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Chapter 1

ARTICLES OF INCORPORATION

ARTICLE I.

SECTION 1. The corporation name shall be Minnesota Soaring Club.

SECTION 2. The purpose of this club is to encourage interest in aviation, To provide safe, economical flying and flight training in the art of soaring and flying; To own and/or lease, construct and/or buy and maintain sailplanes and other aircraft and equipment used in connection with soaring; To advance the knowledge of members in aeronautical and meteorological subjects; To conduct and participate in flying exhibitions; To advance the arts and sciences of soaring; To hold meetings for the purpose of discussing and acting upon corporation business and interchanging ideas relating to the art of soaring.

SECTION 3. Plan of Operation: The members shall contribute such sums to the corporation in the form of initiation fees, other fees or dues, for the use, operation and maintenance of the corporation property as the Board of Directors may determine as hereinafter set forth. The corporation shall have the power to bargain for, buy, lease, or sell such real or personal property and supply such facilities, installations, services, supplies and equipment as may be necessary or convenient to further the purposes of the corporation.

SECTION 4. The principal place for transacting the business of the corporation shall be Stanton Airport, Stanton, Minnesota.

ARTICLE II.

The period of corporate duration of the corporate existence of this corporation shall commence on the approval of these articles by the Secretary of State and shall be perpetual thereafter.

ARTICLE III. Incorporators:

Charles Whitmore III, 2517 West 66th St., Minneapolis, Minnesota
Wells J. Horvereid, 13811 Knollway Drive, Minneapolis, Minnesota
George P. Ellison, 4907 W. Old Shakopee Rd., Minneapolis, Minnesota

ARTICLE IV.

The management of this corporation shall be vested in the Board of Directors composed of not less than three members.

ARTICLE V.

SECTION 1. Any person desirous of furthering the purposes of this corporation and participating in its programs may become a member upon approval by the Board of Directors and the payment of an initiation fee.

SECTION 2. No member shall be personally liable for corporate obligation to an extent greater than the total sum of his membership contribution paid into the corporation.

SECTION 3. This corporation shall have no capital stock and shall not be conducted for pecuniary profit.

Chapter 2**MINNESOTA SOARING CLUB HISTORY****FORMATION**

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.

SITE

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.

EARLY YEARS

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

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

MSC MAJOR EQUIPMENT HISTORY

1959-64	Schweizer	TG-2	Two-Place	Used	Chicago
1961-64	Schweizer	1-26	Single	Used	Dallas
1964-71	Schweizer	1-26	Single	Used	Minneapolis
1964	Schleicher	Ka7	Two-Place	New	Germany
1968-84	Schleicher	ASK13	Two-Place	New	Germany
1971	Schleicher	Ka8b	Single	Used	Tulsa
1974-83	Schreder	HP13	Single	Used	Dallas
1976-84	Piper	PA-18	Towplane	Used	Stanton
1978-83	Grob	Astir	Single	Used	Texas
1983	Piper	PA-18	Towplane	Used	Stanton
1983	Schleicher	ASK21	Two-Place	New	Germany
1989-91	Schweizer	1-26	Single	Used	Minneapolis
1992-96	Schweizer	1-23	Single	Used	Maple Lake
1992	SZD	Owl	Two-place	New	Poland
1998	SZD	Junior	Single	Used	Edina

Chapter 3

By-Laws

I. MEMBERSHIP CLASSES, RIGHTS, OBLIGATIONS

A. CLASSES AND LIMITS

There shall be six classes of membership with maximums for each class as follows:

- Active Member ----- Unlimited
- Inactive Member ----- Unlimited
- Family Member ----- Unlimited
- Associate Member ----- Fifteen
- Honorary Member ----- Five
- FAST Member ----- Five

B. QUALIFICATIONS

1. GENERAL QUALIFICATIONS:

Membership in the club shall be restricted to those people interested in aviation and the purposes of the club. They shall also meet current FAA regulations regarding glider pilot qualifications.

2. SPECIAL QUALIFICATIONS:

- a. INACTIVE MEMBER: Any paid up member may go on inactive status if he has been an Active member in good standing for at least two years. While on Inactive status the member's share fee shall remain with the club. See Chapter 3 Section I.E.2.a.
- b. FAMILY MEMBER: Family membership is available to persons of the immediate family of an Active member. Except for a husband or wife, such must be less than 23 years old and their Family membership will terminate at age 23. Each Active member is responsible for the financial obligations of their Family member(s). All Family memberships end with the termination/conversion of the responsible Active member.
- c. ASSOCIATE MEMBER: Associate members shall not be required to meet FAA regulations regarding glider pilot qualifications.
- d. HONORARY MEMBER: Honorary membership, by special resolution of the Board, may be conferred upon an individual provided the voting membership concurs with a two-thirds vote.
- e. FAST MEMBER: FAST membership may be granted to a person who is in possession of a valid Soaring Society of America FAST certificate certifying that the individual is a member of the Soaring Society of America and entitled to receive the benefits of FAST membership. A FAST membership is valid for 30 days beginning with acceptance of the FAST membership by the board. The Board may remove from these bylaws the FAST MEMBER class by a two-thirds (2/3) vote of the Board.

C. RIGHTS AND PRIVILEGES**1. GENERAL:**

Each member shall share equally the rights and obligations of their particular membership class.

2. SPECIFIC MEMBERSHIP RIGHTS AND PRIVILEGES:

- a. **ACTIVE MEMBER:** Active membership is granted to those who have paid 1/3, 2/3, or the full share fee. The Active member be entitled to participate in all Club activities, has full voting privileges, has full SSA membership paid for by the club, partially refundable equity, receives all Club mailings, and is the only class of member eligible for elective office.
- b. **INACTIVE MEMBER:** An Inactive member has the same rights and privileges of an Active member except the right to hold office and normal flying privileges. Limited flying privileges are extended for two days per year and are accumulative to a maximum of six days. The Inactive member shall pay regular Club fees for such flights.
- c. **1/3 & 2/3 SHARE MEMBERS:** Fractional share members have the same rights and privileges as full-share members except that they may not appoint Family members.
- d. **FAMILY MEMBER:** A Family member shall have the rights, privileges and obligations of an Active member except they may not vote or hold an elective office, shall not hold equity in the property of the club nor be entitled to any refund of membership fees. The total family [Active member plus Family member(s)] shall have priority for use of Club equipment equal to one membership. This membership includes SSA family membership paid for by the Club.
- e. **HONORARY MEMBER:** Honorary members have no flight privileges, and do not have the right to vote, hold office or share in the Club property. Upon the recommendation of the Operations Director, such honorary members may be permitted to fly the Club aircraft, provided all checkout procedures are followed and the normal assessment for flying such equipment is made.
- f. **ASSOCIATE MEMBER:** An Associate member may attend general meetings, social affairs and flying sessions. Members of this class have no glider flight privileges, cannot vote nor hold office nor hold any equity in the Club property. Members of this class are required to have a current SSA membership before they use any MSC equipment.
- g. **FAST MEMBER:** FAST members do not have the right to vote, hold office or hold any equity in the Club property. Under the direction of the Operations Director, such FAST members are entitled to receive the services outlined in the Soaring Society of America FAST Certificate.

D. DUTIES OF THE MEMBERS

The duties of the members shall be to attend meetings, to conduct themselves in a proper and fitting manner, to uphold the dignity of the Club at meetings and on the flying field, to be alert and mindful of the Club's interest; to exercise due caution and safety in flying; and to observe all state, local, Club and government flying rules and regulations.

E. APPLICATION

1. **GENERAL:** Application for membership shall be in writing, stating name and residence of the applicant, and signed by the applicant. All applications must be filed with the secretary.

New members shall be accepted on a probationary status for a period of 12 months. During this probationary period, the Board of Directors may reject the application. Should the Directors reject any new member during the probationary period, his membership fee shall be refunded in full. Other financial obligations are settled as specified in Section I.J.

2. **SPECIAL:**

- a. **INACTIVE MEMBER:**

- i. **APPLICATION FOR INACTIVE MEMBERSHIP:**

Application for transfer from Active to Inactive status shall be made by written request to the Club Secretary or Club Treasurer and this request shall be reviewed by the Board of Directors within thirty days for decision and reply, with Inactive status to become effective thirty days after application. The applicant shall not be delinquent in his Club payments.

- ii. **APPLICATION FOR ACTIVE MEMBERSHIP BY INACTIVE MEMBER:**

Conversion from Inactive to Active membership shall be by written request to the secretary and the request shall be reviewed by the Board of Directors within 30 days. If the request is approved, it shall become effective within 30 days after application. If the member seeking conversion to Active status has been Inactive less than 18 months, then this member must pay to the Club the difference between Active and Inactive dues for the period of Inactive status.

- b. **Conversion of 1/3 & 2/3 SHARE MEMBERS:**

A fractional-share member can increase his or her share value by paying an additional fraction of the current club share fee. In order to so upgrade the membership, the member must have no outstanding indebtedness to the Club.

- i. A 1/3-share member may pay an additional 1/3 share fee to convert to a 2/3-share membership, or 2/3 to convert to a full-share membership.
 - ii. A 2/3-share member may pay an additional 1/3-share fee to convert to a full-share membership.

- c. FAST MEMBER:
- i. APPLICATION FOR FAST MEMBERSHIP:
- FAST membership may be granted by at least two members of the Board of Directors upon notification, the surrender of the FAST certificate, and meeting such requirements as may be prescribed by the Board of Directors including the signing of a waiver in the form prescribed by the Board of Directors.
- d. Conversion of FAST MEMBERS:
- A FAST member may convert his or her FAST membership to an Active membership by paying the difference between the FAST certificate value as defined by the Board of Director in Table 4 and the current club share fee. In order to upgrade the membership, fulfill the requirements listed in section I.E.1.
- e. FAST MEMBER:
- There shall be no share fee for FAST members.

