

# Tucson Soaring Club

Statement of Procedures

(SOPs)

Revision - 3

February 28, 2010

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## INTRODUCTION

The keynote of sailplane operations is Safety, which is founded on knowledge and common sense. The rules and procedures outlined below have been established to provide guidance to all members for the purpose of maintaining our well being and enjoyment of the sport while these rules apply specifically to club operations, they follow practices in general use. Knowledge, understanding, and adherence will prevent the dangers of confusion and ignorance. In this manual, whenever the word "he" is used the reader may infer "she" when appropriate.

## A. FLIGHT SCHEDULING AND MEMBER RESPONSIBILITIES REGULAR

### OPERATIONS: WEEKEND AND WEDNESDAY HOURS

	Sat & Sun.	Wednesdays and Fridays
Mornings	09:00	
	10:00	
	11:00	
Afternoons	12:00	12:00
	13:00	13:00
	14:00	14:00
	15:00	15:00
	16:00	16:00

Please note that work crew and pilots must arrive at the field 1/2 hour before their scheduled duty or flight in compliance with A.4.b. below. Flying after 5:30 p.m. (1730) may be conducted if a pilot makes arrangements for a ground crew of at least one member to remain on the field. The last flight of any operations must land by sunset.

#### A.2 FLYING OUTSIDE OF THE REGULAR OPERATING SCHEDULE

Members may schedule flying of club aircraft anytime that does not conflict with the regular operating schedule provided a minimum crew (See Section D) is obtained and normal operational limits are respected. To prevent conflicts, the proposed schedule must be coordinated with the Flight Operations Chairman, or his/her designated weekday coordinator.

#### A.3 RESERVATIONS

To be placed on the schedule, members should go to <http://schedule-now.net/login.php>

TUSC

Login: ORGANIZATION ID - TUSC

If you don't already have a password, contact the Club Webmaster or Secretary.  
If you need instruction, schedule instruction to match the time scheduled in the glider.  
If extra time with an instructor is likely to be required (for instance, when arranging for a BFR) call the instructor well in advance to ensure that sufficient time will be available.  
Make only one reservation per day. If the schedule is already full, you may check with the Line Chief on the field about availability of any resource due to cancellation or no show. Also additional flights during the day often can be accomplished by placing your name with the Line Chief on duty as a pilot on standby.

Reservations may be made up to 60 days in advance but only one per week, to a maximum of 3 reservations held at any one time except that after Wednesday midnight of any week an available instruction slot may be scheduled for that weekend in addition to any 3 already held. In this case, back to back reservations are allowed.

- g. The pilot of a privately owned aircraft is advised to arrive early enough to coordinate with the Line Chief on duty to achieve a desired launch time. If timing is especially important, a call to the Line Chief a day before the launch may help the Line Chief work the launch into the schedule at or near the desired time. It is the pilot's responsibility to establish the necessary lines of communication with the Line Chief but the actual time available for the launch remains at the discretion of the Line Chief.

#### A.4 FLYING ORDER

- a. Scheduled dual instruction has priority during the morning periods. As much as possible, schedule your guest flying for later in the day. However, pattern tows may be denied or postponed after 11:30 If other ships are waiting.
- b. Members holding reservations have priority to fly in the order scheduled, provided they check in with the Line Chief ½ hour prior to the scheduled time. Members who fail to check in with the Line Chief on Duty ½ hour before their scheduled launch time may lose the reservation at the discretion of the Line Chief especially if other pilots are standing by for the glider. It is the pilot's responsibility to make his/her presence and intentions known to the Line Chief. When in doubt, come early or if possible call ahead.
- c. Introductory flights for casual drop-in guests, including Gift Certificate guests, may be scheduled on a first-come basis established by the Line Chief, but in such a way as not to cause undue delay to waiting members. When in doubt, the Line Chief should always decide in favor of the member.
- d. Launch order of all sailplanes is determined by the Line Chief. He will take into consideration factors such as first-come, readiness to launch, type of tow, cross country and badge attempt requirements, etc. and will use his judgment to keep operations moving smoothly. If a pilot or plane is not ready to go when it is their turn they should expect to be asked to surrender their priority to the next in line without delay.

#### A.5 FLIGHT DURATION

The normal time allotted to a scheduled local flight is one hour. Longer or multiple flights may be authorized by the Line Chief when the schedule permits. Shorter flights may be required by the Line Chief when operations are behind schedule or for other reasons at the Line Chief's discretion. Any tow may be denied at any time at the discretion of either the Line Chief or tow pilot.

#### A.6 SOME Do's And DON'TS

Adherence to the following precepts will make the conduct of club flight operations as smooth as possible. The rules have been stated simply and do not cover every contingency. Individual problems usually can be solved in a sportsmanlike manner using common sense and good will. However, in any specific situation, the Line Chief's decision is final.

Please DO read and remember the rules. Please DO NOT SHOW UP LATE AND EXPECT ACCOMMODATION. Please DO cancel your reservation if you cannot make it Please DO NOT fail to check in with the Line Chief on duty. Please DO arrive early and help with operations. Please DO NOT forget that soaring is a cooperative effort. Please DO stay late to assist if requested by the Line Chief.

#### A.7 FINANCIAL RESPONSIBILITY :

See Bylaws

#### A.8 NO SHOWS

Club members who do not fulfill their assigned duty will take the next scheduled duty of the member who replaced them, or if not replaced, the next open duty slot within the member's qualification. In either case, the member **will be grounded** until he pulls the make-up duty and is reinstated by the operations committee. Repeat violations will be addressed by the Board with progressive penalties up to and including expulsion.

#### A.9 RESPONSIBILITIES of MEMBERS for CARE of EQUIPMENT

Safety is our number one priority. Providing low cost soaring is a secondary, but major goal of TUSC. To attain this goal requires responsible attitudes and behavior by each member in order to reduce overall costs of all members.

- a. Each member is responsible for the care of equipment during his use of it, from the time he preflights it to the time he turns it over to another member, ties it down, or stores it Pilots shall wash aircraft before first flight of the day and shall wipe bugs from glass ship wings after the last flight of the day.
- b. Each member using the equipment, be it a sailplane and its installed instruments, radio, etc., or auxiliary equipment such as a battery or a barograph from club storage, must strive to return It in the same (or better) condition than that in which he received it. Minor repairs or improvements may be made within the individual's competence.
- c. Malfunctions and damage must be reported to the duty Line Chief **and** to the Maintenance Chairman by phone within eight hours. Damage to aircraft must also be reported by phone to the Flight Operations Chairman.
- d. In the event of loss or damage the pilot should actively participate in repair, replacement, or restitution, to any extent required.
- e. As stated in the Bylaws (Article XV, Section 7) a member may be assessed for up to the deductible uninsured cost of accidental loss.

#### A.10 SAFETY OFFICER

While safety considerations are every member's responsibility, the Safety Officer is responsible for overall club safety. He may refine policies and practices found in all club activities. He may temporarily ground a member for safety reasons until the action is reviewed by the Flight Operations Chairman or any number of persons appointed by the President, for this purpose, with the consent of the Board of Directors. The appointees will be directed by, and is responsible to the Board.

The Safety Officer conducts ongoing reviews of club activities and operations. Whether in the areas of flight training and operations, equipment maintenance, or ground traffic and airfield facilities, he will work closely with and through the responsible club officers and chairmen. He is available to these and other members for consultation on safety matters, to conduct studies and investigations, and to make recommendations for improvements. In the event of question as to the best course of action, the matter will be presented to the Board of Directors for resolution however, on the field, the Safety Officer's word is law and can be overruled only by an action of the Board of Directors.

#### A.11 CHIEF FLIGHT INSTRUCTOR

The Chief Flight Instructor is appointed by the Flight Operations Chairman in collaboration with the President. The Chief Flight Instructor has the authority to set up a syllabus of training to be followed during the indoctrination, initial training, licensing and continued recurrent training of pilots, including annual and biennial flight reviews.

It shall be the responsibility of the Chief Flight Instructor to ensure that the individual instructors are adhering to the program of instruction in an effort to achieve the greatest degree of safety and standardization. He **will** monitor the progress of students as a means of checking that the syllabus is, indeed, being followed.

The Chief Flight Instructor shall designate Club Instructors. Having a CFI-G does not ensure designation as a Club Instructor. All instruction flights in club aircraft intended to satisfy FAA requirements must be conducted by a Club Instructor.

The Chief Flight Instructor shall designate Club Trainers. Club Trainers do not need a CFI-G rating to perform training not intended to satisfy F.A.A. requirements. Club Trainers may provide specialized training such as aerobatics or cross country flying.

The Chief Flight Instructor may perform whatever actions he thinks are necessary to ensure that training is safe and standardized according to the club's training syllabus. This may include: taking unannounced evaluation rides with instructors and students, observing instructors pre and post flight briefing, reviewing student training records and log books, and taking appropriate corrective action.

