**MELBOURNE HANGGLIDING CLUB OPERATIONAL DOCUMENT**

**November 2008**

**GROUND TOW PROCEDURES AND GROUND TOW ENDORSEMENT TRAINING**

All ground tow operations must comply with the requirements of the HGFA Towing Procedures Manual which is the primary operational document. The HGFA Towing Procedures Manual is available on the HGFA web site.

This MHGC Operational Document is an addendum to the HGFA Towing Procedures Manual and describes additional procedures, reminders and useful suplemental information for MHGC members when they are conducting ground tow operations.

This MHGC Operational Document also describes a sylabus to be used by suitably endorsed MHGC SSO's when conducting training of pilots to the standard required to obtain a HGFA Ground Tow Endorsement for hanggliders. For insurance coverage, SSO's must have the written endorsement of the HGFA General Manager.

## MHGC GROUND TOWING OPERATIONS

**PILOT QUALIFICATIONS:**
All MHGC pilots undertaking ground towing should hold a minimum of a HGFA Restricted certificate for hanggliders as well as a Ground Tow Endorsement.

**DAILY DUTY PILOT:**
A daily duty pilot should be nominated to supervise the tow operations. This person may be changed during the day's operations.While the Duty Pilot will endeavor to provide appropriate oversight the whole towing operation it must be accepted by all pilots engaging in the towing operation that their safety is ultimately their responsibility. The Duty Pilot can not be held accountable or expected to capture all safety issues so peer checks and individual pilot self checking of systems and knowledge of the operation is essential. The Duty Pilot is not solely responsible for the pilot safety.

**LOCATIONS USED FOR GROUND TOWING:**
A variety of locations may be used for ground towing however they must provide a good surface for the tow vehicle, be unobstructed by powerlines, trees, dwellings and other obstacles both for safety and to prevent mechanical turbulance as well as to prevent the falling tow rope landing in or on them. The ideal location would be a large square paddock of at least 700meters long with suitable surface. If the tow location is in grass, due consideration should be given to the risk of the tow vehicle starting fires. It is recommended that the tow vehicle carry a fire extinguisher.

**EQUIPMENT AND PROCEDURES USED IN GROUND TOWING:**
All equipment used should be checked prior to the days activities. Pilots are responsible for checking and maintaining their own equipment.

**Hook knives.** It is mandatory that pilots carry a hook knife at all times when towing. These must be in an easily accessible place on the harness. Pilots must make sure these are available for use quickly and need to be familiar with their operation (see instructional section).

**The use of radios is mandatory** when conducting ground tow operations. Their operation should be checked prior to each tow. Radios used by pilots should have a facility to transmit continuously when on tow.

The following radio signals are recommended during towing operations:

1/ Pilot commands “Take up tension”
2/ Tow vehicle reports “tension on”
3/ Pilot reports tension at their end of the rope
4/ Pilot reports “locking on mike”- then locks on mic.
5/ Pilot reports “picking up glider”
6/ Pilot reports wind speed and direction eg. “wind is 5 knots straight down strip”
7/ Pilot reports “bridle free and clear”
8/ Pilot reports “wings are level”
9/ Pilots commands “Go now, go now, go now”
10/ Pilot reports “airborne” as feet leave ground
11/ Pilot talks to driver whilst on tow to give the tow driver feedback, ie. report passing 100 ft, 300 ft etc. Report on turbulence etc.
12/ At completion of tow Pilot commands “stop, stop, stop”, driver stops.
13/ Pilot reports “safe release” after checking no rope remains, thanks driver for tow, reports “switching off mike”.

If at any time the pilot feels that the tow is getting out of control they should immediately call Stop, Stop, Stop. At this command the driver should stop the vehicle as quickly as possible.

It is the pilot's responsibility to switch off their transmit switch when then release from the tow line.

**Tow bridles** must not be constructed with, or attached to the hangglider or harness with open clip carribiners. All caribiners used for this purpose MUST be fitted with **closed screw gates.** This is to prevent inadvertant snagging of harnesses or bridle systems to the wires of the hangglider.

**Release systems** should be checked for operation prior to each flight. Each pilot is responsible for ensuring that they are attached to the tow ring in the correct manner.

**Weak links** made of builders string line are recommended. The breaking strength of the weak link should be approximately the combined weight of the pilot with all equipment and glider. Students should be shown how to construct their own weak links. A new weak link should be used for each tow unless the weak link is protected from abrasion by a shroud. A weaklink will not necessarily fail during a lockout.

**Tow gauges** may be of several types, electronic, hydraulic or mechanical. The tow gauge must accurately indicate tow line tension and the gauge itself must be easily visible to the driver during towing operations.It is strongly recommended that the tow gauge system has a facility for emergency release at the tow car end that can be activated by the driver. It is also strongly

recommended that the tow driver has a hook knife in an immediately accessable place.