F. MEMBERSHIP FEES AND DUES

All fees and dues shall be charged as set forth by the Board of Directors. Current fees and dues shall be tabulated in Chapter 4 following adoption, and revised schedules shall be mailed to the membership on adoption, and the dues and fees as set forth therein shall be of force and effect as though set forth in these By-Laws.

1. MEMBERSHIP FEES

- a. ACTIVE MEMBER: The Active membership share fee will be determined by the total net worth of the Club divided by the arithmetic sum of:
- The number of full-share members,
 - Two-thirds (2/3) of the number of 2/3-share members,
 - One-third (1/3) of the number of 1/3-share members.
- The net worth of the Club will be determined by a committee appointed by the President and shall consist of the Treasurer and two members not holding elective office. The net worth is to be determined before March 1 of each year.
- b. INACTIVE MEMBER: The share fee equals the Active share fee.
- c. FAMILY MEMBER: The non-refundable membership fee per family member is established by the By-Laws.
- d. HONORARY - ASSOCIATE MEMBER: There shall be no share fee for honorary members or for Associate members.
- e. TRANSFER: Membership fees are not transferable except as defined in paragraph I.K.

2. MEMBERSHIP DUES

- a. ACTIVE, INACTIVE, FAMILY: Membership dues are established by the Board of Directors and shall be published in Chapter 4 hereof and become of force and effect as though a part of these By-Laws.
- b. HONORARY: Honorary members shall pay no dues.
- c. ASSOCIATE: Membership dues are established by the Board of Directors.
- d. FRACTIONAL SHARE MEMBERSHIP DUES: 2/3-share Active membership dues must be proportionately higher than full-share Active member dues. These dues are established by the Board of Directors.
- e. FAST MEMBER: FAST members shall pay dues as established by the Board of Directors and as listed in Table 4.

G. DAMAGES

1. Any member shall be liable to the Club for damages suffered by the Club resulting from his own carelessness or negligence and which damages are not covered by Club insurance. Violation of Federal Aviation Agency regulations, Club rules, or local field rules shall be presumptive evidence of negligence.
2. In case of doubt of liability, a meeting shall be called by the Board to decide on the case in question.
3. Any damage assessments shall be payable by each and every member so assessed before he shall be allowed to make any further use of the Club's equipment, and the period of time to pay this assessment shall be determined by the board.

H. INDEBTEDNESS

1. Members are automatically ineligible to fly the Club equipment if any dues, flight charges, or assessments are over \$200.00 for thirty days in arrears as per Club billings. The Treasurer must notify all elected officers and the Director of Operations of ineligible members.
2. Any member whose dues, flight charges or assessments are six months in arrears shall be automatically expelled. Any member may petition to the Board to waive this section, and the Board shall have the authority to extend, dismiss or inflict this section at their discretion.

I. RESIGNATION, SUSPENSION, EXPULSION, DISCIPLINE

1. **RESIGNATION:** To resign, a member must present a written request to the Board. Resignation shall not take effect until at least thirty days after written request is presented to the board.
2. **DISCIPLINE:** If the conduct of any member shall appear to be in willful violation of the Code of Flying Regulations, By-Laws or other rules and regulations of the Club or prejudicial to the Club's interest, or if any member shall be in default for the payment of his dues or any other indebtedness to the Club, the Board of Directors may, by the affirmative action of the entire Board, suspend or expel such member. Before taking such action, a written copy of the charges must be served upon the member and the member given an opportunity to be heard before the Board of Directors in defense. A motion to reconsider the suspension or expulsion of a member may be made at the next regular meeting of the Directors, or at a special meeting called for this purpose, but not thereafter. The Board has the authority to investigate accidents and suspend member(s) of the Club for violation of good flying practices and the authority to expel said member(s) for unsafe operation of the Club equipment. Dues shall continue during the suspension period, and the member shall be reinstated automatically at the end of the suspension period.

In the event the Board of Directors do not vote unanimously for or against such action a quorum of Active members at any meeting at which a voting quorum is present may, by majority vote, suspend or expel a member for violation of FAA regulations, local field rules or for default in financial obligations to the Club.

3. **TEMPORARY SUSPENSION:** The Director of Operations may suspend any member and thereby temporarily deny such member all flying privileges of the Club. The temporary suspension may be made for a prescribed duration at the next meeting of the Board or of the general membership. If no action is taken by the Board or general membership, the temporary suspension shall expire.

J. TERMINATION

A membership may be terminated due to resignation, expulsion, or by rejection of an applicant during the probationary period. An Active or Inactive member will receive partial refund of the current Active share fee for their membership class: full, 1/3-share, or 2/3-share. A rejected applicant shall receive a full refund of the share fee actually paid. Any debt of a terminating member whether for dues, usage, or damages shall become due at the time of termination. If the terminating member has the right to a refund any obligation will be deducted. If the obligation is greater than the refund the difference is to be paid within 60 days of the termination date, or claim for monies due will be entered and processed through the proper court of law.

K. DECEASED

If an MSC member dies, his or her membership will be terminated just as though they had written a letter of resignation to the Board. However, if the family of the deceased requests that the membership be transferred to another member of the family, the Board of Directors has the authority to approve/reject such a request provided the membership has no outstanding indebtedness to the Club.

II. ORGANIZATIONAL PROVISIONS

A. MEMBERSHIP AND BOARD MEETINGS: Notice, Agenda, Quorum, Rules

1. The quorum for membership meetings, at which any voting is conducted, shall be at least a majority of the Active members, either present or by written proxy, including at least one Club officer. The quorum for membership meetings conducting nonvoting business shall be at least 20% of the Active members, including at least one Club officer.
2. The quorum for all Board meetings shall be at least a majority of the Board.
3. Upon written request of at least fifty percent of the Active membership, a special meeting shall be called. All members shall receive at least 5 days notice as to the time, place and subject matter of the special meeting, and that subject matter shall be the first item on the agenda.
4. Board meetings shall be held at the discretion of the Board or may be called at the discretion of the chairman of the Board. The Board shall meet at least once annually and no later than one month before the end of the fiscal year.
5. Unless otherwise ordered by a majority vote of the Active members present, or in the case of the Board of Directors by a majority vote of the Board, the order of business at all regular and special meetings shall be as follows:
 - a. Roll call and call to order by presiding officer
 - b. Reading of minutes from last meeting
 - c. Reports and statements of officers and committees
 - d. Unfinished business
 - e. New or miscellaneous business
 - f. Adjournment
6. Roberts Rules of Order Revised shall be the parliamentary authority on all matters not covered by these By-Laws.

B. VOTING

1. Active and Inactive members shall be allowed to vote on any matter requiring a vote of the general membership. Full-share members will be entitled to one vote and fractional share owners will be entitled to a fractional vote corresponding to the fraction of a full share they own either in person, by written ballot, or by proxy.
2. To be eligible to vote the member shall not have any charges or assessments of more than \$200.00 for more than thirty days previously to such voting. Treasurer shall supply a list of eligible voters to the Officers before any vote is taken.
3. When practical, polling of the membership shall be conducted by the Secretary or a person appointed by the board who will mail a ballot to each eligible member at least seven days prior to a voting meeting. The member may return the ballot by mail or bring it to the meeting.

4. It shall require a two-thirds (2/3) vote of the Board members present to effect passage of any resolution except when otherwise provided for by the By-Laws or Code of Regulations.
5. All Board matters shall require a majority of the Board members present to be passed.

C. OFFICERS AND BOARD OF DIRECTORS

1. The Officers of the Club shall be a President, Vice-President, Secretary and Treasurer. Immediately after taking office said officers shall, by a majority vote, appoint a Director of Operations and a Director of Equipment.
2. The Board of Directors shall consist of the President, Vice-President, Secretary, Treasurer and appointed directors.
3. The Board of Directors shall have full authority to act in any or all matters concerning the Club excepting those specified otherwise in the By-Laws. Obligations of the Club must be presented to and approved by the Board.
4. A seventy-five percent majority of the Active membership shall be required to impeach an Officer and/or member of the Board. A chairman, AD HOC, who shall not be a Club officer or director, shall be elected by the membership in attendance and shall preside.
5. In the event of a vacancy, the remaining members of the Board shall appoint a temporary officer to serve until the next regular meeting at which time a special election shall be held to fill the vacancy. The candidates shall be nominated from the floor. If a permanent officer is not elected within sixty days after the vacancy occurs, the temporary officer shall serve the remainder of the unexpired term.

D. QUALIFICATIONS AND DUTIES OF THE OFFICERS

1. **PRESIDENT:** An Active member to be elected annually. Duties:
 - a. Presiding officer at all meetings of the Club.
 - b. To appoint committee chairman.
 - c. Sign all acts or orders necessary to carry out the business of the Club.
 - d. Act as representative of the Club to outside persons and other organizations.
 - e. Chairman of the Board of Directors.
2. **VICE-PRESIDENT:** An Active member to be elected annually. Duties:
 - a. Presiding officer in the absence of the President.
 - b. To assume the duties of the President in case of illness, death, resignation or removal from office of the President.
3. **SECRETARY:** An Active member to be elected annually. Duties:
 - a. To record the minutes of all special and regular meetings of the Club.
 - b. To record the minutes of all meetings of the Board of Directors.
 - c. To call a meeting to order in the absence of the presiding officers.