In cases where a member has been grounded for actions adjudged to be careless, negligent or in some fashion prejudicial to safe and economical operation of club equipment, It shall be the responsibility of the Chief Flight Instructor to assess the situation in concert with the Safety Officer and/or the Operations Committee Chairman and decide the extent and type of remedial training for the member, what restrictions should be imposed, for how long, and at what point he may be released for flight. In the event of a material disagreement on the best course of action the Board of Directors will be the final arbiter.

If and when a member must be grounded for the third time for similar reasons, the member can and will be required to appear before the Board of Directors to answer why he should not be asked to resign from TuSC. Reference also, Article XI Section 6, TuSC Bylaws.

When a pilot has been grounded, for actions judged to be careless, negligent or in some fashion prejudicial to safe and economical operation of club equipment, the Chief Pilot, Safety Officer, President and Flight Operations Chairman must be notified immediately, by the person executing the grounding. In addition, an annotation must be made on the Pilot Qualifications sheet.

The following procedure presents the club policy for handling groundings.

In the future, if any line chief or instructor observes a dangerous act that in their opinion needs to result in a pilot, student pilot or any other club member being grounded, that individual must immediately tell the person they are grounded. Within the next 24 hours, an email shall be sent out to the Chief Pilot, Safety Officer, President, Flight Operations Chairman and the grounded pilot that documents the incident and or behavior in question. This email will include, if applicable, an assessment of damage, including photo documentation, and a list of witnesses observing the incident and or behavior in question.

The Safety Officer shall gather statements from all witnesses, the pilot in question and produce an initial report within 48 hours of the receipt of the email documenting the incident. The Chief Instructor or his designated representative, will then meet with the pilot in question, to establish a course of action required to remove the grounding and return the pilot to active status as soon as practical.

#### A.12 CHIEF TOW PILOT

The Chief Tow Pilot shall be chosen by the Flight Operations Chairman. He shall be responsible for giving annual tow pilot checks and for training of new tow pilots, though he may delegate some of these activities from time to time. (Each individual tow pilot, however, is responsible for his own currency and legal status both within the TuSC and with the F.A.A.) The Chief Tow Pilot Is responsible for general matters relating to tow pilot organization, training, and policy. He shall coordinate these efforts with the Flight Operations Chairman and with the Board of Directors when necessary. (See V.6 Pilot Responsibilities)

## B. CURRENCY REQUIREMENTS

### B.1 MINIMUM CURRENCY REQUIREMENTS

Members in good standing (see Bylaws) are considered to be current in club aircraft, and therefore eligible to schedule and fly solo provided:

- a. As student pilots they:
  - 1.) have been authorized (certificate endorsed) by a TuSC Instructor to solo that type of sailplane. After the first solo flight the instructor must evaluate that flight with the student before a second solo is made. Each solo flight must be authorized by an instructor on the field at the time of launch.
  - 2.) have had a dual flight with an instructor properly recorded in their logbooks within 60 days prior to their scheduled flight
- b. As certificated power pilots they:
  - 1.) have received flight instruction in the pilot operations required for that type of aircraft, have previously soloed and logged pilot in command time in that category and class of aircraft, and have been authorized (log book entry) by a TuSC instructor to solo that aircraft in the local area,
  - 2.) maintain currency by making at least one solo or dual flight every 60 days 3.) have satisfied the club requirements for an annual proficiency check ride (APC). 4.) have a current FAA biennial flight review (BFR).
- c. As certified glider pilots, they have;
  - 1.) have been authorized to solo that type of sailplane in accordance with Federal Air Regulation, have received a local field check with a TuSC instructor, and
  - 2.) maintain currency by making at least one takeoff and landing every 60 days, and
  - 3.) have satisfied the club requirements for an annual proficiency check ride ( APC). (see also B.4)

### B.2 LOG BOOKS

All pilots may be required to present their log books as evidence of meeting currency requirements. Student pilots will carry their log books on all flights. All Pilots without medical certificates must have the appropriate log book entry.

### B.3 PASSENGER-CARRYING

Passenger carrying requirements are as stated in Federal Air Regulations (FAR 61.57). Additionally, passengers may be flown from the rear seat of Club aircraft if the Member has:

- 25 PIC flights in type,
- Back seat training to acceptable and safe proficiency under an instructor's supervision. This authorization will be noted in the member's logbook.

NOTE: The number of required PIC flights in a specific type of aircraft may be waived for rear seat qualification depending on the pilots experience, demonstrated proficiency, and the discretion of the flight instructor.

#### B.4 ANNUAL PROFICIENCY CHECKS

All FAA-certificated pilot members (Private Pilot-Glider or higher) who fly club equipment, regardless of other FAA flight review requirements, (see FAR 61.56, 61.57) will complete an annual proficiency check on or before the last day of the twelfth month following the month of the last TuSC annual proficiency check, or the month of the last FAA certification test in gliders. The annual proficiency check (APC) will consist of an oral review of selected portions of these TuSC standard operating procedures and FAR Part 91 pertaining to gliders, and a flight demonstrating proficiency to the standards of the rating held (Private, Commercial, etc.) The log book entry attesting to the check (APC) completion will indicate that it is a TUSC Annual Check, or the Biennial Flight Review if required.

TuSC annual proficiency checks will be scheduled by members with club flight instructors. Dual student instruction takes priority on the morning schedule. It is advisable therefore to schedule the annual proficiency checks when two instructors are available, or by appointment with an instructor for a scheduled aircraft and period, perhaps later in the day.

All member pilots flying private (non club) aircraft must provide proof of currency according to F.A.A. regulations and proof of liability insurance in an adequate amount upon request from an appropriate authority but they are not required to complete an APC solely for the purpose of flying a private aircraft.

Failure to complete the annual proficiency check and/or BFR by its due date will result in grounding the member from use of the club's equipment, including receiving tows. Records of completion of check rides are annotated in the member's logbook. The member is also responsible for annotating those dates on the currency roster posted at the Schedule-now web site in a timely fashion.

### C. INSTRUCTOR-STUDENT RELATIONSHIP

It is not intended that the student, whether power-plane rated or not, should fly with only one instructor. In fact, the student should be encouraged to fly with several instructors. For purposes of coordinating a system of instruction, however, each new student will be assigned an instructor who will endeavor to accomplish the following:

Provide initial orientation/training record.

Provide license information and pre-solo FAR exams.

Fly with student periodically not exclusively.

May authorize solo (though any instructor may).

Review training progress (including FAA written exam.)

Monitor currency to fly.

Checkout student in different sailplanes (not exclusively).

Prepare student for written and flight check; recommend the same.

Administer or ensure proficiency flight checks.

Make all appointments with FAA authorities.

The student will arrange for a basic pilotage orientation or power cross-country flight with a power pilot familiar with glider cross-country.

Club instructors will be assigned on approximately 1:6 ratio of instructors to students.

## D. MINIMUM CREW

### D.1 OPERATING RESTRICTIONS

Flying operations will not be conducted with less than the minimum required crew without the express approval of the Flight Operations Chairman or Chief Instructor. Minimum crews consist of:

a) Aero Tow:

- 1) Line Chief
- 2) Tow Pilot
- 3) Timekeeper (Line Chief may perform this function when the schedule is light)

b) Car Tow:

- 1) Line Chief
- 2) Vehicle Driver
- 3) Vehicle Driver Safety Assistant
- 4) Timekeeper (Line Chief may perform this function when schedule is light)

c.) Winch Tow:

- 1) Line Chief
- 2) Winch Operator
- 3) Cable Retrieve Driver (may also act as Line Chief)
- 4) Timekeeper (may be combined with Retrieve Driver)

### D.2 FLIGHTS BY CREW MEMBERS

Members performing ground crew duties may be placed on the standby flying schedule provided a qualified substitute is designated by the Line Chief.

### D.3 PILOT ASSISTANCE

At least one ground crew member shall remain to assist sailplane pilots at the end of their flights, or more as required by the Line Chief.

### D.4 DUTY SUBSTITUTIONS

Members who have been scheduled for crew duty but are unable to meet the schedule are responsible for obtaining their own substitutes and making the necessary changes to the schedule at Schedule-now, the Club's web site. In the case of a last minute change, it may be necessary to notify the Line Chief by phone or through another crew member. Failure to show or provide a qualified substitute will cause the member's name to be entered on the Timesheet and the Line Chiefs Report as a NO SHOW. Club members who do not fulfill their assigned duty will take the next scheduled duty of the member who replaced them, or, if not replaced, the next open duty slot (within the member's qualification). In either case, the member will be grounded until he pulls the make-up duty (see A.8). Repeat violations will be addressed by the Board with progressive penalties up to and including expulsion.