## GROUND TOW TRAINING

**SSO QUALIFICATIONS REQUIRED FOR TRAINING:**
SSO conducting ground tow training should have a minimum of 100 tows and/or 30 towing days experience. For insurance purposes, the SSO conducting ground tow endorsement training must be authorised in writing by the HGFA General manager.

**PILOT QUALIFICATIONS:**
Pilots undergoing training in ground towing should hold a minimum of a HGFA Restricted certificate for hanggliders.

**DAILY DUTY PILOT:**
Where pilots are being trained to meet the requirements for their ground tow endorsements the daily duty pilot should be a suitably endorsed SSO.

**GROUND TOW TRAINING SYLABUS:**
The normal sylabus for training pilots to meet the requirements of a ground tow endorsement is as follows:

**1/ Initial briefing.** Prior to towing operations, often on a previous day, a session of general instruction and discussion of towing equipment, procedures, safety issues and special requirements should be held with students about to embark on training for ground tow endorsements.

**2/ Daily briefing.** On the day of tow operations, the SSO should give a briefing to all pilots and drivers prior to the start of the day's tow operations. The briefing should cover all of the issues covered in the initial briefing with special emphasis on safety and emergengy procedures to be used. This briefing should include a report on the weather including expected changes, condition of the tow strip, no-fly zones, airspace issues, sensitivities of locals as well as safe vehicle parking and storage.

**3/ Equipment checks.** All pilots should set up their gliders, harnesses and tow equipment. Each pilot is ultimately responsible for the safe maintenance and operation of their own equipment however the SSO may assist with this is requested to do so by the trainees.

**4/ Demonstration tows.** Prior to any student towing, an experienced pilot should demonstrate the required towing procedures a few times so that the students understand what the required sequence of actions and procedures will be. These demonstrations will also allow students to begin to become familiar with the radio commands used.

Ideally this demonstration should include a simulated rope/weak link break (by the pilot activating the release under tension) to demonstrate the large pitch changes that occur during such an event.

**5/ Student tows.** Students will then begin their own tows. For the first few tows the SSO may elect to give the radio commands on behalf of the student, however, as soon as is possible, the pilot should give the commands themselves. Initial tows should take place in smooth conditions. Only when the pilots becomes experienced at towing should they be allowed to fly in more demanding weather conditions. Previous pilot skill and experience needs to be taken into account in this regard.

**6/ De-briefing.** At the end of the day a debrief should be held which should discuss the days

activities. This should again cover safety procedures and discuss any problems encountered during the day.

**7/ Written exam.** This may be undertaken on the same day as tow operations or in the days after

It is generally considered that at least one full day of tow training is required to get relatively experienced pilots (rated intermediate or above) to the required standards for a ground tow endorsement. For restricted rated pilots, 2 days of training is recommended.

**EMERGENCY PROCEDURES TRAINING:**

The following emegency procedures should specifically be covered during ground tow training. Initial discussions should be conducted prior to any towing and the procedures should be repeated several times during the tow training itself.

**Line and weak link breaks:** A tow line or weak link break whilst on tow will leave the pilot at a nose high attitude. This is extremely hazardous if this occurs at low altitude and at low airspeed. Trainees should be taught that they need to fly slightly faster for the first 200 feet of their tow so that they are able to maintain adequate airspeed as they recover from this situation.

**Release failures**: Trainees should be briefed on the procedures in case of a release failure. The advised procedure is as follows:
1/ Pull the release again, sometimes in the heat of the moment the release line may not have been pulled hard enough. If this does not work-
2/ Pull up the release and activate it directly. If this doe not work-
3/ Cut the bridle with a hook knife; release line first, then TOP bridle line. The release should fall away.
4/ As a last resort, the pilot should land with the rope attached as described in the HGFA Tow manual.

It should be emphasised to the trainee that at all times the most important task is to **FLY THE GLIDER!**

**Lockouts:** Trainees should be briefed on the causes and consequences of a "lockout". They should clearly understand that if they are getting off line that they should call a halt to the tow by commanding Stop, Stop, Stop! to the driver and /or releasing from the rope. It should be stated quite clearly that a weak link will not protect them during a lock out.

**A NOTE ON DRIVERS AND DRIVER TRAINING:**

It is mandatory that each pilot undergoing tow training spend at least 5 tows in the tow car as a passenger to experience the tow from the "bottom end".

Students receiving instruction for their ground tow endorsements should be encouraged to learn to drive the tow car under the guidance of an experienced driver. New drivers should conduct at least 10 tows under the supervision of an experienced tow driver prior to being allowed to drive unsupervised. However, being able to drive the tow vehicle is not a mandatory requirement for obtaining a ground tow endorsement.

At no time should a pilot who is under instruction be towed by an inexperienced tow driver.

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