC member who meets the above requirements wishes to become a tow pilot for the club, the Chief Tow Pilot has the discretion to authorize the member to be an MSC tow pilot, documented by signing the MSC member qualification card. An entry must also be made in the pilot's log book.

C. Tow Procedure

1. Takeoff and Tow

On takeoff, allow the tow plane to drift downwind off the center line, allowing for an easier glider return after a simulated or actual rope break.

Tow the glider upwind from the airport unless the glider pilot requests otherwise, and limit the distance so that the glider could return to the airport after a rope break or ill-considered release. Do not fly back over the airport below 1500' AGL (2500' MSL) unless setting up to land. Position yourself on tow for an easy return to the airport after the glider releases, to save time and fuel.

2. Tow Patterns

Flight patterns should be modified depending on the winds aloft. The objective should be to keep the sailplane within gliding reach of the field at all times, generally by towing the sailplane upwind. Refer to Figure 3, *Typical Pattern Tow* in Part 4 (E)(3).

3. Airspeed, Turns and Such

Maintain proper tow speed by attitude. Find the attitude that maintains the proper airspeed for that sailplane and hold it. Don't chase airspeed. Small variations in airspeed can be tolerated if you start with the proper speed. Slow, smooth pitch changes should be made if the speed starts to diverge too greatly from the optimum.

Avoid abrupt maneuvers on tow. All turns should be entered smoothly and with a maximum of 20 degrees of bank angle. *Do not thermal*. After passing through a thermal, make a large circle and pass through it again, but do not try to thermal in it on tow.

Sailplane pilots who intend to box the wake should signal their intentions to the tow pilot by moving down through the wake into low tow position before beginning to box the wake. If the sailplane pilot wishes to steer the tow plane, standard SSA signals will apply. Unless safety dictates otherwise, the tow pilot will make every effort to comply with the glider pilot's steering directions.

4. Glider Release

After positive glider release, bank left, reduce power (>2200 rpm), and lower the nose. Keep airspeed in the green arc. Keep track of the glider visually or on the Garmin display. Position yourself for pattern entry, and announce your intentions 2 miles from airport. Watch for traffic visually and on the Garmin display.

5. Landing

Remember you have a 200-foot tow line behind you.

Use a landing pattern appropriate for the wind and traffic conditions. Visually watch for traffic, and monitor 122.8 MHz—not all traffic will display on the Garmin. Be courteous to other traffic even if they are flying five-mile finals.

Announce entering pattern and base, and make more calls if necessary for safety. Final approach: rpm as required, full flaps. Clear obstacles by 150 feet for the rope. **Remember you have a 200-foot tow line behind you.**

Speed should be 70 mph on final, 60 mph for normal landings. Carry some power on approach to landing, as this Pawnee will sink without power. Throttle idle at touchdown. After landing, hold stick back and don’t use brakes unless required. After clearing the runway: flaps up, mixture lean.

6. Wind Considerations & Concerns

The biggest danger to the tow plane occurs on windy days. Operate from the runway that provides the maximum safety for the tow plane. Don't hesitate to change runways if the

wind changes. Work with the FOO to determine the safest runway. If there is a disagreement, remember that you are responsible for the operation of the tow plane.

NEVER do anything if you are in doubt about the outcome. Be very conservative about operating in strong, gusty winds. Every pilot has to set their own limits as to how much wind they can SAFELY handle. If you are less experienced, or if you're an old hand just having one of those days when nothing goes right, shut down the operation before the tow plane gets bent— not after it gets bent.

Be very careful on downwind taxis. All turns should be made with a minimum amount of power and braking. Avoid locked brake turns. All power changes should be executed slowly and smoothly.

7. Glider Retrieves

The MSC tow plane may retrieve a glider that has landed at an airport. Verify that adequate fuel is available to make the flight; assume 15 gph fuel burn in cruise. Use the Pawnee hopper to stow the tow rope, the glider's tail dolly and any other retrieval gear.

Glider pilots who are retrieved from an airport are charged for tach time at a rate determined by the MSC Board. Report the total tach time for the retrieve to the FOO, so the daily flight log can be updated.

Club policy does not permit retrieving a glider that has landed in a field.