## E. LINE CHIEF DUTIES

### E.1 MORNING AND WEEKDAY LINE CHIEF

a) A morning Line Chief shall, prior to the day scheduled for duty, check with his other crew members as a reminder, and, in a timely fashion, obtain the schedule for **all day** from the Schedule-now web site. He will contact his crew and the scheduled pilots as he sees fit with essential information or instructions as conditions warrant. In general, the Line Chief may expect the scheduled pilots to arrive and make contact a minimum of 30 minutes ahead of their scheduled launch.

b) The morning Line Chief will arrive at least 1/2 hour early to **supervise:**

- 1 Getting equipment on the field, including hand held radio, tow ropes, timekeeper case, and, if necessary, marker cones, and barrier landing equipment.
- 2 Preparing sailplanes (two-place). Ensuring clean cockpits, canopies, and a pre-flight including **positive control check** and plane washing before the first flight (seeA.9a.) Scheduled pilots shall install radio batteries and microphones, check radio and transponder settings and top off oxygen as required.
- 3 Determining active runway (in concert with instructor and/or tow pilot).
- 4 Transporting sailplanes to launch point. Should sailplanes need to be ground towed, having qualified drivers and wing walkers.
- 5 Prior to first launch, calling Radar Approach Control (TRACON) and informing the duty supervisor of times of operation and expected maximum height of lift.
- 6 Checking maintenance squawks to ensure against launching a malfunctioning aircraft.

Note: Morning shift for Line Chief, Time Keeper and Tow-Pilot ends at 13:00 sharp. Afternoon crews should arrive 15 minutes before the start of their shift to be briefed by the person they are relieving.

### E.2 ALL LINE CHIEFS

a. Take Off:

- 1 When gliders are waiting, the Line Chief should see that the glider occupants are fully ready to launch at the staging area before the arrival of the tow plane.
- 2 If the scheduled pilot is not ready to launch at the appropriate time, that launch may be delayed in favor of other ships, which are ready to go, in order to promote operating efficiency.
- 3 The Line Chief shall designate a ground crew for each launch (only one person signaling), and, after **checking the pilots harness and canopy**, shall follow the attaching rope and take-off procedures.

b. Landing

The Line Chief shall watch pattern traffic and alert those on the ground to incoming traffic in a timely fashion.

The Line Chief shall have the landing aircraft cleared from the landing area and secured as quickly as possible.

c. General.

1. The Line Chief (LC) shall check the release hooks on each sailplane (and towplane) at the first flight of the day.
2. The LC shall alert pedestrians to 26R (and any other) landing traffic.
3. The LC shall check student log books for currency status.
4. The LC shall determine that each sailplane has had a positive control check before the first flight of the day.
5. The LC shall inspect the tow ropes frequently, discard or supervise repair, as necessary, and maintain at least two replacement ropes at the launch site.
6. The LC shall arrange flights in order to promote efficient utilization of the equipment and facilities, and may restrict tows to 2,000' AGL when necessary to expedite launches. The LC may limit flights to 45 minutes or less when necessary to maintain schedule.
7. When in doubt of a pilot's currency or qualifications The LC shall require proof.
8. It is the LC's responsibility to report low approaches or other hazardous activity to the Flight Operations Chairman, and/or the Safety Officer and to immediately take any and all actions necessary to maintain a safe operation.
9. The LC shall terminate flying operations when the winds exceed 30 mph, or crosswind components exceed the club's or ship's limits. (see L.7)
10. The LC shall ensure that pilots secure all unattended planes, lock canopies, chock wheels, and secure tie-downs as circumstances require.
11. The LC shall have full authority over car parking, visitors and their pets.
12. The LC (when time permits) shall act as official host and representative of our club, and encourage prospective members and guests.
13. When assigned an assistant Line Chief, the LC shall endeavor to instruct the assistant in these duties and their practical application.
14. The LC may fly or leave the takeoff area only if a qualified substitute is available and agrees to take over. Qualified substitutes should be listed at the field.

15. The LC shall fill out a Line Chief Report form at the end of his shift.
16. The LC shall check that all necessary papers are filled out and signed for any recipients of TuSC's guest ride or three ride packages.
17. When inclement weather, equipment malfunction, or other circumstances preclude the conduct of flight operations, the LC, in consultation with the tow pilot and instructor, will cancel flying for that flight period (a.m. or p.m.). The LC shall not make a weather related cancellation from any site other than the airfield. At the earliest opportunity, the LC will telephone affected pilots and crew of the cancellation if possible. Should conditions for cancellation appear to extend to the next period, the next LC should be advised in order for him to take timely and appropriate action.
18. The LC shall efficiently organize others. For the most part, the LC is responsible for seeing that the jobs get done, not actually doing them himself. While on duty, the LC has authority over all activities on the field (subordinate only to the Flight Operations Chairman and the Safety Officer) with a mandate to maintain the safety and efficiency of the scheduled flight operations and administrative duties,
19. In the event of a hard landing or any other situation where damage to an aircraft may be suspected to have occurred it is the responsibility of the Line Chief to thoroughly examine the aircraft to ensure its airworthiness to the best of his ability and if warranted, to call upon experts for further evaluation.
20. The LC shall notify the maintenance chairman of damaged or malfunctioning aircraft within 8 hours by phone. The LC shall note all known maintenance problems on the maintenance sheet in the club house.
21. The LC shall put a red tag on the grounded aircraft or otherwise clearly mark it to indicate that the aircraft may not be flown until the aircraft is inspected by the Maintenance Officer and returned to service. The red tags should be stored in the club house on the shelf above the briefcases that contain the logbooks.
22. The LC shall arrange for his own qualified substitute and duly note the change on the Duty Schedule at Schedule-now if the scheduled duty assignment cannot be met.
23. Each Line Chief shall review the "Line Chiefs' Book" kept in the Clubhouse. Tabs include the current duty roster, a section of new information and procedures, a recent copy of the Check Ride Currency Roster, a list of members who have been grounded by the Board and a copy of the Club Standard Operating Procedures. Line Chiefs should initial by their name on the duty roster to indicate that they have reviewed the book.
24. All aircraft operating from El Tiro should carry an operating radio and monitor 123.3 Mhz for safety and communications. To operate without a radio the Line Chief must specifically waive this requirement in that instance, based on circumstances and his discretion

### E.3 AFTERNOON AND WEEKDAY LINE CHIEFS

The afternoon Line Chief shall arrive in time to continue operations at 1:00 PM on weekends and to commence operations at 12:00 for Wednesday afternoon.

The afternoon Line Chief generally is responsible for closing down operations and seeing that the facility is secure. The LC may direct the crew to assist in these chores. The LC, the timekeeper, and the last pilot to fly a particular aircraft are the minimum personnel to accomplish this, The LC may alter arrangements and assistance as the LC sees fit.

The afternoon LC will check the condition of the planes and report any unusual condition or damage by phone within 8 hours to the Maintenance Chairman. He shall ensure that the next day's Line Chief knows about maintenance problems (e.g. note in aircraft, or phone call).

The afternoon LC will ensure that **all** the aircraft are appropriately hangered or tied down in the best manner for the following day's expected activities. Gust locks are to be in place and the control sticks tied. All canopies are to be locked and covered, where applicable.

The afternoon LC shall ensure that the batteries, barographs, oxygen masks, parachutes, microphones, and other loose equipment are returned to their appropriate locations.

The afternoon LC shall see that the tow pilot has assistance putting away the tow plane.

The afternoon LC shall be responsible for maintaining the sailplane logs.

The afternoon LC will return the hand held radio and telephone to the charging station for charging; making sure the locker is locked.

The afternoon LC shall be responsible for placing battery packs on the charger, He shall fill out the Line Chief Report form.

The afternoon LC shall ensure that the hangar doors and club house are closed, locked and secure, lights off, and gate chain secured.

The Sunday afternoon Line Chief is responsible for seeing that the daily log sheets, checks, money and tow pilots' logs for the week (Including Wednesdays pouch if it is still at the field) are delivered to the treasurer on Sunday evening.

### E.4 MORNING ASSISTANT LINE CHIEF

Duties include, but are not limited to:

- Checking all batteries.
- Placing all low batteries on charge.
- Setting up base radio stations.
- Cleaning canopies.
- Straightening up operations building.

## F. TIMEKEEPER DUTIES

Since flying fees provide much of the club income, it is most important that timekeeper duty be done well.

### F.1 DAILY TIME SHEET

The timekeeper is responsible for:

1. Completing the daily time sheet and entering the hours in the AC logs.
2. Collecting and recording any money received.
3. Recording the release altitudes radioed in from the tow pilot for each tow and collecting the tow pilot's log at the end of the shift to confirm the altitudes recorded on the time sheet.
4. Arranging for the transfer of all the above to the treasurer.

Note: Saturday's time sheet, tow log, and revenue may be left in the timekeeper case and combined with Sunday's.

