

Toronto Soaring Club SAFETY AUDIT

Top Copy

Attached Documents

- Toronto Soaring Club Flying, Ground & General Rules (TSC_rule.doc)
- Daily Briefing Guidelines (see below)
- Ground director duties (see below)

Safety Audit Goals and Summary

Fly safely and have fun is the first rule in our club rulebook. Toronto Soaring has had one incident over the last 20 years, however we are not going to use our record to breed complacency. This fall a group of instructors and volunteer members assessed flight and ground safety at our field. This document is a summary of flight operations and a vision of our future goals for safe flying.

Club Leadership & Organization

Club rules are posted at the start cart, in the clubhouse and given to each member when they join. It has been revised through the years to reflect new equipment and flying activities (see attached document). The CFI in consultation with the instructors makes decisions when a pilot is ready to fly a new glider or go solo.

We have a dedicated executive board composed of President, Treasurer, Secretary, Chief tow pilot, Technical director, Safety Officer and a Chief Flying Instructor (CFI). All board members except the CFI are chosen by the membership at the annual general meeting beginning each flying season. A mid season general meeting is held if warranted (i.e. voting in of new members or special purpose meeting). The current CFI (Geoff Le Breton) has served for 13 years. The CFI is chosen by the instructors at the first instructors meeting of the year. At this time specific and general safety concerns are discussed. Coordination and communication of changes to flight operations as they relate safety issues are agreed upon by the CFI and instructors.

Toronto Soaring has steadily improved club aircraft, work shop & club room over the years. We generally have between 20-30 solo members and 0-5 students. Our current club membership (9/2/00) is 35; (25 full members, 3 honorary, 1 student, 6 Ten flight training package; 33 Male, 2 Female; 6 Over 60) Current annual fee is 380.00 for a full member, 190.00 for student members. Aerotow to 2000' is 16.50 and glider rental ranges from 0.32 to 0.48 cents per minute (1-26, 0.32; 2-33, 0.41; SZD-50, 0.48; SZD-51, 0.45 for more detail see attached fee schedule or our web site < <http://Home.Istar.ca/~boblepp/> >)

Insurance

Our club is a member the Soaring Association of Canada (SAC) group insurance scheme (2000 carrier was, Marsh Canada Ltd., 70 University Ave. Suit 800, Toronto ON M5J 2MV). The club carries 3 million in premise liability, liability on each club aircraft and hull insurance on the **tow plane** (\$50,000 Citabaira 150), **puchacz** (\$47,000 SZD 50-3) and **junior** (\$40,000 SZD 51-1). Private owners are required to carry liability insurance.

Flying Operations & Airfield Hazards

We are not located near a major airport or airway but do have a high voltage transmission line, south west of our field and a parachute drop zone approximately 10 miles south of our airfield. Gliders fly left hand circuits on all approaches except when landing on 36. Gliders fly right hand circuits when approaching the north runway to avoid conflict with the transmission lines. Each flying day there is a duty instructor who is responsible for all aspects of the daily operation that do not require approval of the CFI. This year we assigned a field manger to assist the duty instructor in daily operations (see attached document). All members except the instructors are included on a roster to be field manger. If the member is unable to attend on the assigned day it is their responsibility to get someone else to cover for them.

Daily Operations

Gliders and the tow plane are given daily inspection (D.I.) & washed once brought out. Washing the equipment ensures clean aircraft and while washing pilots & students alike are encouraged inspect aircraft for damage and report it to the duty instructor. The duty instructor determines the active runway and which gliders should be brought to the takeoff point. Once the equipment is ready the duty instructor calls everyone over for a preflight briefing (see-attached document). Often students or any pilot will be asked a question regarding emergency procedures (i.e. tow plane wags his tail what does this mean, or your at 350 feet there and the rope breaks. What would you do?) or a safe circuit reminder (be in the vicinity of downwind at 1200 feet, where is that off this runway?). Any special conditions like turbulence over the maples, forecast weather and cross-country tasks are discussed when all are present.

VHF radios are installed in all club aircraft including the tow plane and in our portable control tower (open trailer with radio, wind meter, cell phone and technical logs). Back up batteries are kept charged up in the clubhouse. Radios are tested as part of the D.I.