- d. To preserve all records, reports and documents of the Club except those specifically assigned to the custody of others.
 - e. To carry on the official correspondence of the Club and send notices of meetings to members. This activity may be delegated to a person appointed by the board or the secretary.
 - f. Issue and attest all certificates of membership and keep a membership book containing the name and address of each member and the date of admission to membership.
 - g. Give all notices required by law or by the Code of Regulations or these By-Laws.
4. TREASURER: An Active member to be elected annually. Duties:
- a. To receive, receipt for, disburse, record and be custodian of all funds connected with the business of the Club.
 - b. Provide financial reports.
 - c. Keep an accurate account of the finances of the Club on the books of the Club prepared and furnished for that purpose, and all books shall be open for inspection and examination by the officers or any committee of the members appointed for that purpose.
 - d. At the expiration of the term of office, he shall deliver all books, papers and property of the Club in his hands, together with all monies and rights of the Club, to his successor in office or to the President.
5. DIRECTOR OF OPERATIONS: An Active member appointed annually by the new officers. The Operations Director must hold a glider commercial rating.
- Duties:
- a. To plan and schedule and keep an accurate record of all flying time.
 - b. To ground any or all aircraft for the safety of members because of weather or other hazardous conditions.
 - c. To make a report of flying activities to the Board at each meeting as to violations of rules and other operational matters.
 - d. To require a check ride at any time he feels a member is not proficient enough in flying skills, and may temporarily suspend a member for violations of rules and regulations. Such temporary suspension can only be lifted at the next regular or special meeting of the Board of Directors.
 - e. To serve on the Board of Directors.

6. DIRECTOR OF EQUIPMENT: An Active member appointed annually by the new officers. Duties:
 - a. To inspect and maintain all Club equipment and report on the status of such equipment.
 - b. To keep records necessary for proper accounting of operation of the equipment in close cooperation with the Treasurer.
 - c. To perform such work that he is able to do within FAA regulations and his own ability.
 - d. To ground any aircraft at his own discretion for the benefit of the Club from a viewpoint of safe operation.
 - e. To serve on the Board of Directors.

E. NOMINATION AND ELECTION OF OFFICERS

The President shall designate in August a nominations committee of three to present recommendations to the membership at the September meeting. Nominations will be made at the September meeting directly from the floor by Active members of the Club then present. If there are no contested positions the nominated officers shall be elected by acclamation. If any position is contested an election of all such officers will take place at the first regular meeting in October. Only Active members may be nominated and the election shall be by secret ballot. Officers elected shall take charge and be installed at the first regular meeting in January. All officers shall hold office for one year.

F. FISCAL YEAR

The fiscal year shall extend from January 1 through December 31.

G. FINANCE

1. OPERATING EXPENSES: The Board of Directors shall determine fees and flight charges necessary to provide adequate finances.
2. DEPOSITORY: The Club funds shall be deposited in a reliable banking institution and shall be made negotiable by presenting the signature of the Treasurer.
3. LIMIT ON AUTHORITY TO EXPEND
 - a. Limit on Board. No obligation shall be incurred by the Board in excess of the funds on hand without membership approval. Capital expenditures over the value of a membership share must be approved by the membership. Such approval shall require a 75% majority of the members present or who have voted by written ballot or proxy.
 - b. Limit on Officers. Any elected officer of the Club may spend up to \$250.00 for the Club needs or activities.
 - c. Limit on Members. Members of the Club must obtain authorization from an officer or the Board prior to any expenditure.

4. **AUDIT:** Annually, at the end of the fiscal year, the books and accounts shall be audited by a special committee of two members appointed by the President. An independent audit shall be made at any time it is requested by the Board of Directors or by the written request of a majority of the Active members.

5. **CAPITAL MEMBERSHIPS:** From time to time, as needed, the Board may offer to all active members an opportunity to purchase a Capital Membership. By payment of a sum determined by the Board, a Capital Member will be excused from the payment of some portion of the monthly dues. At its discretion, the Board may terminate all or part of the outstanding Capital Memberships by repaying the original sum to the active member.

H. INSURANCE

Liability insurance shall at all times be carried to protect the Club. The Club may either purchase hull insurance to cover physical damage to aircraft or it may self-insure such risks.

I. CODE OF REGULATIONS

The Code of Flying Regulations and any other regulations deemed necessary by the members of the Club shall be adopted and have the same force and effect as if a part of these By-Laws, and will be in accordance with current Federal Aviation Regulations.

J. CLUB AFFILIATIONS

The Club shall become affiliated with reputable local, regional or national Soaring Societies at the discretion of the Board.

K. CLUB SYMBOL AND IDENTIFICATION

1. The Club may have an appropriate symbol which will best represent itself in accordance with the ideals and purposes set forth in the By-Laws.
2. The Club members may have an appropriate identification card attesting to their current status in the Club.
3. Any terminating member must return their Club identification card to the Secretary within ten days. Such cards are loaned to members and are Club property.

L. AMENDMENTS

1. Amendments, additions or changes to these By-Laws or to the Articles of Incorporation can be effected by a seventy-five percent vote of the Active and Inactive members.
2. In the event that the proposed amendment, addition or change is accepted, then it shall be effective immediately unless otherwise specifically provided.
3. Each member shall receive a current copy of these By-Laws.
4. Any change or amendment to the By-Laws shall be made on a yearly basis.

M. DISSOLUTION

Upon dissolution of the Club, three members shall be voted by the Club membership as trustees to handle the liquidation of the assets thereof, as soon as practicable, and pay all existing debts and liabilities in proportion to the final available capital including any money rightfully due to the members as refunds in accordance with the regulations of the Club. Any surplus shall be equally distributed among remaining members.

Chapter 4

Table of Fees and Dues

Active Full share	Active 2/3 Share	Active 1/3 Share	Family¹	Inactive	Honorary	Associate
<i>Membership Limit</i>						
None	None	None	None	None	5	15
<i>Membership fee</i>						
\$2100	\$1400	\$700	\$100	N/A	N/A	N/A
<i>Refundable Equity</i>						
75% current share value	62.5% current 2/3 share value ²	25% current 1/3 share value ³	N/A	Same as active member	N/A	N/A
<i>Yearly Dues</i>						
\$300	\$456	\$612	\$60	\$75	N/A	N/A
<i>Billing Frequency</i>						
Biannual	Biannual	Biannual	Biannual	Annual	N/A	N/A
<i>Flight Privileges</i>						
Yes	Yes	Yes	Limited	Limited	No	No
<i>Voting Privileges</i>						
Yes	Yes, 2/3	Yes, 1/3	No	Yes	No	No
<i>May hold elective office</i>						
Yes	Yes	Yes	No	No	No	No
<i>Assessable</i>						
Yes	Yes	Yes	No	Yes	No	No
<i>Receives club mailings</i>						
Yes	Yes	Yes	Yes	Yes	Yes	No
<i>SSA membership paid by MSC</i>						
Yes	Yes	Yes	One per Family	Yes	No	No

¹ An Active member must sponsor family members. Family memberships terminate at age 23 (except spouse).

² 2/3-share members must have maintained an Active Membership for two (2) years before becoming eligible for a refund. Refunds are based on the current 2/3-share value.

³ 1/3-share members must have an Active Membership for three (3) years before becoming eligible for a refund. Refunds are based on the current 1/3-share value.

Chapter 5**FLIGHT REGULATIONS****I. DEFINITIONS****A. FIELD OPERATION OFFICER (FOO)**

A member who has been authorized to supervise flight operations, is present at the field, and is the person responsible for conducting an MSC flight operation safely and in accordance with MSC By-Laws and regulations.

B. MSC TOW PILOTS

Persons specifically authorized to pilot the towplane during MSC flight operations are MSC Tow Pilots.

C. MSC INSTRUCTORS

Persons specifically authorized to provide flight instruction in MSC operated sailplanes are MSC Instructors.

D. MSC SOARING SITE

The normal location of flight operations of the Minnesota Soaring Club is Stanton Airport, Stanton, Minnesota.

II. FLIGHT AUTHORIZATION

All use of Club equipment, flight training programs, cross country flying and other necessary related requirements shall be at the discretion of the Board, as set forth in the By-Laws. The Director of Operations will be responsible for flight activities as authorized by the Board. The responsibility of conducting a specific flight operation is delegated by the Director of Operations to a Field Operation Officer assigned for the day.

III. FLYING QUALIFICATIONS

To qualify for flight privileges a person must be a member, must be authorized to fly a particular sailplane, and must be authorized to make the specific type of flight planned (solo, P.I.C., cross country, back seat). To verify such authorization each member must carry an MSC flight qualification card.

A. MEMBER

1. Only members in good standing will be permitted to fly Club equipment. Membership classes which include flight privileges are specified in the By-Laws. Financial obligations to the Club must be current as provided in the By-Laws. Members must also assume the responsibility of being familiar with current Federal Air Regulations and MSC regulations and adhere to all applicable regulations.
2. In addition a member must be in adequate physical condition to achieve a safe flight. A member shall not fly who is knowingly physically incapacitated to an extent which renders the person incompetent to fly safely.

B. SAILPLANE

1. All members must be checked out in each MSC sailplane by an MSC instructor.
2. Student solo endorsements expire in 90 days. Therefore, each spring all members without private glider ratings must not fly solo until they receive specific authorization from an MSC Instructor. MSC Instructors or the Director of Operations may at any time require any member to take a check ride. Check rides are especially appropriate for members without a solo flight within the preceding 90 days.

C. FLIGHT

1. The normal authorization to fly a particular MSC sailplane allows the member to fly the sailplane solo, in the local area of the MSC Soaring Site. Takeoff and landing must be at the MSC Soaring Site.
2. Additional authorization must be obtained to act as Pilot In Command from the rear seat of a two-place sailplane, or to make a cross country flight.