### F.2 SUBSTITUTIONS

If you cannot make your scheduled duty period as timekeeper, you are responsible for finding your own substitute and duly noting the change on the duty schedule at Schedule-now. In the case of a last minute change, you should notify the Line Chief directly.

### F.3 FLYING DURING DUTY

This may be done only with permission of the Line Chief. If you fly during your timekeeping period, assign a qualified member to substitute during the period of your flight. Flying during your working period should be considered only if it imposes no overload on the Line Chief or others, and all necessary steps have been taken to ensure the accuracy and security of the time sheets etc.

### F.4 ADDITIONAL DUTIES

The morning shift begins at 9:00 am. Afternoon shift begins at 1:00pm on weekends and 12:00 pm on Wednesdays.

Arrive in time to assist the Line Chief in setting up operations and assist the Line Chief in all facets of the operation during your shift. Take this opportunity to become familiar with other aspects of the operation and especially Line Chief Duties.

Assist the Line Chief in the role of hosting visitors, guests, and new members. Ensure that all necessary documents are signed by TuSC guest riders and Three Ride Package recipients.

Assist the Line Chief in the closing down operations at the end of the day.

## G. AIRPORT GROUND RULES

As there is much pedestrian traffic between the shade hangar and the staging area for runway 26, pedestrians should take great care when crossing this area and **all pilots** should stop short of this area when landing on 26 right even when intending to put a glider away under the shade hangar.

### G.1 GROUND VEHICLES

Vehicles shall be kept off **all runways** except as authorized by the Line Chief. Members who pay for hangar space may park their cars in that space.

### G.2 SPEED LIMITS

Speed limits of 15 mph on airfield areas and 5 mph on aircraft parking aprons should be observed.

### G.3 OBSTRUCTING RUNWAYS

Guests should be informed of routes to take to operating locations and should be guided or adequately instructed about all hazards especially active runways and landing aircraft. No vehicle should park in the path of a landing or takeoff area.

## H. GROUND HANDLING SIGNALS AND RULES

### H.1 MOVING SAILPLANES

Sailplanes may be moved at walking speed using the tow hook and a vehicle, providing the tow rope is at least the length of half the wingspan. A wing walker balances the windward wingtip and clears all obstacles. Another helper may station himself at the empennage, next to the fuselage, or at the other wingtip in gusty conditions. Vehicle and sailplane will avoid obstructing the path of any moving aircraft.

### H.2 TIE-DOWNS

No sailplane should be left unattended without tying or weighing down at least one wingtip. Wherever possible, the sailplane will be secured with the windward wingtip down.

### H.3 TOW PLANE SIGNALING

- a. Line Chief will, by rotating his hand in a circular motion overhead, signal the tow pilot to start engine. Tow pilot procedures are stated separately.
- b. Signaler should locate himself in full view of the tow pilot's rear view mirror (usually left of the center of the runway).
- c. Line Chief should **never** give take off signal before he has seen both tow plane and glider fan their rudders.
- d. Line Chief should check for traffic before giving take off signal.
- e. Line Chief will confirm correct tow plane configuration and readiness for T/O.

### ATTACHING TOW ROPE

The Line Chief and assistant will check sailplane and tow plane release at least at each ship's first flight of the day.

The tow rope will never be attached to the tow plane without tow pilot's permission.

The tow rope will never be attached to the sailplane until the pilot is in his seat, has his harness fastened passenger (if any) and his canopy secured and indicates that he is ready for hook up.

Pilot will release tow rope **before** he prepares to leaves the cockpit for any reason. The Line Chief will verbally and visually check that the canopy is in fact latched and secure before giving "takeoff" signal.

J. TAKEOFFS  
J.1 AERO TOW

- a. Line Chief or assistant will advise tow pilot of tow altitude.
- b. Line Chief will ask if pilot is ready for hookup then will attach tow rope to sailplane, verbally and visually ensure sailplane's canopy is securely latched, determine that sailplane occupants are secured and ready and, on signal from pilot, level wings. Standing behind the wing. Line Chief will signal tow pilot to take up slack by waving one arm back and forth extended below the waist.
- c. Tow pilot will take up slack slowly after wings are **leveled** and he is given the take out lack signal by the Line Chief. Tow pilot will stop when Line Chief signals by holding one or both arms extended above the head or when tow pilot observes that rope slack is taken up.
- d. When slack has been taken up, the Line Chief will visually clear takeoff area and approaches.
- e. Tow pilot, when ready to go and after checking that sailplane's wing is level, will fan rudder to indicate the tow plane is ready to go. Upon seeing tow plane's signal sailplane pilot will signal back that he is ready to go by fanning his rudder.
- g. A wing runner (the Line Chief or assistant) will be stationed at the wingtip during takeoff to gently assist the pilot in maintaining his wings level during the first few yards of the takeoff roll. In the case of a crosswind takeoff, the wing runner should choose the upwind wingtip and endeavor to keep it slightly lower than the downwind wingtip while running the wing.
- h. Line Chief will signal to the tow pilot that he is **CLEARED FOR TAKEOFF** by rotating an extended arm or flag in a motion describing a full circle to the tow pilot. Tow plane may begin takeoff roll.
- i. Wing runner will neither push nor hold the wingtip back when running. He will only support it until full aileron control is gained from the cockpit.

J.2 AUTO TOW

Signals to be used should be discussed before beginning with each launch crew.

Driver or assistant attaches tow rope to car after testing release.

Tow car takes up slack when signaled by Line Chief or his assistant and stops when signaled to stop.

When pilot indicates that he is ready Line Chief or assistant connects tow rope to the sailplane then signals car to take up any remaining slack.

- c. Steps for aero tow launch (J.1 d through l) are repeated except that tow car driver will signal readiness to go by blinking tail lights a pre arranged number of times (acceptable alternative signals such as closing of car doors may be used if agreed beforehand) Car will begin tow only when sailplane wing is level and rudder has been fanned and Line Chief gives the CLEARED FOR TAKEOFF signal (see J.1 h above). Car tow speed will be as agreed with pilot prior to launch.
- d. When airborne, should the sailplane require more tow speed, the pilot will signal by rocking wings. Should less speed be required, the pilot will signal by fish-tailing. The placard tow speed of the sailplane will not be exceeded by pilots prior to release.
- e. The safety assistant in the tow vehicle will keep the driver informed of launch progress, releasing the cable tow rope after glider release on reaching the end of the run.
- f. The tow car will remain clear of the landing area until the sailplane is on the ground.

## K. SAILPLANE ON AERO TOW

### K.1 TOW PATTERN

Tow plane normally will make shallow bank 90° alternating turns with students. With advanced pilots tow plane may start turns to right when encountering lift above 1,000 feet AGL, so as to gain altitude in the least time.

### K.2 STEERING TURNS AND BOXING WAKE

Steering turns may be practiced above 1,000 ft AGL. Sailplane pilot will move in normal (high) tow to side opposite of desired direction of turn Lateral displacement should be Just sufficient to alert tow pilot without being excessive Tow pilot will wait 5 to 6 seconds, then start turn, holding until sailplane moves back to normal position, at which time he rolls out and resumes straight flight Boxing the prop wake will be initiated by the glider first going through the wake into low tow positron from high tow

### K.3 RELEASE

Upon reaching desired altitude, the sailplane pilot will clear the area and release from normal high tow position. Enough tension should be maintained on the tow rope to affect a firm release, alerting the tow pilot that the sailplane is off tow. A "soft" (little or no tension) or "hard" (causing rope to knot and snarl) release should be avoided. After checking that rope is falling free, the sailplane will make a right climbing turn. With safe separation in mind, tow plane pilot, after assuring sailplane has released, and observing the turn away by the sailplane, will descend to the left.

#### K.4 EMERGENCY SIGNALS AND ACTIONS

AN EMERGENCY RESPONSE CHECKLIST SHOULD BE POSTED AT THE FIELD. BECOME FAMILIAR WITH ITS LOCATION AND CONTENTS. IT CONTAINS CONCISE DETAILS ON WHAT TO DO IN CASE OF A CRASH OR OTHER EMERGENCY.