Winch Operations

Our club has a winch that we use occasionally. We use VHF radios to communicate between the glider, start cart & winch. We have a backup hand held VHF radio that can be used on the winch or at the start cart. The glider can call speed during the launch and so the winch operator can let the pilot know just before powering down.

Accidents

We do not currently have a formalized post accident procedure document. Our safety officer will be working on this and will present a draft to be discussed at annual general meeting spring 2001. The only accident/incident that has occurred at our field in the last 20 years was investigated and written up by the Safety officer at that time (Ken Ferguson). This incident involved spoilers that opened shortly after take off on an aertotow launch, and an off field landing that damaged the spoilers. The incident report was discussed at the next general meeting and resulted in a procedural change that requires the pilot to verbally confirm the spoilers are closed and locked before the person

running the wing can continue with the launch. Last year a canopy was damaged resulting from “pushing in the wrong spot”. It occurred while the canopy cover was on which made it difficult to see. The board investigated and now canopy covers are removed before gliders are moved around.

Licensing Data

The CFI checks all licenses and medical certificates of glider pilots at the spring general meeting or before a member flies. Similarly the chief tow pilot checks licenses and medical certificates of tow pilots. We have had a computerized flight data sheet program that was developed by Garry Kramer (SOAR) to log flight times and automate keeping member accounts. It can also print out a complete flight log for instructors.

Airfield Hazards

Toronto Soaring has the luxury and safety of 2 large grass runways. The east-west (09,27) runway is 2,600 ft long while the north south (36,18) runway is 3,300 ft long. Other than the power transmission lines there is little in way of obstacles in the immediate vicinity. Small shrubs along fence rows that abut the runways are cut back every few years. To discourage short landings, “land beyond any equipment on the active runway, straight rollouts” and a “reminder to use alternative cross runways if required” is repeated in the daily briefing at the start of each flying day. Access to the runways is restricted and a large warning sign has been placed at the entrance to out parking lot.

Instruction

We are a small club and typically have between 1-5 students at any given time. With 5-7 qualified instructors we set up a schedule at the beginning of the year. New students are required to purchase a logbook and the Soaring association of Canada instruction manual (Soar & learn to fly gliders). Availability of ground school depends on where the student lives. Courses are usually offered over winter months (see sac.com for more information). The CFI checks out instructors at the beginning of the season. Instructors must have 2 check rides flown from the back seat or 5 solo flights before any instructional flights. The roster for instructors, field managers and tow pilots is posted in the clubhouse (and on our web page this year). Students are sent solo at the discretion of the CFI. The CFI usually asks another instructor to take a checkout flight with the student. Once a student has demonstrated consistent mastery of basic skills and emergency procedures the next step is a solo flight. They must be proficient in the D.I. procedure for that aircraft and pass a pre-solo test (see attached sheets). First solos occur under calm conditions. All club ships have functioning radios, so the new solo pilot will be in contact with the “start cart” if special needs arise or for normal radio procedures in circuit. Tow pilots are alerted that this is a first solo. Low time solo pilots are required to take check ride with the duty instructor every 5 flight. All members are checked out by an instructor and are required to have 5 solo flights before taking passengers. Part of the spring check out is a spin check. All students must be competent in spin recovery before solo flight. The 2-33 or the SZD-55 are used for spin checks. Usually the duty instructor

flies into flights (people off the street). For licensed members to take passengers the minimum requirement is a "C" badge and 5 hours on type, including at least 5 takeoff. The final decision rests with the duty instructor. Moreover they must have their logbook signed by the CFI endorsing passenger flights for that aircraft and must have flown solo within the last 31 days. All passengers and SAC members visiting from other clubs must sign a waiver recognizing the inherent risk involved in soaring before flying. Individuals under 18 must have parent or legal guardian co-sign.