8. At the End of the Day

At the end of the day, coil up the tow line and place it in the hopper. Fill the Pawnee fuel tank, and report the fuel amount to the FBO. Fill out the Pawnee log. Clean bugs off the leading edges and windshield.

When putting the Pawnee in the hangar, do not allow anyone to push on the Pawnee propeller, propeller spinner or the wing leading edge. *Push only on the wing struts.*

Verify that all cockpit switches are turned off, and close the cockpit windows. Remove all trash; use the garbage bags provided.

Appendix

A. MSC History

The Minnesota Soaring Club was formed in the fall of 1959. The twenty-four men, led by the first president Charles Whitmore, labored for nearly a year to rejuvenate an old WW-II glider. The Schweizer TG-2 required about 3000 man-hours of labor before the first club flight was made September 2, 1960. The sailplane was initially tested with four auto tows. Then two aero tows for 95 minutes of flight time completed the FAA inspection.

MSC flight operations have always been located at Stanton Airport (formerly Carleton Airport), Stanton, Minnesota. The operation originally prospered, in part, due to the cooperation of the airport owners, Malcomb and Margaret Manual. In 1990 members of MSC and other pilots purchased the airport. Stanton Sport Aviation is committed to preserving Stanton Airport as a sport flying field. MSC flight operations continue to prosper thanks to the dedication and hard work of the members of Stanton Sport Aviation.

Although all of the original members were power pilots, the Club established an instructional program so that anyone could participate. The countless hours volunteered by the early instructors - Whitmore, Wastvedt, Holler, Edwards, Bringentoff - enhanced the Club development. Within ten years, MSC attained operational and financial stability enjoyed by few soaring clubs.

Original members of the Minnesota Soaring Club:

Rusty Bringentoff	Russ Christenson	Robert Clark	Robert Crane
Roy Dale	William Dean	John Edwards	George Ellison
Howard Glaefke	Frank Hetznecker	Harris Holler	Jack Horner
Wells Horvereid	Ken Kneen	Ed O'Conner	Lachlan Ohman
Douglas Olson	Harry Meline	Ken Perkins	George Shallbetter
Ell Torrance	Don Ullevig	John Wastvedt	Chuck Whitmore

B. MSC Aircraft History

1959-64	Schweizer TG-2	2-place	Used	Chicago
1961-64	Schweizer 1-26	Single	Used	Dallas
1964-71	Schweizer 1-26	Single	Used	Minneapolis
1964	Schleicher Ka-7	2-place	New	Germany
1968-84	Schleicher ASK 13	2-place	New	Germany
1971	Schleicher Ka-8b	Single	Used	Tulsa
1974-83	Schreder HP-13	Single	Used	Dallas
1976-84	Piper PA-18 Super Cub	Tow plane	Used	Stanton
1978-83	Grob Astir	Single	Used	Texas
1983	Piper PA-18 Super Cub	Tow plane	Used	Stanton
1983	Schleicher ASK 21	2-place	New	Germany
1989-91	Schweizer 1-26	Single	Used	Minneapolis
1992-96	Schweizer 1-23	Single	Used	Maple Lake
1992	PZL SZD-50-3 Puchacz	2-place	New	Poland
1998	PZL SZD-51-1 Junior	Single	Used	Edina
2021	Piper PA-25 Pawnee	Tow plane	Used	Chilton AL
2022	SZD-50-3 Puchacz SOLD	-----	-----	Wellington CO
2022	Schleicher ASK 21 B	2-place	New	Germany
2023	Piper PA-18 SOLD	-----	-----	Clayton NC

C. FOO Checklist

This simplified checklist does not cover all aspects of the FOO's responsibilities. Before serving as FOO, please re-read Part 4 (Operations) and Part 5 (Field Operations Officer Guide) of the MSC Operations Guide*, available at the MSC website.*

3-4 Days Prior to the Operation

✓ Check the weather forecast.

✓ Check signups by students on Click 'n Glide.

✓ Confirm that the instructor(s) and tow pilot(s) plan to be there.

Evening Prior to the Operation

✓ Check the weather forecast.

✓ If the forecast is poor, confer with the instructor and tow pilot.