- a. If the Line Chief makes a cutting motion across the neck. This is the emergency release signal on the ground. Sailplane pilot and/or Tow Plane pilot should release the tow rope. If no glider is hooked up this signal tells the tow pilot to shut off the engine.
- b. If the Line Chief waves both arms over head: This is the Stop Operations or emergency signal. The Sailplane wingtip, if raised, is immediately lowered - sailplane pilot releases the tow rope and tow plane holds.
- c. If the Line Chief directs planes to be moved off the runway: Tow plane releases tow rope, If attached, and also clears runway without delay. (Used when landing aircraft require the staging area for a safe landing).
- d. If the tow plane rocks wings in flight: Sailplane is required to release.
- e. When airborne, should the sailplane require more tow speed, the pilot will signal by rocking wings. Should less speed be required, the pilot will signal by fish tailing.
- f. If the sailplane flies wide to either side of tow plane, rocking wings, this is the signal that he cannot release. The glider will go to a high tow position. The tow plane will fly over the airport upwind parallel to the takeoff runway, at an altitude greater than 1,000 ft. AGL and release the sailplane. Tow plane may broadcast on unicom or other suitable frequency, advising other traffic of situation. The sailplane will approach high and land long, reducing the chance of snagging the tow rope.
- g. If the glider cannot release and the tow plane is unable to release the glider, the tow pilot will give a fish-tail signal. The sailplane will then go into low tow position. The tow pilot shall proceed to make a shallow descending turn to the traffic pattern and proceed for landing. The sailplane pilot shall maintain slack out of the rope with the use of spoilers. The sailplane should touch down first. During the landing roll, the sailplane pilot shall use brakes as required.
- h. Rope break: The sailplane pilot will pull the release knob **twice** to ensure dropping rope end. If time permits, this may be done over the home landing area. Tow plane, if rope break is suspected, will observe sailplane's return to the field. Tow pilot will announce rope break on the radio.
- i. If the glider's spoilers are open and extended during the tow, the tow plane will signal by rapidly fanning his rudder. Contacting the glider pilot on the radio may also be helpful.

## L. LOCAL AREA RULES

### L.1 PATTERN

Be familiar with traffic patterns. Be at a minimum of 800 ft AGL at IP and 200 AGL minimum on turn to final for a normal pattern. (see 5.2 a).

### L.2 LOCAL AREA

Remain within gliding distance of the field. Remember that between thermals there are frequently areas of strong sink. Pass through these areas using penetration speeds. In strong wind conditions do your local flying upwind of the field. Avoid flying north of the Santa Cruz River near Pinal Airpark, avoid conflict with their air traffic and parachute jumpers. Avoid the areas to the N.W. and S.E. of Avra Valley Airport where parachute and aerobatics activity (respectively) take place.

### L.3 OTHER AIRCRAFT

Watch for other aircraft: airplanes, sailplanes, balloons, large aircraft approaching Tucson International from the North, and frequent low flying helicopters. While sailplanes have right of way over powered aircraft, the latter are less maneuverable and, besides, the pilot may not see the glider. Give way. If so equipped, be sure transponders are on and properly set to 400 MHz.

### L.4 WEATHER

Be careful when flying around or under thunderheads. Avoid flying in dust devils at tow altitude. Beware of wind shear especially when in the landing pattern. Be familiar with appearances marking gust fronts and how far they extend.

### L.5 FLIGHT WITHOUT OXYGEN

Flights without oxygen will not be conducted above 14,000 ft. MSL, and limited to 30 minutes above 12,500 ft. Passenger flights higher than the above limits will be in accordance with FAR 91 .211.

### L.6 THERMALING WITH OTHERS

When joining another sailplane in a thermal, circling will be in the same direction as the first sailplane. Maintain frequent visual contact with other circling aircraft, particularly when other ships are at about the same attitude. During contests, all thermaling within five miles of the airport will be to the left.

## L.7 STRONG WINDS. CROSSWINDS AND STORMS

Any sailplane operation may be discontinued in stormy or gusty crosswinds at the discretion of the Line Chief or tow pilot. Observe the individual glider limits as listed in the Flight Manual. Until signed off by an instructor, students are limited to 10 MPH (9 kt) or less crosswind component and 15 MPH (13 kt) headwinds.

## L.8 AEROBATICS

Except for spins executed with an instructor, or aerobatic flight under the TuSC Aerobatics Program, aerobatics in club aircraft are prohibited.

Aerobatics, as defined by the FAR's are permitted in TuSC club aircraft as follows:

- 1) the aircraft must be certified for the maneuver to be flown and
- 2) the pilot must be certified for the maneuver to be flown by a TsSC-authorized "Aerobatic Instructor", who need not be a CFI-G, but may be experienced in aerobatics by participation in at least one International Aerobatic Club (IAC) contest at a minimum of the sportsman level. Conversely, a CFI-G is not presumptively an "Aerobatics Instructor" unless so authorized by the TuSC Chief Flight Instructor. In either case, the Aerobatic Instructor shall be authorized by the TuSC Chief Instructor on an as-needed basis.
- 3) Aerobatics shall follow a course approved by the TuSC BOD and updated as necessary by the Chief Flight Instructor. It shall include instruction on parachute safety, aircraft specific egress training, emergency procedures and unusual attitude training.
- 4) All aerobatics shall be flown in accordance with the applicable FARs and within the limitations of the Pilot's Operating Handbook (POH) of the glider to be flown.
- 5) Passengers on aerobatic rides must first comply with all of the parachute safety and egress training requirements set forth for pilots. They must also be schooled in advance of the maneuvers to be flown and have signed a club Hold Harmless Waiver.
- 6) Aerobatics shall be performed within the designated aerobatics box, north and east of the El Tiro Airport, with a hard deck of 1,500 ft AGL (3,600 ft MSL) under which no aerobatics are to be initiated, with the exception of "contest finishes" which shall be coordinated with the Line Chief and other traffic prior to execution.
- 7) The focused intent of the TuSC Aerobatics Program shall be **SAFETY** in exploring unusual attitude recovery and the advancement of piloting skills through exploring the glider's design flight envelope; as opposed to encouraging "hot-dogging". Because aerobatic flights utilize all three flight dimensions to a much greater extent than non-aerobatic flights, an active "See and Avoid" philosophy is mandatory to locate any aircraft that enters the aerobatic box during aerobatic maneuvers. The pilot must carefully clear the area prior to execution and constantly "keep their head on a swivel" as due to the nature of the aerobatic maneuvers, the aerobatic aircraft may present a profile to an intercepting aircraft that is essentially invisible. (Example: vertical nose up in the entry into a loop or a vertical nose-down attitude on the back-side of the loop.) Always clear and be aware of the airspace where you will be during and after the maneuver.

## L.9 OFF-FIELD LANDINGS

Should an off-field landing be unavoidable, before running out of attitude and time, the selected landing area should be examined, the pattern planned taking into account the surface wind and approaches, and the pattern airspeeds flown precisely. An off-field club assessment may be made after investigation of the circumstances. Other expenses will be as stated in the Bylaws.

## L.10 CONTEST FINISHES

Contest finishes may be made below pattern altitude by pilots practicing for or flying in local, regional or national competitions **ONLY IF PILOT HAS A WORKING RADIO AND FOLLOWS THE PROCEDURES** as defined in the current year SSA rules for the class of competition the pilot is practicing for or competing in.

### L.10.1 SHOW FINISHES

Show finishes may be made upon the completion of a Contest Finish by those pilots practicing for or flying in an SSA FAI class competition. Show Finishes are limited to non-club owned ships and shall not be done in club owned equipment.

- a. The pilot should be monitoring El Tiro frequency 123.3 in order to be aware of the traffic situation in and around El Tiro glider port.
- b. Announce at least four miles out on El Tiro ground frequency: time until finish and position. Example: "El Tiro traffic, this is UE 4 miles south for show finish. Request landing advisory."
- c. Announce 2 miles out on El Tiro frequency: time until finish and position.
- d. In no case fly in such a manner as to jeopardize a safe pattern.
- e. In no case fly a show finish over the airfield on the heading directly opposite the landing runway in use.
- f. In no case directly overfly buildings or people at low altitude.
- g. In no case fly below 50' AGL.
- h. In no case use runways 26R, 08L, 35R, or 17L
- i. No pilot may do a show finish at El Tiro, if they have not completed at least one (1) SSA /FAI sanctioned regional event or higher class FAI event. Or one (1) IAC sanctioned aerobatic competition
- j. Pilots must pay particular attention to safety during the process of finishing, landing, and rolling to a stop.

NOTE: El Tiro ground or other responding radio on the ground should immediately acknowledge receipt of the glider's transmission (L.10.1 a, b), say runway in use and wind direction (landing advisory), advise of other aircraft in the area then notify Line Chief.

## L.11 USE OF RADIOS

All aircraft operating from El Tiro should carry an operating radio and monitor 123.3 MHz, for safety and communications. To operate without a radio, the Line Chief must specifically waive this requirement in that instance, based on circumstances and his discretion. If the radio is inoperative or missing, the Line Chief will notify the radio committee by phone and by written notice on the radio discrepancy clipboard in the clubhouse. (See section R for radio use information.)

## M. SAILPLANE CHECKOUT REQUIREMENTS

### M.1 GROB

- 1 Student pilot certificate or better.
- 2 Read pilot handbook.
- 3 Complete open book questionnaire, corrected by C.F.I.
- 4 Logbook or card endorsement by TuSC instructor.