Weather

It is the responsibility of the duty instructor to decide if it is safe to proceed with a flying operation, what will be the active runway. Decisions regarding operations, check rides and response to changing weathers are made in consultation with other instructors and senior members. Links to weather information can be found on our club web page <http://Home.Istar.ca/~boblepp/> >

Cross-Country Flying

Off field landing training begins pre-solo by asking the student what action would be taken given a rope brake or signal from the tow/winch for early release. Simulated rope/cable breaks are part of pre-solo check out flights. Before going cross-country in club aircraft a member must declare his/her intentions at the daily briefing (Goal flights/ X-country flights) and have volunteers and retrieval equipment organized. A map and information on any local hazards is posted in the clubhouse.

Aerobatics

Aerobatics beyond steep turns, wing-overs, stalls, spins and loops are not taught or allowed in club aircraft.

Equipment

Annual inspections of all gliders and the Tow plane are carried out during spring rigging by a qualified AME. In addition the daily inspection pilots are to do a quick walk around inspection of the glider they are to fly. The pilot is responsible for the glider after the flight until it is brought back to the launch point and safely secured.

Winch

Regular maintenance of winch is performed by chief winch operator. We replaced the winch cable in 1998 and have had a total of 300 launches to date (Nov 2000). The winch is inspected (D.I.) at the beginning of each day the winch is used. The guillotine is tested every third day on a piece of sacrificial cable. Weak links used are not used to prevent unintentional release, however with a breaking strength of. The winch cable is reversed on the spool after 1,000 launches and replaced after 2,000 launches.

Towplane

Tow pilots do a D.I. before flying, which includes

- checking; oil level, landing gear, brakes, tire condition & air pressure, tow rope hook up & tail wheel assembly, all control surfaces and propeller for signs of wear or damage.
- Use fuel drains to check for water -one drain for each wing tank, -under fuselage and inside engine cowling.
- Clean aircraft especially the leading edge on flight surfaces, struts and engine cowling.
- Clean windows with a clean cloth and Plexiglas cleaner.
- Inspect fabric covering, battery, belts, inside cowling for evidence of bird nesting materials, air filter, fire extinguisher.

Record tachometer time, if any oil was added and

Tow-ropes

We nylon rope (breaking strength ~1,500 lbs.) with at 1,100 lbs. weak link the tow plane end and at 900 lbs. weak link at the glider end.

Radios

Radios are installed in all club aircraft including the tow plane (frequency 123.5). Radios always on when flying. Gliders and tow plane are to call in downwind entry. A spare battery is kept on the start cart, more in the club house. Low batteries are to be promptly (end of day) recharged at the battery station in the work shop.

Parachutes

All solo pilots must wear parachutes. Chutes are stored on the start cart when not in use in a protective cover. Chutes are repacked every winter by Niagara chutes.

Seat Cushions

We have “hard foam” seat cushions in the 2-33 and have the go ahead to purchase foam cushions with energy absorbing foam (EAF) for all club aircraft for the 2001 season.

Seat Ballast

Seat ballast is available for SZD 50-3 (factory supplied thread down).

The 2-33 & 1-26 have a lead weights that fit securely under the seat. Ballast is part of the pre-take off check. The 2-33 has a weight placard and SZD 50-3, SZD 51-1 have flight manuals on the start card. For the SZD-50-3 & SZD-51-1 a one page summary which lists operational speeds and weight limits has been photo copied and handed out to pilots flying these aircraft.

Airworthiness

Over the last 5 years Toronto Soaring has worked to update our fleet and hanger facilities. In 1991 we purchased a Puchacz (SZD 50-3) and in 1998 a Junior (SZD 51-1). These aircraft replaced our beloved Bergfalke II and K6e which were sold. All club aircraft documents were present and up to date. Pre-takeoff and landing check lists and placards

are present and legible. All equipment is stored in hangers. Spot markers are spray painted on the hanger floor to help prevent ground handling damage. Aircraft are washed before use. We have wing and canopy covers for the Junior and a canopy cover for the Puchacz. Aircraft handbooks are stored on the start cart (movable control tower) along with journey and technical logs. Aircraft must be inspected and the technical log signed before an aircraft is flown. If some defect is discovered, it is written in the logbook, the technical director is alerted and he (she) will advise the duty instructor on course of action.