✓ Unless all are certain about poor weather, wait until morning to cancel an operation.

✓ Check signups by students on Click 'n Glide again.

✓ Email the club that the operation is a go (unless canceling), and advise about questionable weather.

Morning of the Operation

✓ Check the weather and the forecast before leaving for the field.

✓ Check for any applicable NOTAMs.

✓ If the weather/forecast is poor, confer with the instructor and tow pilot.

✓ If canceling the operation, email the club and update Click 'n Glide.

✓ Arrive at the field by 8:00 AM.

✓ Put on the stylish day-glo vest.

✓ Offer to help the tow pilot move the tow plane out of the hangar.

✓ Ensure that gliders are pre-flighted properly, including positive control checks.

✓ Ensure that golf cart oil and fuel levels are checked.

✓ Supervise moving the gliders and carts out of the hangar.

✓ The Junior should always be brought to the staging area by noon, but without delaying instruction.

✓ Before heading to the staging area, talk with airport management about which runway should be active.

✓ Conduct an operational and weather briefing.

At the Staging Area

✓ Try to be ready for first launch by 9 AM.

✓ Position the FOO cart a safe distance from the runway.

✓ Maintain a sterile zone extending 100 yards forward from the launch position.

✓ Secure unattended sailplanes properly.

✓ Write your name and mobile phone number on the FOO cart whiteboard.

✓ If not already done, conduct an operational and weather briefing.

✓ Set up radios to monitor both 122.8 MHz and 123.3 MHz.

✓ Continuously monitor traffic in the pattern.

✓ Ensure that wing runners and retrievers are qualified.

✓ Log takeoff/landing times and release altitudes.

✓ Manage the operation!

✓ Be proactive to make the operation safe. Don't hesitate to speak up.

✓ When conditions warrant, change active runways. Advise airport management.

✓ If weather conditions require canceling the operation, email the club and update Click 'n Glide.

✓ If no one is showing up to fly, email the club at least 2 hours before shutting down the operation.

Wrapping Up the Operation

✓ Carefully return the gliders and carts to the hangar.

✓ Clean bugs and dirt from the gliders & tow plane.

✓ Remove batteries and put them on charge.

✓ Replace canopy covers.

✓ Put a weight on each glider's lowered wing.

✓ Make sure cart keys are in the off position.

✓ When all is shipshape, close the hangar doors.

✓ Stash the flight log in Clubhouse East.

✓ Photograph or scan the flight log and email it to vjchouinard@gmail.com.

✓ Send a recap of the operation to the club.

In Case of an Emergency

✳ Do not hesitate to call 911 or render aid when circumstances warrant.

✓ Refer to the **MSC Emergency Plan** (Part 6 of the MSC Operations Guide). A printed copy should be in a FOO Cart drawer, but you can also read it at the MSC website (mnsoaringclub.com) in the Library / Clubmember Documents folder.

✓ The **Stanton Airport Emergency Operations Plan** (also available at mnsoaringclub.com) takes precedence, but does not adequately address how MSC members should respond in the event of an aircraft accident or incident at Stanton or elsewhere.

In Case of Overdue Aircraft

✓ Verify that the aircraft hasn't already landed and been put away.

✓ Try to reach the pilot by radio, on both 122.8 MHz and 123.3 MHz.

✓ Call the pilot's mobile phone number. (All member phone numbers are listed in the roster at the club website, mnsoaringclub.com, in the Library / Clubmember Documents folder.)

✓ Ask other pilots aloft to try to reach the pilot by radio.

✓ If the overdue glider is transponder-equipped (club ships are), check online resources like flightaware.com and adsbexchange.com.

✓ If the pilot cannot be contacted, and if there is reason to suspect the pilot may have landed out: call the FAA Flight Service Station (800-992-7433), notify Stanton airport management, and notify any MSC board member.

In Case of a Landout

✓ If a club ship lands out, assemble a retrieve crew of at least 3 people, and coordinate retrieval with the club ship pilot.

✓ If a member-owned glider lands out, the pilot should already have made arrangements for retrieval—but if not, provide any assistance that may be needed.

✓ Members who land out in a club ship must submit a written report to the Director of Operations.