### M.2 SGS 1-34

- 1 Private pilot certificate or better.
- 2 Read pilot handbook.
- 3 At least 10 solo soaring flights in the Grob, not including pattern tows.
- 4 Complete open book questionnaire, corrected by C.F.I.
- 5 Briefing, cockpit checkout and logbook or card endorsement by a TuSC instructor.
- 6 Supervised preflight and launch.

### M.3 PW-5

- 1 Private pilot certificate or better.
- 2 Read pilot handbook.
- 3 A Minimum of 10 (ten) solo flights in another glider.
- 4 Pass a written examination on the PW-5, graded by an instructor.
- 5 Be checked out by an instructor on ground handling and a cockpit familiarization.
- 6 Fly with an instructor in a two-place glider and demonstrate incipient spin recovery and at least one full spin with at least one turn. This flight should be logged no more than 60 days prior to this checkout.

### M.4 PW-6

- 1 Private pilot certificate or better.
- 2 Read pilot handbook.
- 3 A Minimum of 10 (ten) solo flights in another glider.
- 4 Pass a written examination on the PW-6 graded by an instructor.
- 5 Be checked out by an instructor on ground handling and a cockpit familiarization.
- 6 Fly with an instructor in a two-place glider and demonstrate incipient spin recovery and at least one full spin with at least one turn. This flight should be logged no more than 60 days prior to this checkout.

## M.5 WAIVERS

Changes and waivers to the above may be made by the Flight Operations Chairman.

## N. CROSS-COUNTRY FLYING

The Tusc SOPs addressing cross-country flight in club ships and cross-country flights utilizing club assets and facilities are presented in the cross-country section of the Tusc website.

## O. TRAILERING

An established club group will periodically inspect the club trailers to ensure readiness to transport gliders.

### O.1 TOW VEHICLE

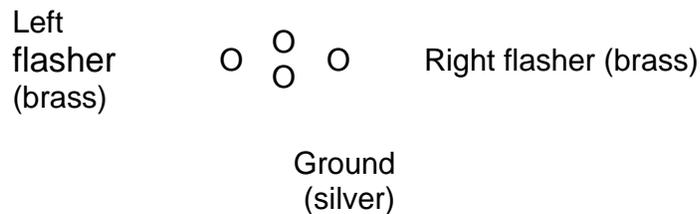
The tow vehicle shall be provided by members and shall have a minimum hitch rating of 2,000 lbs., and a 2" diameter towing ball.

### O.2 WIRING

Electrical connection shall be made so that the running lights, turn signals and stop signals are operating correctly. The wiring shall not be interfered with for this purpose. The recommended connector to be attached to the car is Standard Motor Part TC4IF, 7/16" diameter 4-way Pollack, or Cole-Herse female (car) and male (trailer). This component has three brass colored pins and one silver colored pin. The silver pin is ground, the one opposite is running lights. With the connector positioned with the silver pin downwards in the normal mounting position i.e., wires to the front of the car, then the remaining brass pin on the left-hand side of the vehicle is connected to the left flashers and the remaining brass pin at the right-hand side of the vehicle is connected to the right flasher. The similar Sears part should not be used. The pins are too small. Owners of Japanese cars may have trouble because the stop lights and flasher are often on different circuits. (See letters to the Editor, SOARING, September '73.)

Facing toward  
front of car from rear

Running Lights (brass)



### O.3 LICENSE AND REGISTRATION

The pilot shall verify that the trailer license and registration accompanies the trailer on all trips.

### O.4 ROAD CARE

The pilot shall be responsible for ensuring that the trailer (lights, tires, etc.) is maintained and returned in road worthy condition on all trips.

### O.5 SPEED LIMITS

The trailer shall be driven at safe and reasonable speeds compatible with local laws, weather conditions, type of trailer (open or closed), safety and well-being of sailplanes (delicate instruments, radio, etc.), capability of towing vehicle (brakes, weight, etc.) and handling properties of the vehicle combination.

### O.6 SAFETY

The pilot is responsible for the safety of trailer and sailplane. He will determine before using the trailer that it is in safe condition and that all necessary equipment is present and safely stowed. In the event of multiple pilot use (e.g. competition) the last pilot to fly the ship will be responsible for ensuring that the ship and trailer are ready to go for the next user.

### O.7 RECOMMENDATIONS

- a. Have two outside rear view mirrors (left and right).
- b. Hitch weight: minimum 50 lbs., optimum 75 lbs., absolute maximum 175 lbs
- c. Proceed with caution in restricted areas, especially when backing up. Jackknifing can damage the car and the trailer.
- d. Periodically check (every 50 to 100 miles) lights, hitch security, gust locks, trailer fittings, glider fastenings, etc.

## P. OXYGEN EQUIPMENT AND USE

### P.1 REQUIREMENTS

Supplemental tank-carried oxygen will be used by TuSC pilots when flying at altitudes that require its use. FAR 91.211, states that oxygen is required in flights above 12,500 ft. MSL exceeding 30 minutes. Additionally, oxygen must be used by pilots at all times from 14,000ft MSL and above. Above 15,000 ft MSL each occupant of the aircraft must have supplemental oxygen available. Members who contemplate flying at altitudes higher than those stated above are encouraged to attend a high altitude FAA-USAF physiological training course (See SSA Soaring Directory for details.) Attendance increases understanding and awareness of the hypoxia, which can greatly affect pilot capabilities at high altitudes.

### P.2 FLIGHTS ABOVE 18,000 FT. MSL

Flights in positive control air space, above 18,000 ft MSL, should not be attempted without a thorough review of procedures and equipment.

### P.3 SAFETY CONSIDERATIONS

- a. Keep grease and oil away from oxygen equipment, thereby avoiding a spontaneous explosive mixture.
- b. Keep masks clean before and after use. Do not fly with faulty equipment.
- c. Use proper tools in handling fittings - wrenches, rather than pliers.
- d. After servicing listen and inspect for leaks (soap solution is available if needed) before each flight. Monitor pressure gauge.
- e. Avoid standing high pressure containers upright. Lay them on their side. A fall may cause explosion or rupture.
- f. In flight at altitude be prepared by knowing your individual hypoxia symptoms. If symptoms occur, take prompt action to increase oxygen to your lungs.

#### P.4 SERVICING AND USE OF EQUIPMENT IN CLUB AIRCRAFT

##### a. GROB 103

High Pressure oxygen system with two oxygen tanks with manifold serving two A8A constant flow regulators and re-breather masks. Ensure that the aircraft oxygen bottle is full by opening the tank valve and observing the pressure gauge reading. Service the tank if the pressure is 500 psi or less. Check with the Oxygen System Person listed in the Thermal for oxygen tank filling operations checkout. Connect hose and mask to regulator and check that the regulator is set for NORMAL operation, NOT safety~ Make " PRICE" check: **Pressure, Regulator, Indicator, Connections, Emergency** (off). Leak check the connections. After flight, close tank valve, inhale from hose to reduce the line pressure to Zero.

    Servicing is through a quick fill port behind the head rest of the rear seat.

##### b. RESERVED FOR FUTURE AIRCRAFT

#### P.5 BAILOUT BOTTLES

These should be carried on all flights above 25,000 ft. MSL, connected to the mask hose fitting. They will provide approximately 5 to 10 minutes of "one shot" constant flow when "green apple" actuator is pulled. ONCE THE OXYGEN FLOW HAS STARTED IT CANNOT BE TURNED OFF. Before flight, check that bottle is serviceable by inspecting pressure reading, connect rubber hose to mask fitting.

Q. WINCH LAUNCHING

TuSC has no winch at this time and therefore these procedures are incomplete pending the acquisition of the appropriate equipment.

As with Aero tows, safe low cost winch launches are achieved by the teamwork of a ground crew and the pilot. The winch team includes the operator of the winch, a person who retrieves the cable and directs the launch, and the pilot when aero tows are being conducted at the same time as winch launches, the operation of the winch is coordinated with the Line Chief.

Q.1 PREFLIGHT

The Winch Operator is responsible for: TO BE DETERMINED

The Winch Launch Director is responsible for: TO BE DETERMINED.

The pilot is responsible for normal preflight of the aircraft to be used, including condition of C.G. hook, if so equipped.