	Citabria	SZD 50-3 "Puchacz"	Schweizer 2-33	SZD 51-1 "Junior"	Schweizer 1-26
Built	1975	1991	1974	1998	1970
Hours	2,200	500	2300	160	1600
Hour/yr.	70	60	80	80	40

Students are shown the D.I. routine for aircraft they fly and are expected to help, whereas only licensed pilots can sign the aircraft logbooks. Tow pilots must be club members, have a minimum of 100 hours solo powered time and 5 hours on type before they can tow at the club. The chief tow pilot must check them out. Tow pilot training includes familiarity with local hazards, radio and emergency procedures. Tow pilots are not required to have glider time but it is encouraged.

Facilities

We have a main equipment hanger that we put 3 gliders and the tow plane. This hanger is not used to store solvents nor does it have electricity. The clubhouse and maintenance building house the winch, start cart and other vehicles. A warning sign and a parking lot with barriers has been added in the last 5 years to prevent vehicles from access to the flight line. Fuel is stored in a locked shed >100ft away from the workshop. There is no facilities checklist but there is list of things to do to lock up and shut down heat and water to the clubhouse.

First Aid

The field phone is located on the start cart. Emergency numbers are listed beside the phone. There is an emergency first aid kit on the start cart, in the Puchacz and in the clubhouse. There is no list of member with first aid training

Daily Briefing Guidelines

- Get scheduled **Field Manger** or substitute to -record flight times;
- arrange flight scheduling -greet & schedule intro. flight guests, collect money
- **Wind strength & direction.**
- **Touchdown point:** no landing before foremost aircraft or vehicle on flightline.
- Reminder: If low in circuit **USE AN ALTERNATE RUNWAY. DO NOT ATTEMPT TO STRETCH YOUR GLIDE!!**
- Reminder: For Aerotow, be in **vicinity** of circuit entry at **1200'**. **Begin circuit at 900'**.
- Reminder: **Straight roll-out.** Land long if runway is obstructed with other aircraft.
- Reminder: Solo pilots must **wear parachutes.**
- Reminder: **Call DOWNWIND** only. Avoid non-essential radio chatter. Use phonetic callsigns
- Reminder: **Smoking** rules - **never near aircraft**, use sand bucket on start cart for butts.
- **Badge flights:** Clear with duty instructor before attempting any such flight.
- Review: -a- **Tow pilot signals** for release/unable to release/spoilers out.
 - b- **Spoiler procedure** wing runner's responsibility to call "Spoilers closed & locked" and not to begin take-up slack until pilot confirms.
 - c- **Front signaller** must stand 30 meters in front of towplane when rope is tight so they can signal towpilot if problem occurs at beginning of take-off.
 - d- **Rope-break procedures** at various heights.
- All pilots should **do a walk-around before each flight** - check control surfaces, ect. **and be ready to take-off as the towplane lands. BUT DO NOT HOOK-UP/TAKE-OFF UNTIL ALLCHECKS ARE DONE AND YOU ARE READY.**
- In case of uncertainty about procedure, a copy of **club flying rules** is on the start cart with log books
- Any complaints or suggestions should be taken up privately with the duty instructor.
- All gliders will be towed by the duty tow pilot or his/her designate or relief.
- All students or pilots requiring **check rides** must fly with the duty instructor or his/her designate or relief.
- **Radios always on.**
- **Pay** at end of day.
- Student pilots and pilots flying intros must **keep well clear of other gliders in thermals** (at least 200' vertical separation)

- **Open Discussion**

Toronto Soaring Club: Duties of Field Manger

- Organize a team to get the gliders out of the hanger and washed.
- DI gliders and make entries into technical logs.
- Move gliders and the start cart to the takeoff point (duty instructor determines active runway).
- Make all entries in the daily flight sheet. It is not intended that the field manager remain at the start cart all day. If you need a break for lunch or would like to take a flight, please ask someone to fill in for you while you are gone.
- Maintain lists of pilots who sign up for the various gliders.
- Look after any visitors to the field including scheduling intro flights.
- Collect any money due to the club and put it in one of the envelopes provided. At the end of the day, give this envelope to one of the board members.
- Put gliders and start cart away aat the end of the day.
- Please remember that the duty instructor has the ultimate responsibility for all flying and related operations. The field manager is there to help out and look after ground operations when the duty instructor is in the air.