D. QUALIFICATION CARDS

1. The Director of Operations shall provide all members with a flight qualification card. The card will contain a blank space for each specific authorization that a member may earn. The appropriate blank space will be initialed by MSC Instructors or the Director of Operations as each specific authorization is granted.
2. 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.
3. A current flight qualification card, properly signed, is the only valid evidence of authorization. A FOO may only permit flights within the authorization indicated on a current flight qualification card.

E. REVOCATION OF FLIGHT PRIVILEGES

Any member may be grounded for cause by the Field Operation Officer, an MSC Instructor, or the Director of Operations. Suspensions by the FOO or by an MSC Instructor shall not exceed fifteen days. As specified in the By-Laws the Director of Operations may suspend a member until the next Board of Directors meeting.

IV. FLIGHT RESTRICTIONS

- A. No member shall use the Club equipment for hire nor shall the club equipment be rented to any person or organization.
- B. No member shall use any of the Club equipment while under the influence of intoxicating liquor. Violation shall mean automatic expulsion from the Club. Such a person may, within 30 days, petition the Board for re-admittance.
- C. No unauthorized pilot shall occupy the front seat unless accompanied by an MSC Instructor or other member specifically authorized to act as Pilot In Command from the back seat.

- D. The towplane will be flown only by MSC Tow Pilots. The tow pilot shall be the only occupant of the towplane during tow except as specifically authorized by the Director of Operations for purposes such as filming, cross-country transportation or checkout of tow pilots.
- E. All flights of Saturdays, Sundays and legal holidays shall not exceed a period of one hour unless approved by the Field Operation Officer. Flights shall be restricted to the local area around the MSC Soaring Site except for properly authorized cross-country flights.
- F. Aerobatics including spins are prohibited except as authorized by the Director of Operations or an MSC Instructor.
- G. Instrument flying and cloud penetration is prohibited except in accordance with FAA Regulations. MSC sailplanes are not properly equipped for such flights.
- H. Cross-country flights will be made only by persons having completed the Cross-Country Qualification program and authorized by the Director of Operations.
- I. All members must be currently familiar with Federal Air Regulations and violations shall be reviewed by the Board for appropriate action. Each member must abide by all applicable Federal Air Regulations.
- J. All aircraft must be flown within Placard Limitations and in accordance with Minnesota Soaring Club flight practices.
- K. All sailplane flights from the MSC Soaring Site during a Minnesota Soaring Club operation must operate under the rules of the Minnesota Soaring Club. Usage of any equipment (sailplanes or towplane) that is not owned by MSC must be approved by the Director of Operations, an MSC Instructor, or the MSC tow pilot making the tow. Anyone without a private glider rating must have an instructor endorsement before flying any sailplane. MSC Instructors may only assume the responsibility of such endorsements for MSC owned sailplanes.
- L. No thermalling after pattern entry.
- M. No thermalling in the Parachute Club's active Drop Zone.

V. APPOINTMENT OF FOO, INSTRUCTORS, TOW PILOTS

- A. The Director of Operations or an MSC Instructor may authorize a member to be a Field Operation Officer. To qualify, a member must have appropriate experience, be willing to accept the responsibilities, and be thoroughly checked out under the guidance of an MSC Instructor. Generally newer members are not authorized to be a FOO and thus most members are licensed private sailplane pilots before becoming a FOO. Field Operation Officers are authorized to conduct flight operations at their own discretion.
- B. MSC Instructors must be FAA rated and will be appointed by the Director of Operations. The Director of Operations may appoint a Chief Instructor to supervise the training and proficiency of instructors. He may remove any instructor from the active instructors list.

- C. MSC Tow Pilots shall be appointed by the Director of Operations. The Director of Operations is responsible for supervising the training and monitoring the proficiency of tow pilots. The Director of Operations may remove any tow pilot from the active tow pilot list. Selection of tow pilots is subject to FAA and MSC requirements. (See tow pilot eligibility, chapter 7)

VI. INSPECTION AND MAINTENANCE

- A. The Field Operation Officer shall be responsible for a pre-flight inspection of the sailplanes and an examination of the towline and other pertinent equipment prior to the first flight of the day. A general examination of the equipment including the towline shall be made on following flights.
- B. The Director of Equipment shall be responsible for maintenance of the Club equipment as set forth in the By-Laws.
- C. Any malfunction of Club equipment shall be reported as soon as possible to the Director of Equipment by the Field Operation Officer. Any malfunction, which renders a sailplane unsafe for flight, should be noted on a placard posted on the instrument panel of the sailplane so affected. Also, notation should be made on the daily flight sheet.

VII. FLIGHT OPERATIONS

- A. GROUND OPERATIONS
 - 1. A Field Operation Officer must be present and will be responsible whenever equipment is removed from the hangar, during each flight operation, and as equipment is being stowed.
 - 2. While Towing to or from the takeoff site in high winds the FOO shall assign both wing and tail walkers. Also, the wing walker, while the sailplane is being towed, should always be on the side of the sailplane into the wind.
 - 3. The sailplane shall not be left unattended on the field at any time unless adequately secured. Whenever a sailplane is parked on the field it shall be positioned so that any wind shall blow over the ship from a rear quarter. If there is any possibility of wind, the lowered wing shall be secured to the ground by adequate weight or tie-down.
 - 4. The Field Operation Officer shall decide which runway to use. If conditions change, the FOO will change the active runway, consistent with power-plane traffic.
 - 5. All members should be quick to help retrieve landing sailplanes. In high wind conditions the ground crew should be ready to grab the wing tips as a sailplane comes to a stop at the end of the roll out.
 - 6. The members making the last flight of the day for each type of sailplane shall be responsible for returning the sailplane to its proper place in the hangar and securing all other Club equipment.

7. The Field Operation Officer is responsible for stopping a flying operation if the weather or other conditions in his judgement are or may become unfit for flying.

B. FLIGHT REPORTS

1. All flights must be logged on a Daily Flight Sheet. These records will be made in duplicate and attached to the flight board. After the days flying activities, the flight sheets will be placed in the designated place in the Clubhouse.
2. Any accident involving injury to personnel or damage to equipment must be reported immediately by the member involved to the Field Operation Officer. A report in writing describing the incident shall be submitted to the Director of Operations. This is in addition to any accident reports required by the FAA. The above also applies to any unusual incident, such as landing off the airport during a local flight.
3. Any violation of the Flight Regulations must be reported to the Director of Operations by the member involved or any other witness.
4. Any aircraft malfunction should be noted on a placard and taped to the instrument panel of the aircraft involved thereby notifying pilots of the malfunction.

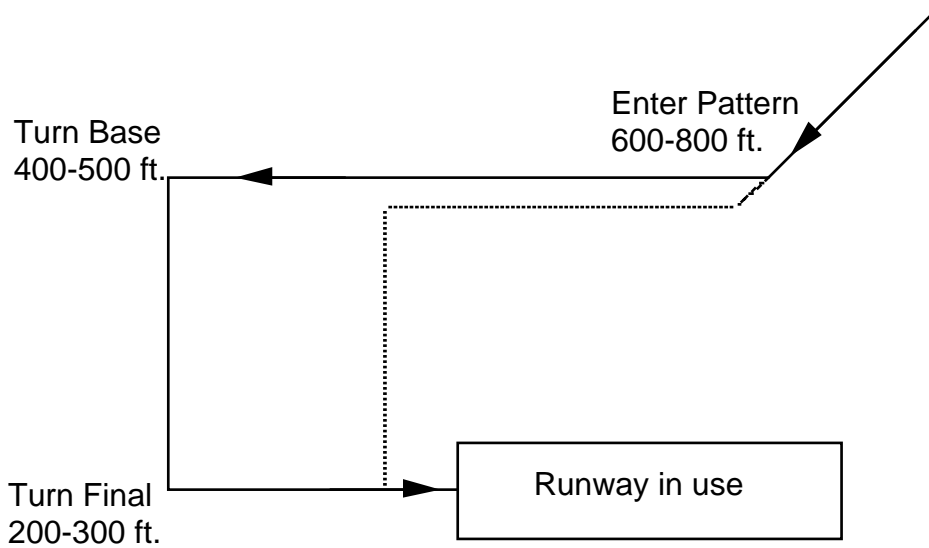
C. FLYING PREFERENCE

1. During scheduled operations a preference list shall be used by the FOO to determine which member may make the next flight. Upon arriving on the field, each Active Member may add their name to the bottom of the list. Family members must share the position of their sponsoring Active Member. Whenever a sailplane is available, the member whose name is at the top of the list may fly at that time or the member may pass. If the first member passes then 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 the pilot is deleted from the list at the time of takeoff. As each sailplane lands the pilot is responsible for clearing the runway, and moving the sailplane back to the flight line and securing the sailplane. Then the name of the pilot may be re-entered at the end of the preference list.
2. Tows for other than MSC owned sailplanes shall be governed by the same preference list. An Active Member with a private sailplane may be towed whenever the pilot's name heads the list. If an MSC sailplane is not available, then the first pilot on the list with a sailplane may be towed.
3. Members who fly a two-place sailplane and who are authorized to carry passengers may select any person of their choice to ride along. If another member is selected, the standing of that member on the preference list is not affected.
4. The FOO shall make all reasonable efforts to give launch (and relaunch) priority to pilots attempting bona-fide cross country and badge flights.
5. When MSC instructors are present, two-place sailplanes shall be reserved until 12:00 P.M. for instruction. Instruction, courtesy rides, first solo, and demonstration rides may have preference over other flights at the discretion of the Field Operation Officer.