## Q.2 PREPARATION FOR LAUNCH

### Q.3 THE LAUNCH

#### a. Clearing the field and launch signals.

No power aircraft should be past the launching point on downwind, base or final. (Airspace 1)  
No aircraft should be about to take-off. (Airspace 2) No aircraft should be on/in the pattern for the cross runways. (Airspace 3)

b. For launching, the phraseology shall be "Airspace 1, 2, 3 clear, Launch, Launch, Launch."  
No other phraseology shall be used. The pilot, launch director, or winch operator may cancel the launch. If cancelled, all clearing procedures must be repeated prior to renewing the launch.

c. Decreases in speed are requested by yawing the sailplane.

d. An increase or decrease of 300 rpm should result in 5 MPH sailplane speed changes.

e. **RELEASE:** When the pilot releases, the cable may snarl around the drum from the sudden release of tension. Reducing power prior to the sailplane release will help prevent this. As soon as the parachute opens you can begin winding in the cable. If the chute does not open immediately then all of the slack must be taken out of the cable before you can add power and begin winding in the cable at normal speed. In any case, if the chute lands some distance from you do not under any circumstances drag the chute through the desert wait for your retrieve people to disconnect the chute. **DO NOT PULL THE CHUTE THROUGH THE ROLLERS.** If the chute is going to drop right in the middle of the runway then there is no need to reel it all the way in. In all cases the chute should be allowed to drop well out in front of the winch

### Q.4 FLYING THE LAUNCH

a) Flying the winch launch is one of the easiest and safest means of getting airborne in a glider. The initial acceleration will be fairly quick. When you reach flying speed, smoothly and slowly ease the stick back. You should have 200-300 feet of altitude before the maximum climb angle of 45 degree is reached. If your glider does not have a C.G. hook you may not be able to get the stick all the way back without porpoising. If the aircraft porpoises at any time you will have to release some back pressure to eliminate porpoising. If you are near the top of the launch you may also have to signal for a speed reduction. When your rate of climb approaches zero you will feel the pull from the winch lessen. This is the time to release, after you nose over to level flight attitude. Reduce tension on the cable and pull release PMCE. When off tow make a medium turn to the north (at El Tiro) and ensure the cable is dropping away.

b) For procedures to solve problems related to over speed, under speed, porpoising and cable break consult your instructor. Always be alert and ready to take immediate action.

Q.5 CABLE RETRIEVE

Q.6 INFLIGHT EMERGENCIES

a. Cable break, chute failure or power failure.

1 Winch operation procedure:

2 Pilot Procedure: The remedy for any in-flight loss of power due to winch engine shutdown or cable break is PUSH THE STICK FORWARD, pull the release TWICE and prepare to land. (Consult your instructor for procedures for low altitude power loss.)

b. If the cable does not release from the sailplane, circle the winch until the cable releases or is cut by the winch operator.

## R. RADIO EQUIPMENT

### R.1 OPERATION OF THE CLUB RADIOS

- a. TuSC aircraft have several different types of radios with different characteristics. The ICOM radios require a fully charged battery for proper functioning. After the battery runs down partially, the radio will not function at all. A method that sometimes works to receive a weak or distant signal is to adjust the squelch full on, or the "test" mode used. This adds additional background noise, but can sometimes amplify the reception of voices to an audible level.
- b. Frequencies as of January 2005: all  
(MHz.)
  - 118.3 Tucson International Airport (TUS) Tower
  - 125.1 Tucson International Airport Approach Control
  - 119.4 Tucson International Airport Approach Control
  - 121.5 EMERGENCY
  - 122.1 Flight Service Stations (FSS) receive only on this frequency
  - 122.2 Prescott FSS Transmitter & receiver at TIA.
  - 122.4 Prescott FSS transmitter & receiver at Mount Lemmon
  - 122.6 Alternate FSS frequency
  - 122.8 Unicorn at some uncontrolled airfields (Bisbee, Benson, Wilcox etc.)
  - 122.9 La Cholla Mufti com and many others multi-coms
  - 123.0 Marana Regional (formerly Avra Valley) Airport Unicorn
  - 123.05 Pinal Airpark Traffic (Unicom)
  - 123.3 Sailplane to sailplane, tow plane or El Tiro ground. (Preferred at TUSC).
  - 123.4 Sailplane to sailplane, tow plane or ground.
  - 123.8 Tucson International Airport Terminal Information (AT1S)
  - 125.8 Ryan Field Tower
- c. To transmit - depress microphone switch and hold while speaking, release switch when not transmitting.
- d. After landing turn radio OFF unless reception while on the ground is desirable for safety reasons.
- e. After last flight of day, remove battery, place in battery room and hook up for charging as per poster instructions. Store microphone.

## R.2 RADIOTELEPHONE PROCEDURE AND PHRASEOLOGY

(See also Airman's information Manual, V.1.) The Call Up: "Tucson approach Control, this is sailplane Seven Eight Four Sierra, Over." The Reply: "Sailplane Seven Eight Four Sierra, Go Ahead." Message: State your message clearly and concisely, speaking at normal voice level and speed. Then end with "Over." Response "Sailplane Seven Eight Four Sierra...."

Acknowledge: "Roger, Eight Four Sierra."

Ending: "Eight Four Sierra Out."

## R.3 STANDARD WORDS AND PHRASES

Acknowledge. (Let me know that you have received and understood the message.)

Affirmative. (Yes)

Correction. (An error has been made in this transmission. The correct version is...)

Go Ahead. (Proceed with your message.)

How do you hear me? I say again (I will repeat the whole message.)

Negative (That is not correct)

Out (This conversation is ended and no response is expected.)

Over (My transmission is ended and I expect a response from you.)

Read Back. (Repeat this entire message back to me.)

Roger. (I have received all of your last transmission.)

Say Again Please. (Repeat your message.)

Speak Slower. Words Twice. (Repeat each phrase twice. Used when transmission is garbled or weak.)

## S. TRAFFIC PATTERNS AT EL T1RO

### S.1 TAKEOFFS

After reaching 200 ft. AGL on a straight climb the tow plane will usually make the first turn 90 degrees from takeoff heading. Alternating climbing turns will be made as required to position the sailplane upwind when possible and within gliding distance of the airport at all times during the tow. **Power flight over the homes to the NW. of the field should be avoided.**

### S.2 LANDINGS

#### a. Approach

Sailplanes will reach the initial point (IP) at a minimum altitude of 800 ft. AGL, 1/2 mile laterally and approximately 1,500 feet upwind from intended touchdown point (threshold of cross runway). Once in the traffic pattern, soaring will be discontinued and no turns made other than those required to fly the left-hand traffic pattern. Landings should be made with a left hand pattern onto the preferred runway in use as designated by the Line Chief and indicated by the tetrahedron. Runways 8 and 35 are designated right-hand patterns to avoid the residential area northwest of the glider port.

#### b. Runway Use

**A pilot may land on any runway using any pattern if safety considerations require that he do so.** Landings on alternate runways shall be made only:

- 1 if the preferred runway is occupied, or,
- 2 if landing on the preferred runway would constitute or create a safety hazard.
- 3 if the alternate runway is unoccupied and the landing is made with the knowledge and approval of the Line Chief, or,
- 4 if the pilot is training with an instructor, or,
- 5 on 26R, if he is doing repeated tows or if he is putting away an aircraft and has the knowledge and approval of the Line Chief . Solo students should not use 26R unless specifically instructed to do so by the Line Chief.

Prearrangement with the Line Chief and/or radio transmission notifying the ground crew and other pilots is always desirable when landing on an alternate runway. PLEASE NOTE: there is a busy pedestrian thoroughfare across 26R from the shade hangar to the launch area of the tarmac. All pedestrian using this thoroughfare should exercise extreme caution and ALL pilots landing on 26R **must stop short** of the East end of the shade hangar in order to avoid the possibility of endangering pedestrians. There will be no exceptions short of a life and death emergency.

- c. **A PILOT SHALL NEVER TAXI AN AIRCRAFT IN A DIRECTION AND AT A SPEED THAT THREATENS TO CAUSE A COLLISION WITH AN OBJECT, AIRCRAFT OR PERSON IN THE EVENT OF BRAKE FAILURE, TIRE BLOWOUT OTHER MISSHAP.**

Pages 38, 39 and 40 are currently vacant.

## U.PROCEDURES FOR TOW PILOTS

### U.1 QUALIFICATIONS

The following requirements are applicable to qualify as solo pilot in command of a Tucson Soaring Club tow plane during glider towing operations.

Possess a current ATP, commercial, or private FAA pilot certificate with airplane single-engine land rating. NOTE: A commercial or ATP certificate is required for **convention** towing.

Possess a current FAA medical certificate (class 3 or better). NOTE: A current FAA medical certificate (class 2 or better) is required for convention towing.

Have logged a minimum of 300 hours of pilot flight time in powered or other aircraft, including at least 25 hours as PIC in tail wheel aircraft, including 5 hours as PIC in make and model. NOTE: These requirements, which are part of our insurance requirements, may change from time to time.

Have experience required by Federal Aviation Regulations.

Have a current appropriate flight review logbook endorsement as per current FARs (a current BFR) and a current annual TuSC tow pilot proficiency check as conducted by the Chief Tow Pilot.

Have a logbook endorsement by a CFI for glider towing operations (FAR 61.69).

Note: This is an endorsement by a CFI-Glider; not CFI Airplane.

Note: These requirements are not, in any event, intended to reduce or eliminate any of the requirements of the Federal Aviation Regulations or other TuSC Standard Operating Procedures.

### U.2 PREFLIGHT

Add oil to maintain 10 quarts mark.