6. Reservations for cross country attempts in MSC sailplanes on Saturdays, Sundays, and legal holidays must be made with the approval of the Director of Operations.
7. Tows for guests with their own sailplane shall be at the discretion of the FOO. In general guests are expected to wait until the tow may be made without delaying MSC flights.

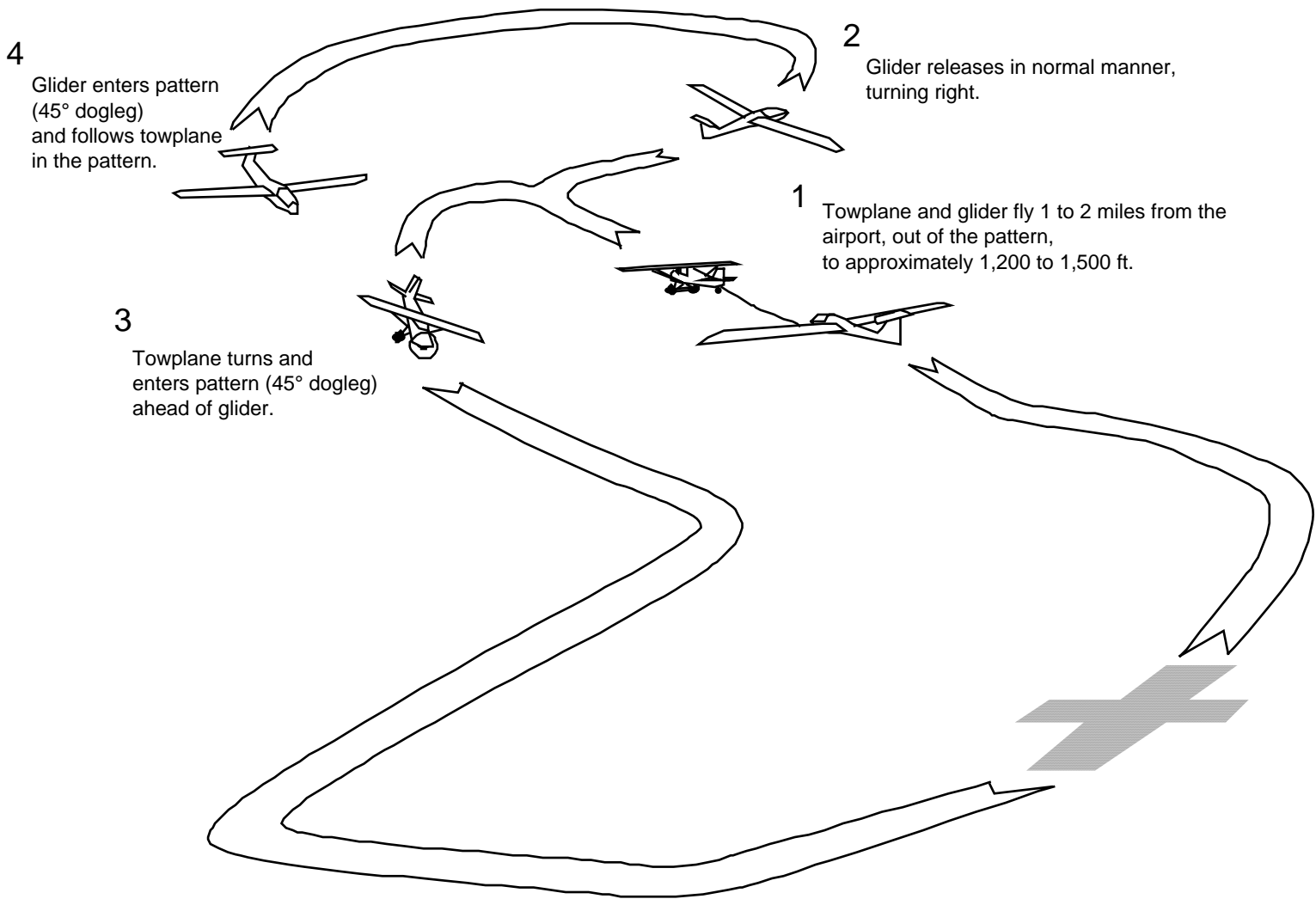
D. FIELD FLIGHT PATTERNS

1. The flight pattern to be used at Stanton is shown below. Pattern speed is to be the manufacturers recommended still air landing speed plus one-half the wind speed. Pilots of higher performance sailplanes must be aware that inexperienced pilots fly the Club sailplanes. More experienced pilots should accept the responsibility of adjusting their patterns to minimize interference with less experienced pilots.



Establish the downwind leg parallel to and about 1/4 mile out from the runway. Bring in closer in windy conditions.

2. Pattern Flights:



Pattern Flights 1**E. SAILPLANE TOW SIGNALS AND PROCEDURES**

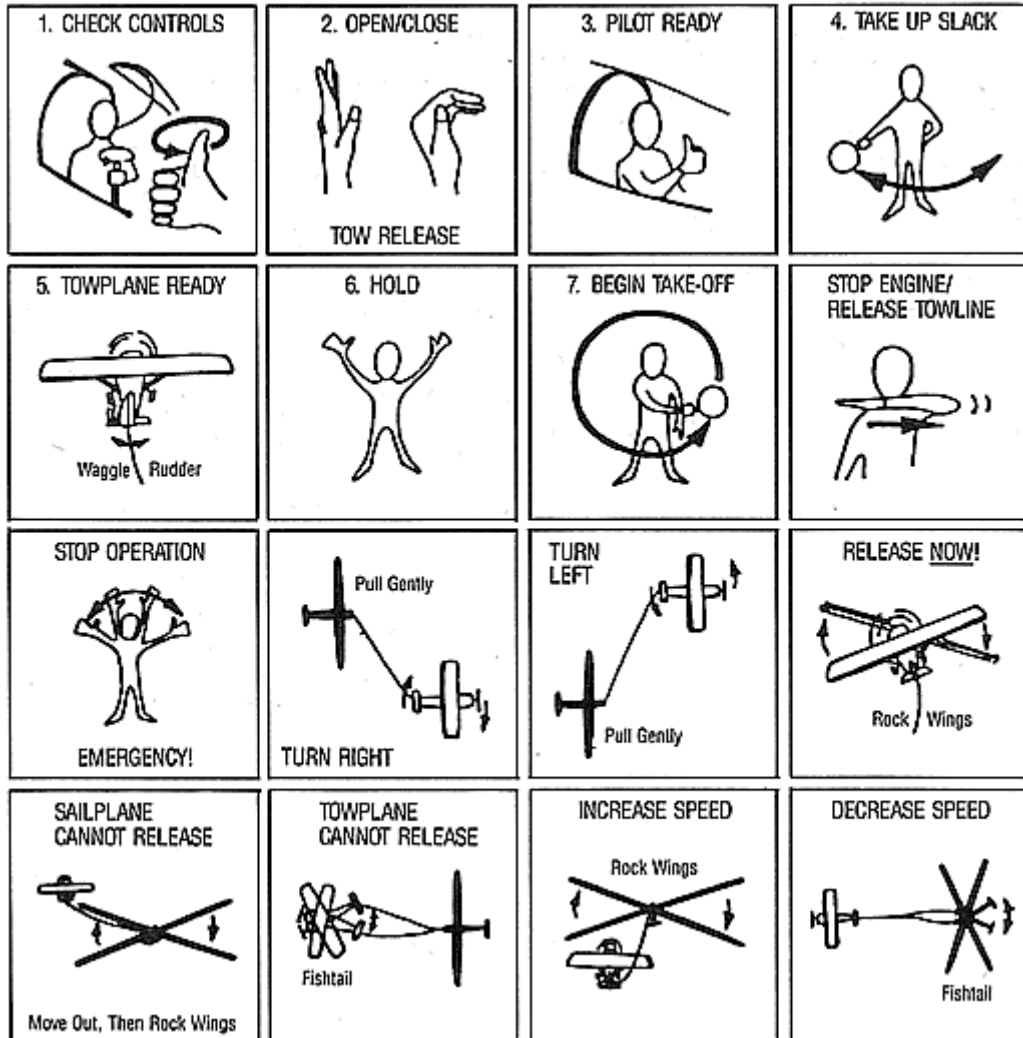
In preparation for a sailplane launch, a sailplane wingman and a towplane starter assist communication between the sailplane pilot and the towplane pilot. They also have a safety function to ensure the launch does not conflict with other traffic and that the runway is clear. If a sailplane has landed and rolled to the side of the runway, wait until it is completely clear of the runway. Either move it to a cross runway or return it to the flight line.

1. The sailplane pilot is in command. All take-off signals must originate from the sailplane pilot.
2. The sailplane wingman has the primary responsibility of ensuring there is no conflicting traffic (remember to check both the cross runway and upwind). The sailplane wingman shall place the sailplane wingtip on the ground whenever there is to be a delay. The wingtip on the ground makes it obvious to the towplane starter and to any other traffic that the take-off roll is delayed.
3. The towplane starter must not give any signal except as directed by the sailplane wingman. The starter should stand along the edge of the runway but so as to be within visual range of the towpilot during the initial takeoff roll. The starter should also check for conflicting traffic.
4. The following signals and procedures will be standard and used at all times while operating Club equipment.
 - a. Connect Towline. Make loop with thumb and index finger and interlock loops of both hands like 2 links in chain.
 - b. Take Up Slack In Towline. Sailplane pilot gives thumbs up signal to sailplane wingman. Sailplane wingman lifts the wing level and rocks arm in an arc of 60 degrees each side of vertical below the waist. Towplane starter swings both arms in arc of 60 degrees each side of the vertical below the waist.
 - c. Begin Take Off. Sailplane pilot indicates ready by pointing forward. Wingman, after checking for conflicting traffic, holds wing of sailplane level and rotates arm continuously 360 in a plane perpendicular to towline. Upon seeing this signal, the towplane starter will similarly indicate to the tow pilot by rotating arm.
 - d. Stop Operation, Emergency. Give a cut signal with hand across the throat or rock arms vigorously through overhead arc. Sailplane pilot releases immediately, Tow pilot stops engine and releases tow line, wing-runner lowers wing.

Airborne Signals:

- e. Towplane Turn Right. Sailplane moves to the left of the normal position.
- f. Towplane Turn Left. Sailplane moves to the right of the normal position.
- g. Release Tow Line (towpilot to sailplane). Continuous rocking of towplane wings.

- h. I Cannot Release (sailplane to towplane). Sailplane moves within visual range of towpilot, and then rocks wings.
- i. I Cannot Release Either (towplane to sailplane). Tow pilot uses rudder to yaw from one side to the other.
- j. Glider Air Brakes are Open (towplane to sailplane). Tow pilot wags rudder from side to side



F. EMERGENCY PROCEDURES

- 1. Sailplane Cannot Release. Sailplane pilot gives cannot release signal, towplane tows the sailplane over soaring site (if possible) and releases tow line at an adequate altitude when the sailplane is in high tow position. Sailplane (with tow line attached) should cross boundary of landing area, if feasible, at an altitude slightly in excess of the length of the tow line.

2. Both Sailplane and Towplane Cannot Release. After an exchange of appropriate signals, towplane proceeds to largest practicable landing area within reasonable range, makes slow let down while sailplane uses adequate spoilers or airbrakes to keep from overrunning the towplane. Final approach should be in a straight line at least a mile long and flat. Towplane should use no brakes on landing roll, perhaps a little power to extend roll. Towplane should favor left side of runway and finally clear it to the left. Sailplane should favor right side of runway.
3. Discontinued Takeoff Roll (towplane failure, traffic, etc). Towplane releases tow line, favors left side of runway, and clears to left. Sailplane releases, favors right side of runway and clears to right.
4. Towplane Engine Failure (partial). Towplane will attempt to continue level flight to get sailplane in favorable position for emergency landing. If level flight not possible towplane signals release.
5. Towplane Engine Failure (complete). Towplane releases tow line immediately.

VIII. MSC SAILPLANES

This section of the flight regulations is for information related to a specific MSC sailplane and thus will change as equipment changes.

A. Flight Authorization Guidelines

These guidelines are documented here to give members an understanding of the requirements to obtain flight authorization for specific MSC sailplanes. However, all members must recognize that the MSC Instructors and the Director of Operations have wide discretion. They may authorize members who do not meet the exact letter of these guidelines. They may also withhold authorization from members who apparently meet the guidelines.

1. The Ka-7, Ka-8b, and ASK-21 are easy to fly. When a member first solos they will be authorized to fly that one sailplane. Usually the member will then make several solo flights in that sailplane and receive more check flights and then be checked out in a second and finally the third sailplane.
2. Higher Performance Sailplanes: In the past MSC has owned high performance sailplanes. If such are again acquired the Board will establish guidelines for the checkout of members in such sailplanes and publish them here. For example a private glider rating or minimum number of sailplane hours may be required.
3. The first solos are normally made in the ASK-21 but may be made in the K-7. To fly solo in the Owl, club members must have their private pilot license and incipient and full spin training with an instructor in the Owl.

B. Special handling of the ASK-21

1. Avoid moving the ASK-21 when one of the canopies is open. A bump could cause an open canopy to slam shut.
2. Each canopy of the ASK-21 has two sliding rails, one on each side, which are used to lock the canopy. On the ground it is sufficient to reach inside the canopy window from the left side and latch the left side rail.
3. If the ASK-21 is ever flown with the rear canopy unlocked the rear canopy will be blown off. To prevent this from happening it is necessary that each pilot take responsibility and ensure that the rear canopy is locked. If you fly the ASK-21 solo, be sure to lock the rear canopy before climbing into the front seat. If you carry a passenger, especially a non-member, be sure that the canopy is locked and confirm that the passenger understands that the rear canopy must not be unlocked in flight.
4. To help prevent an accident we will follow this procedure:
 - a. If the rear canopy is closed, IT MUST ALWAYS BE LOCKED!
 - b. If the rear canopy is unlocked, IT MUST ALWAYS BE OPEN!
5. FOOs, wing runners, and others can help prevent the loss of the canopy by helping pilots remember to lock the rear canopy. Protect your ASK-21.

Chapter 6**FIELD OPERATION OFFICER GUIDE****I. AUTHORIZATION AND SCOPE**

- A. Authority: The Field Operation Officer (FOO) is in charge of the operation and has full responsibility for running it safely and efficiently, consistent with the flight regulations and By-Laws.
- B. Qualifications: To qualify as a Field Operation Officer a member must be authorized by an MSC Instructor or the Director of Operations as having been checked out in all related techniques and procedures. In addition, to remain current, a member must have served as a scheduled FOO on a weekend within the past 12 months, in order that he or she is updated on any change in techniques.
- C. Function: The Function of the Field Operation Officer is an extremely important and critical one, requiring knowledge, organizing ability and sufficient aggressiveness to accomplish an efficient flight operation. It is the purpose of this guide to dispel some of the confusion that may exist concerning the duties and responsibilities of the FOO and to emphasize the mostly underrated importance of this position to a safe, efficient and enjoyable soaring experience. Basic to the function is knowledge; knowledge in general of soaring, and in particular, of the field handling problems related to sailplanes. This guide assumes a general familiarity with soaring operations and ground handling as described in the SSA manuals and addresses the problems and routines particular to the Minnesota Soaring Club.

II. COMMENCING OPERATIONS

- A. Before lowering the sailplanes, it may be necessary to move one or several airplanes to clear the area sufficiently. Stanton Sport Aviation shall always be informed and their permission obtained before moving aircraft. When lowering sailplanes, three persons are generally needed: one on each wing tip rope and one operating the hoist. After the sailplane is free of the hoist, the hoist should be raised and all cables placed in the bucket to hang clear of any aircraft below. All equipment should be cleared of the hanger floor to the extent that any aircraft may be freely moved in and out before moving out onto the field. The flight data sheet with a new carbon should be dated and the towplane tachometer reading logged at this time. Before leaving the area, lock the equipment cabinet doors.
- B. Determine the runway closest to the wind from the position of the wind sock and proceed accordingly. The wing walker should always be on the upwind wing tip and should hold that tip somewhat lower than level. In windy conditions a person should also be stationed at the tail and a third ride in the cockpit as appears prudent.
- C. Before commencing the flight operation, the FOO must wear an identifying mark or badge, such as the red vest or armband. If for some reason, the FOO must leave the scene or take a flight, this mark must be positively turned over to another qualified person to act in his place.

III. OPERATION ON THE FIELD

- A. All operations should be conducted from the left side of the runway (except runway 36 and 9) and about 75-100 yards upwind from the landing end. In windy conditions, it should be about 25 yards further upwind. No sailplane should ever be left unattended on the field unless it is weighted or tied down. All sailplanes

shall be parked so that the wind will blow over the ship from a rear quarter. The upwind wing tip shall be held or weighted down. The last person to fly the sailplane is responsible for seeing that it is either secured properly or is turned over to the next pilot assigned to fly it.

- B. Efficiency of the operation depends to a great extent on the FOOs alertness and aggressiveness. He should always have determined who is going to fly in the sailplane next in line well before the towplane is back on the ground from the previous tow. The pilot should be strapped in and ready to go, so there will be no delay.
- C. The FOO is responsible for seeing that the person running a wing tip or assisting the towplane knows the signals and is aware of the routines. Several near-accidents have occurred because of the ignorance of well-meaning helpers. The FOO is also expected to be aware of the qualifications of any person intending to fly. If in doubt, verify qualifications via the flight qualification card.
- D. A major responsibility is the flight data sheet. Make certain that every flight is logged properly with the release altitude, sailplane, time aloft, and any applicable notes. These are permanent Club records and should be treated accordingly.
- E. On weekends, the maximum flight duration is one hour, unless specified otherwise by the FOO. If many members wish to fly, the FOO may restrict flights to less than 60 minutes so that all members may fly. The FOO may approve longer flights if no one else is expected to fly the sailplane at the end of the hour. If in doubt, arrange for a signal, such as the position of a car on the field, so the sailplane pilot can check at the end of the hour and determine whether he or she may stay longer.
- F. Normal operations are conducted using golf-carts to tow gliders on the field.
- G. Spectators must be kept well off to the side and out of the way of the operation to avoid accidents.
- H. Occasionally, circumstances may occur which can make it desirable to allow the FOO to decide the order of the flights. When this occurs, the FOO must exercise responsibility and make the decisions. Cross-country launches are an example of this situation.
- I. The FOO must halt any operation and secure the equipment in the event weather conditions require it.

IV. SECURING THE OPERATION

At the completion of the day's operation, all equipment and any waste paper or pop bottles must be picked up. The sailplanes must be moved to the hanger in the same fashion they were brought onto the field. After stowing the sailplanes, make certain that all equipment is stowed in the cabinet and locked and the towplane tachometer time noted on the data sheet before leaving.

V. SUMMARY

Remember that the key to a safe and efficient operation is a competent and aggressive FOO. Do not be shy about asking any of the Club members to assume duties such as chasing the rope, readying or moving sailplanes, manning golf carts or attending to the flight data sheet. Be ahead of the game and anticipate the situation's requirements.