Enter tach time on tow sheet prior to engine start.

Preflight tow plane prior to first flight of the day:

Fuel with 100 Octane LL.

Maintenance problems should be brought to the attention of the maintenance chairman by phone as soon as possible and written up in the maintenance book in the aircraft.

Engine warm up should be between 800 and 1000 RPM. Oil temperature **must** be above 140 before full power can be applied or oil pressure will exceed the red line. Don't let that happen or damage to the engine may result.

The mag check is at 1800 RPM. Drop is not to exceed 100 RPM. **ALWAYS** select spot on the pavement for your run up so as to reduce damage to the propeller and leading edges. After oil temperature is sufficiently warm, fly one flight around the pattern to ensure that the tow plane is ready to begin operations.

Carry a spare rope and appropriate weak link in the tow plane if an aero-retrieve is expected, and may be requested, while the tow plane is airborne. Depending on the site, it may be advisable to approach the retrieve without the tow rope attached and dragging behind where it could snag or otherwise present a hazard.

### U.3 HOOKUP

The tow rope release will be checked prior to the first tow each day.

The Line Chief is responsible for coordinating the hook up between the tow plane and the sailplane.

The Line Chief will inform the tow pilot when to start the engine (overhead wind-up) and when to take position on the runway.

The signal to take up the slack in the tow rope is: sailplane wings level and a swinging motion of an arm below the waist by the Line Chief (see section H.).

When slack is taken up or the Line Chief wants the tow plane to stop he will extend one arm above his head and hold it there until the tow plane responds.

### U.4 TOWING

a. The tow pilot is informed by the Line Chief the desired release altitude. This will help the tow pilot determine his tow pattern and area of release.

b. Steering turns by the sailplane will only be done above 1,000 AGL.

c. The sailplane instructor will inform the tow pilot prior to takeoff of any special item he intends to do such as simulated rope break at low altitude, having the tow pilot give the emergency release signal, etc.

d. Students may sometimes make off field landings with an instructor using an aero retrieve. The tow pilot will make sure that a spare usable tow rope is in the tow plane. If the terrain at the off field site is such that the tow pilot cannot land with the tow rope attached, he will make a low pass and drop the rope taking care to avoid creating a hazard to persons or property. Prior to taking off the tow pilot will thoroughly discuss with the instructor the procedures for takeoff.

e. Some of the higher performance sailplanes, especially when carrying ballast, require a fast initial acceleration. In this case the tow pilot will, after the tow rope slack is taken up and the takeoff signal has been given, obtain 2,000 RPM holding with brakes, then after releasing brakes go to full power smoothly while rolling. With skid strips or on gravel accelerate slower to avoid bouncing sailplane on tail or picking up stones.

f. Maximum cross-wind component is 15 MPH for takeoff.

g. Tow speed is 60-65 MPH for Schweizer 2-33 sailplanes and 75 to 80 MPH for higher performance sailplane such as the Club's Schweizer 1-34, the Grobs, PW-5 and PW-6 and most private ships. For a ballasted sailplane, use 80 MPH unless the pilot asks for different speed. Comply with the pilot's request. See U.8.2&3 for more tow speed information

h. After tow rope slack is taken up the tow pilot will make a final cockpit check, check for traffic, and wag the rudder as a "ready for takeoff" signal. He will then watch for the glider rudder wag and the takeoff signal from the Line Chief. If the glider wing is placed on the ground prior to the takeoff roll the tow plane will hold. The tow plane should not become airborne at less than 50 MPH, and usually 60 M.P.H. is a more appropriate speed depending on the winds and glider weight. The tow plane should hold the runway heading until at least 200 ft. AGL. The tow pilot will consider wind direction and velocity, experience of the glider pilot, type of sailplane and ballast (if any), and lift conditions. Inexperienced glider pilots will always be kept upwind and within easy gliding distance of the field with turns made with a maximum of 20 degrees of bank.

i. The tow pilot may make gentle 90 degree turns when a sailplane is boxing the wake. Boxing the wake should be initiated by the glider descending from high tow to low tow. Likewise experienced pilots should be kept upwind and within gliding distance of the field unless they specifically request otherwise.

j. With experienced pilots, upon encountering lift above 1000 ft AGL tow plane may turn in lift until sailplane releases. This may expedite the tow.

k. Upon release by the sailplane the tow plane will make a descending left turn. The tow pilot will check to see that the sailplane is turning away. Power will be smoothly reduced to 2000 RPM while bringing the mixture back with the throttle to ensure a gradual cooling of the engine during the decent. Cylinder head temperature cooling should not exceed 50 degrees F per minute. Use one notch of flaps and increase speed to 100 MPH. The tow pilot will be alert to the sailplanes airborne in the area and should plan his approach to landing so that he can visually clear all quadrants of approach to the field. A conventional 45 degree entry to downwind at the IP is the preferred. Return mixture to full rich before landing.

## U.5 INABILITY TO RELEASE

If both the tow plane and sailplane are unable to release from the tow rope the following procedure for a landing will be used: Using the radio, the tow pilot and/or the sailplane pilot will notify the Line Chief and other aircraft of the situation and intended approach. The tow plane will set up a long straight-in approach to the runway maintaining a constant air speed and sink rate. The approach over the runway boundary will be kept high enough to allow the sailplane, in low tow, to clear obstacles. Note that in a decent low tow position appears noticeably higher relative to the tow plane than in a climb, but it is still necessary for the sailplane to hold a position below the tow plane to ensure that it touches down first. The tow plane will allow the sailplane to touch down first, thereafter touching down itself and completing the rollout without use of brakes if possible. See operating procedures for sailplane emergency actions. (K.4,.a-h).

## U.6 PILOT RESPONSIBILITIES

The tow plane is the tow plot's responsibility at all times. This includes on the ground when not in use. It is always a good idea to secure the tow plane when leaving it unattended but especially during periods of strong winds or numerous dust devils. Then the tow plane must be tied down when the pilot is not in actual attendance of the airplane.

At the end of a towing session it is the tow pilot's responsibility to secure the tow plane in the hangar. He will report any problems with the tow plane to the mechanic in charge and the maintenance chairman.

Currency Requirements: At least three towing flights as PIC every 90 days. Complete an annual tow pilot proficiency check with the chief tow pilot or his designee at a time and place chosen by the Chief Tow Pilot.

Release altitudes will be reported to the timekeeper by radio after each release (i.e. El Tiro Line, 8,8 zero is off tow at 3000 feet. 3 point zero"). Then release altitude will be noted on the tow sheet. Tow sheet will be turned in to the timekeeper at the end of the day's towing.

Any problems pertaining to towing should be brought to the chief tow pilot's attention.

It is the responsibility of each individual tow pilot to ensure that he has complied with all applicable F.A.R.'s and TuSC rules and currency requirements.

## U.7 THE PAWNEE

- 1 The engine is a Lycoming
- 2 Fuel capacity is 36 gallons (34.7 usable); 18 in each wing tank. Use 100 Octane LL.
- 3 The forward seat adjustment is located on right side of seat frame.
- 4 Initial startup in cool weather may require pumping the throttle up to 3 times before starting. When warm, starting is accomplished by opening the throttle fully and then retarding to Idle prior to engaging the starter.
- 5 To start, turn master switch on, turn on electric fuel pump (it is only necessary to use this while starting). Turn on both magneto switches. "Clear Prop". Engage starter. Warm up as per section U.2.e.
- 6 Check list is located on a laminated sheet, which should be kept in the metal pocket used for the tow sheet on the right side of cockpit
- 7 Take-off and climb should be at full power with mixture rich.
- 8 Maximum indicated airspeed for flap extension is 110 MPH.

## U.8 TOWING INFORMATION

1. When starting a tow with a nose skid sailplane, power should be applied slower than with a tail dragger sailplane.
2. Maximum tow speeds for club sailplanes are: 2-33 98 MPH Grob 106 MPH
3. If the sailplane on tow rocks it's wings, increase speed.
4. If the sailplane on tow yaws (fish tails), decrease speed.
5. If the sailplane moves to right or left, then rock wings, the pilot is indicating he cannot release tow rope.
6. If tow plane is unable to release the tow rope, the signal is to yaw (fish tail) the tow plane.
7. If a rope break occurs on tow, immediately notify El Tiro Ground by radio and circle the area to check on the sailplane before returning to the field.
8. Low tow position is normally used for cross-country tows.
9. Suggested cross country tow speeds are 2-33...65 MPH 1-26...65 MPH Janus...90 MPH Grob...90 MPH or as requested by sailplane pilot
10. On aero retrieves note start and return tachometer times, which are the basis for retrieve charge (plus 3,000' AGL tow).

11/11/06 This document was digitized by a character recognition program for the use and benefit of the Tucson Soaring Club and an effort was made to correct typographical errors and up date the information without changing the basic intent. Doubtless some errors and anachronisms still exist.