Chapter 7**TOW PILOT GUIDE****I. INTRODUCTION**

This tow pilot's guide is intended to standardize the operational procedures of all Minnesota Soaring Club tow pilots. These guidelines should not be interpreted as a substitute for good judgement 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 in use. 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!

II. PREFLIGHT

With many different pilots flying the towplane it is necessary to write notes to communicate the status of the towplane to other towpilots and to record towplane maintenance items. A clipboard will be used for this purpose. It is the responsibility of the first towpilot each day to check the clipboard and pass on any necessary information to other towpilots that day. It is each towpilots responsibility to write on the clipboard any problems that they find. The Tow pilot making the first tow each day must conduct thorough preflight:

- A. Use checklist in towplane to conduct normal preflight of towplane
- B. The oil level must be above 6 quarts
- C. Check the engine hours and tell the maintenance director if over 30 hours have been logged since the last oil change
- D. Check the towplane clipboard
- E. Check the Tow Rope Release and/or Tow Rope Retrieve Winch /Guillotine pin
- F. CLEAN THE WINDSHIELD

III. TOWPLANE STARTING AND WARMUP

When the engine is cold, set the brakes, operate the primer, and pump throttle twice. Pull the prop through about five compressions with mags OFF and throttle CLOSED. Use the checklist in the towplane. Start the engine on BOTH mags. The left mag has the impulse mag for starting but it doesn't hurt anything to start on both mags and you won't forget to switch to both mags. The run up check must be done before the first flight of each day. Runups on subsequent starts are at the option of

the tow pilot. Propping the engine will not be allowed unless the tow pilot and FOO agree that the person volunteering to prop is qualified.

IV. TOWING FLIGHT PROCEDURES

A. LOOK OUT THE WINDOWS

B. Wind Considerations/Concerns

The biggest danger to the towplane occurs on windy days. Operate from the runway that provides the maximum safety for the towplane. 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 towplane. 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 an old hand having one of those days when nothing goes right, shut down the operation before the towplane 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 slowly and smoothly executed.

C. Prepare to Make a Tow

Check fuel quantity before every tow. Make sure that the tank selector is on the tank you think it is on and that the tank selected has more than enough fuel for a complete tow and landing. NEVER switch tanks just before takeoff. (Plan ahead and switch tanks as desired during descent back to the airport).

1. Set Trim; Flaps up
2. Check the fuel
3. Check Mags; Both
4. Carburetor heat off
5. Set Mixture
6. Check type of sailplane being hooked up to determine tow speed

D. Take Off

LOOK OUT THE WINDOWS

Announce your takeoff on 122.8. All take-off are to be made at full power and consideration should be given to leaning for maximum performance on hot days. Early in the takeoff ground roll, be alert and ready to release if the glider gets too high and endangers the towplane. If you release the glider and elect to stay on the runway, move to the left side of the runway to allow room for the glider on the right. (remember, after release towplane turns left, glider right)

After lift-off it is important to make a smooth transition to the correct towing speed. Obviously the climb must begin 5-10 mph before the tow speed because the aircraft are accelerating. Remember to consider the effects of airspeed indicator errors and the effect of climbing into a strong wind gradient. It is impossible to over-emphasize the importance of proper speed. If in doubt about

the proper speed, ask. The following tow speeds are standard at MSC unless otherwise requested by the sailplane pilot.

Sailplanes	Airspeed
K-8B (1-26,1-20)	55-60 mph
K-7 (Ka-6, Duster)	60-65 mph
ASK-21, OWL (other high performance)	65-70 mph

E. Towing; 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 towplane, 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.

WATCH OUT FOR TRAFFIC -- LOOK OUT THE WINDOWS

F. Tow Patterns

A well planned tow is very important to the efficiency of the operation. Unfortunately the best pattern varies according to the height of the release and the wind conditions. Suggested tow patterns are shown at the end of the tow pilot guide. Fly straight out to an altitude of 1,000 feet and then follow the appropriate pattern depending on the wind. Stay away from the drop zone and plan for the release to be made on the downwind leg side of the airport to avoid crossing the airport and other traffic when returning to the airport pattern entry point. All tows, especially instruction tows, should be made upwind of the airport unless otherwise requested. The higher the tow and the stronger the wind, the further away one should tow upwind from the airport.

For a pattern tow, the towplane will tow the glider out of the pattern—usually this will necessitate a left turn. The glider will release at 1,200 to 1,500 feet AGL. The towplane should enter the pattern promptly, while the glider maneuvers to maintain separation. The towplane should land before the glider.

G. Release and Descent

When the sailplane releases, check the mirror to make sure the sailplane has released and has turned right before starting the clearing turn and descent. Start a descending left turn and roll out after 90 degrees change of direction. This will ensure proper separation from the sailplane.

A slipping descent has been eliminated because of restricted visibility while in a slipping attitude and wear and tear on the airframe. Rather, plan your tow pattern as described in IV.F so that you will be able to return to the field in straight or S-turning flight using the required minimum power setting for your airspeed.

LOOK OUT THE WINDOWS

Reduce power slowly and smoothly to 2000 RPM. Maintain at least 2000 RPM and keep airspeed under 100 MPH during descent. It is important to slow the rate of engine cooling to reduce the chances of cracked cylinder heads due to rapid cooling. If a release is made directly over the airport, move away from the airport during the descent. While slipping descents have generally been eliminated, if it a slip is done remember that the first priority when slipping is traffic avoidance. Windows should be closed to prevent damage from air pressure building up in the cabin.

Keep a sharp eye and LOOK OUT THE WINDOWS. The following speeds and power setting can be used:

- 80 mph -- 1900 rpm
- 90 mph -- 2000 rpm
- 99 mph -- 2100 rpm (maximum airspeed)

V. RETURN TO AIRPORT AND LANDING

A. Return to the Airport

This is the phase of towing where most time can be saved but is also dangerous and is an area susceptible to errors. If you find yourself having to fly long distances to the airport after the descent, modify your tow pattern in closer to the field. However, safety is the prime consideration of towing over efficiency.

While slips are generally eliminated, if you do a slip, the slipping attitude must be discontinued within one mile of the airport. No slipping into the pattern. All pilots should be flying straight and level and looking for other traffic when within one mile of the airport.

B. Traffic Pattern

Announce downwind on 122.8. The downwind leg when using runway 36 shall be at least 1/4 mile west of downtown Stanton and for runway 18 shall be 1/4 mile east of highway 56. Similar spacing shall be used for the east/west runway. Pattern altitude will be at a minimum of 600 ft AGL.

C. Dropping the Rope

LOOK OUT THE WINDOWS

The rope drop pass should be flown at about 80-100 MPH but NEVER lower than 200 feet. Be very careful turning base to final as you will be overtaking other traffic and this is the busiest spot on the traffic pattern. After the rope drop, begin the climb to pattern altitude (minimum of 600 feet) and slowly add power to about 2200 rpm. Full power is definitely not required.

D. Landing**LOOK OUT THE WINDOWS**

Observe the maximum flap operating airspeed (white arc). When landing on runway 36 cross the road at least 35 to 50 feet AGL. After landing clear the runway by turning left except that on runway 36 clear to the right. Careful use of the brakes will not only make them last longer, it will also eliminate one cause of getting the towplane onto its nose. Once securely on the ground set the controls properly for the wind conditions. Use slow "S" turns while taxiing to keep from running into runway lights, people and other things.

VI. HANGARING THE TOWPLANE

- A. Fill the tanks
- B. Note any problems on the towplane clipboard (in the locker)
- C. Turn off Master and Mags
- D. Close the doors and windows
- E. If possible, leave a pleasant surprise - clean the windshield and prop.

VII. TOW PILOT ELIGIBILITY

Each year, before towing, each potential towpilot must present themselves to the Chief Tow Pilot and confirm that they are in compliance with FFA regulations, MSC, and Insurance Requirements.

A. FAA Towing Requirements

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

B. MSC and Insurance Requirements

MSC tries to purchase consistent insurance however the specific pilot warranties issued by the insurance companies do change. It is important to review and understand the specific pilot warranties each year and to ensure that MSC tow pilots meet the requirements. Our insurance does not allow flight instruction in the tow plane. If a pilot is only a few hours short on time, it may be possible to complete the time during a few check rides. The present requirements are listed below as an example of the minimum requirements for tow pilots:

1. 500 hours power PIC flight time
2. 100 hours in tail wheel aircraft
3. 10 take-offs and landings in the same make and model (PA18)
4. 10 previous tows

C. MSC Check Pilot Requirements:

See the chief tow pilot for the list of MSC check pilots.

1. 500 hours power PIC flight time
2. 100 hours in tail wheel aircraft
3. 10 take-offs and landings in the same make and model (PA18)
4. 10 previous tows

D. CHECK OUT

When a member who meets the above requirements wishes to become a tow pilot, any MSC check pilot may begin making check flights with the member in the MSC tow plane. This will be done during normal towing only. New (to MSC) but experienced tow pilots or those who have not towed a glider in over one year will be required to make at least 3 tows with an MSC tow pilot and may be required to make more tows with a designated instructor or tow pilot as required by current procedures.

When the checkout has been completed, the MSC check pilot will authorize the member to be a tow pilot by signing the MSC flight card. An entry must also be made in his log book by a CFGI.

VIII. MSC Model 1100 Tow Rope Retrieve Winch: Operating Instructions

Pre-flight: Before using winch ensure that guillotine activating pin is fully seated. Tow rope inspection should include the first 12 feet of rope that winds onto the drum. The 12 feet of rope can be inspected by pulling it backward into the baggage area.

Normal Operation

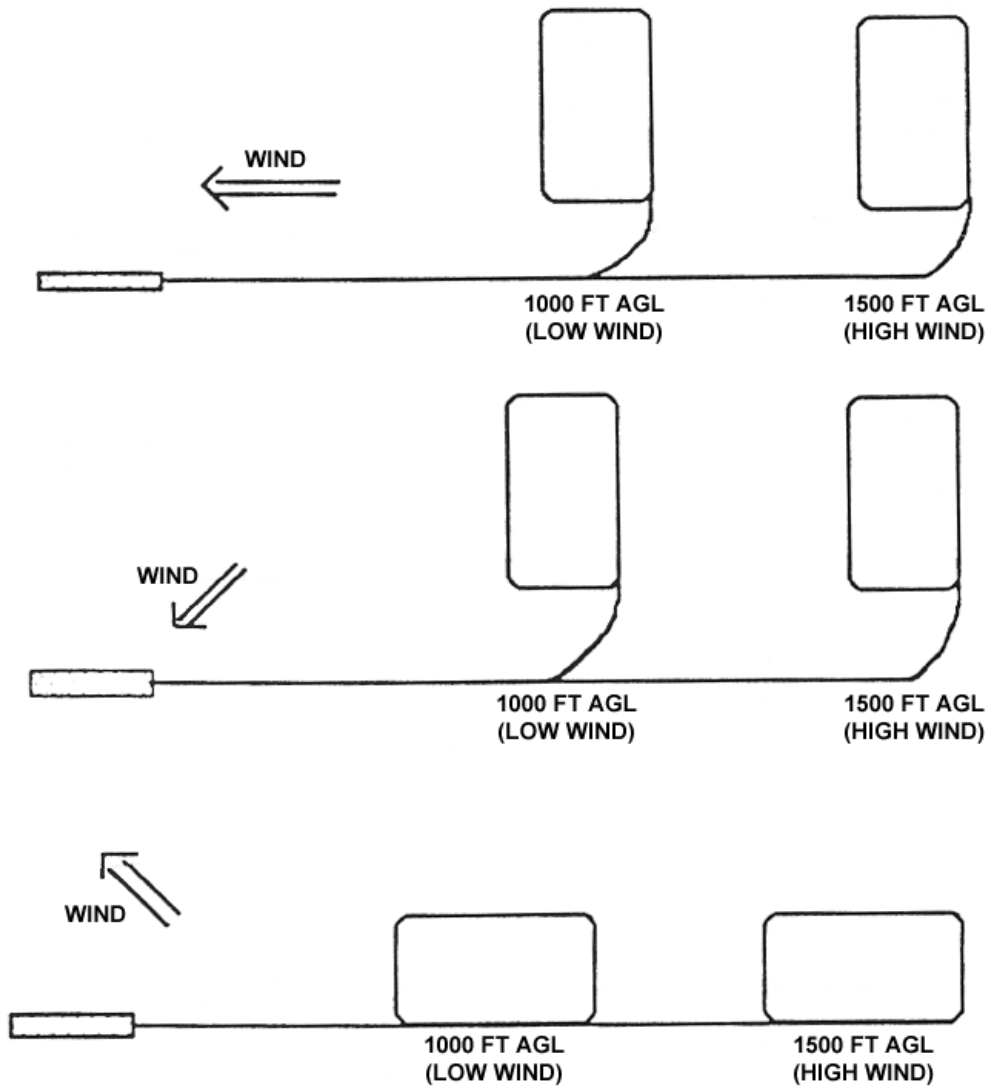
1. The tow pilot, with tow rope fully wound on winch, shall taxi in front of glider, stop, and then pull forward and up to detent the WINCH CLUTCH handle located under left side of rear seat. The wing runner shall grasp the tow ring and position him or herself next to the glider while the tow pilot starts a slow taxi to deploy the tow rope. Wing runner should maintain approximately 10' of slack at glider to facilitate hookup. Tow pilot shall verify rope fully deployed by looking over left shoulder into mirror mounted above winch. The final bit of rope is painted blue and should be visible in the mirror. Tow pilot can now release the WINCH CLUTCH. When rope is fully deployed, approximately 6" of blue rope will also be visible out of the guide tube on tail wheel mount. If desired, verification can also be made in this way from outside tow-plane.
2. Hookup and tow to altitude remain unchanged.
3. After release tow pilot will turn on POWER toggle switch and then press and release START push button. Amber RETRACTING lamp will light indicating that winch motor is running. Maximum airspeed for retrieve is 90 MPH. Retrieve time is 1 to 1 1/2 minutes. When retrieve is complete amber RETRACTING lamp will go out. Since the airspeed is low at the time of release, start retrieve immediately after release. A warning beeper will sound if retrieve is started when the clutch is not engaged.
4. Tow pilot shall then verify rope fully retracted by looking in mirror above winch. A portion of the rope is painted orange and should be visible at this time with a complete wrap of drum showing.
5. When the rope is fully retracted, turn POWER switch off and land.

Emergency Operation

1. If there is an in-flight need to release the glider, pulling the EMERGENCY RELEASE handle will cut the tow rope.
2. If rope does not indicate fully retracted;
 - A. Check WINCH circuit breaker and reset if necessary. Then attempt restart by pushing START button.
 - B. If the rope cannot be retracted, land long.
 - C. If long landing not practical then overfly field at 200'AGL and pull EMERGENCY RELEASE handle. This will cut the rope.
3. If power interrupted for any reason (POWER switch prematurely turned off or retrieve attempted at too high an airspeed) then START push button switch must be reactivated to resume retrieve.

To Make Winch Inoperative

1. Winch rope should be completely removed; The EMERGENCY RELEASE handle will then revert to its normal tow hook release function.
2. Use Schweizer tow hook in the normal manner.



IX. TOW PATTERNS

Chapter 8**CROSS COUNTRY SOARING****I. PURPOSE**

The cross-country program is both a training program and the qualification test for members who wish to seek authorization to make cross-country flights in MSC sailplanes. The emphasis is on safety. The program is intended to reduce the exposure to damage or injury which may occur during landing away from the MSC soaring site. The technical aspects of skillfully maximizing speed and distance are left for the members to achieve at some other time.

A. Evolution of the MSC Cross Country Program

About 1972, the MSC cross-country qualification program was developed. It consisted of several exercises to train a member in various aspects of flying cross-country. In 1983, the SSA adopted the Bronze Badge program as a standard for cross-country training. While designing the program, the SSA reviewed cross-country qualification programs of MSC and other soaring clubs.

B. SSA Bronze Badge

In the interest of adhering to SSA standards, the SSA Bronze Badge is now used for the written examination and sailplane piloting skills segment of the cross-country checkout. An outline of the ABC and Bronze Badge training program can be found in the SSA Membership Handbook. The MSC instructors can also provide information about the Bronze Badge.

The bronze badge can be summarized as follows:

- Completed C badge
- 15 solo hours in gliders, 30 solo flights (10 in single place)
- 2 flights of at least two hours duration
- 3 solo spot landings observed by instructor
- 2 simulated off-field landings with an instructor (altimeter covered)
- SSA cross country written test

C. MSC Cross-country Checkout.

In addition to the Bronze Badge requirement, MSC members must also demonstrate a knowledge of the barograph operation and the assembly and disassembly of the aircraft to be flown. Thus, the MSC cross-country checkout consists of:

1. Bronze Badge
2. Barograph Checkout
3. Assemble and disassemble the aircraft to be flown.

D. Priority at the Flight Line.

As noted in Chapters 5 and 6 above, the FOO will be making all reasonable efforts to give priority at the flight line for all bona-fide cross country attempts.

Chapter 9**POLICY**

This chapter shall be the place for recording policy decisions of the Board of Directors and other miscellaneous information. Recording such information here helps provide continuity to the Minnesota Soaring Club.

I. DOCUMENTATION

- A. The Board of Directors shall ensure that MSC documents are kept current and available to the membership. Modifications of documents other than By-Laws and the Articles of Incorporation shall be at the discretion of the Board. The Directors must recognize the importance of updating specific regulations or policy rather than issuing arbitrary edicts which may be misunderstood and forgotten.
- B. Every document should contain our name (MSC) and every page of each document should contain a page number and the date of revision. Masters used for reproduction shall be stored to ease the task of future updating.
- C. The membership handbook shall be reprinted in full every few years. Since people tend to lose documents and because few people would actually insert change pages, reprinting in full is the best way to provide members with a current membership handbook.
- D. The following list indicates MSC documents and the person responsible for maintaining masters and distributing each document:
 1. Membership Handbook Secretary
 2. MSC Newsletter (monthly) Secretary or person appointed by MSC Board
 3. MSC Club Roster Secretary or Treasurer
 4. MSC General Information Secretary, V.P.
 5. MSC Membership Application Secretary, V.P.

II. SELF INSURANCE

The Club does not always purchase insurance to cover hull damage which may occur while the aircraft is "in motion." Thus the Club could suffer a substantial loss if an aircraft is damaged during takeoff or landing. Although there is no specific sum of money set aside as a contingency fund, Club officers and members must be aware of the financial consequences of self insurance.

The By-Laws provide that a member is responsible for uninsured damages. If the damages are uninsured because the Club did not purchase insurance, a member shall be liable for the first \$250 in damage. Any greater loss shall be shared by the entire Club since the Club decided not to purchase insurance.

III. TOWPLANE RESERVE FUND

The towplane reserve shall be cash or commitments which can be converted to cash to provide for future towplane repair. The contribution to the fund shall be based upon the number of hours flown and will be such that the fund will provide at least 75 per cent of the next anticipated towplane expense. The purpose of the fund is to ensure the continuity of our operation when the moment arrives that requires extensive repairs.