

Alpine Soaring Mount Beauty Inc.

MOUNT BEAUTY SYNDICATE WINCH  
PROCEDURE MANUAL

Version 5.1  
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## Contents

Revision history .....	2
Preface .....	3
General .....	3
The Guillotine (Wire Cutter) .....	3
Protection .....	3
Cleaning and Greasing .....	3
Winch Operating Procedure .....	4
Daily Inspection .....	4
Winch Engine Starting procedure:.....	5
Aircraft Launch Procedure:.....	6
Emergency Procedure - Cable cutting (emergency use of Guillotine):.....	6
Emergency Procedures (Other) .....	7
Shut down procedure after each launch .....	7
Next launch:.....	7
Shut down at end of winch session: .....	7
Cable Break or Tangle: .....	7
Providing Feedback and Information .....	7

## Revision history

Version	Updated	Comments
V5.0	3 August 2021	Terry Knight – Major revision
V5.1	21 August 2021	Craig Collings – Formatting and minor adjustments

## Preface

This document refers to the privately owned (Syndicate) winch that will commonly be used by Independent Operators and ASMB members. It complies with the requirements of the winch's owners.

Safety of the Launch and all persons associated with the launch is the primary concern of the Winch Operator and these Procedures reflect that.

The most important matter that the winch driver is responsible for is safety, and if there is anything in this document that is unclear to the Driver, or if any function of the machine does not conform to this document, then the driver must report it (usually on UHF Ch.14) to the duty pilot immediately and ask for assistance. Every winch driver must read, understand, and retain a copy of this Document.

## General

Machinery of this type is inherently dangerous. There is a risk of clothing, body parts and hair being caught in rotating parts or the cable itself, and then being drawn into the machine. Therefore, there can be no exceptions to the rules that demand personnel be well clear of these parts before the machine is activated. Hearing protection is to be worn. Eye protection is provided within the cabin and must be used whenever the wire is being joined or serviced.

## The Guillotine (Wire Cutter)

This winch is fitted with a wire cutter attached to a heavy weight box. When activated, that runs down between two channels held above the rollers. If it was activated whilst a body part was inserted between the roller and the channels, it is almost certain that part will be removed in a split second if the guillotine blade falls. It would not be a trial run.

**IMPORTANT: Make certain that nothing gets in the path of the guillotine blade.**

At the top of the channel frame is the cabin operated release rod that restrains the blade box. It cannot be released until a red flagged R Clip inserted in the release rod is removed. After all checks and wire adjustments have been completed, the R Clip can be removed from behind the top end of the rails and stored in the hole in the starter key. No further approach can be safely made to the cable end of the winch until that R Clip is properly reinserted.

An additional fail-safe measure is a stout rope that holds the cutter blade box to the frame top, preventing the blade from falling too far even if the safety clip is not in place and the cabin release is accidentally pulled.

This rope, as well as the safety R Clip, MUST be fitted prior to every relocation of the winch.

Both are removed before launches are started.

The safety Clip Red Flag is visible from the driver's seat.

## Protection

A tarpaulin cover should be used to protect the mechanism and wire on the drum from rain.

## Cleaning and Greasing

This will be done routinely by the winch's owners.

## Winch Operating Procedure

The winch operator ("Driver") will be currently conversant with "ASMB Winch Launching and Radio Procedures" in the ASMB Operations Manual.

Prior to a launch the Duty Pilot, or the person in charge of the operation at the time, should be reasonably assured that:

- a. An authorised winch driver will have provided personal supervised training to each winch driver and been reasonably satisfied of the driver's competence and currency.
- b. An authorised person will have provided personal supervised instruction to the wingman, concerning procedures and safety signals to the pilot and the winch driver.
- c. An authorised person will have provided personal supervised instruction to the pilot in command and been satisfied as to his or her competence and knowledge of safety signals and winch launch procedures.
- d. No person shall act as Pilot in Command of an aircraft to be winch launched unless clear evidence of the pilots GFA Membership status and winch Currency is sighted prior to the launch.

## Daily Inspection

Daily Inspection by the Winch Driver before the first winch engine start each day:

**IMPORTANT: Before Daily Inspection of the winch: Check that red guillotine safety flag is in place at top of rails.**

- a. General walk around starting at driver's door and returning after a clockwise circuit.
- b. Remove the protective steel panels from each side of the engine and stow near the bonnet. Check again that the red safety flag and pin are in place on the guillotine rails. The inspector will look for any signs of leaks, unsecure items, and visible damage. This will include looking for wasp nests in exhaust pipe outlets and small animals inside the fan shrouds. The location and integrity of the fire extinguishers must be confirmed. Check the winch wire for loose coils.
- c. Examine radiator fluid overflow canister. It should be approximately half full of fluid. The colour should be green, and the end of the overflow tube should be well below the fluid level. Do not remove radiator filler cap unless there appears to be a lower-than-normal fluid level which indicates fluid loss. Report it.  
If the level is below the end of the tube, DO NOT RUN the winch. Report it. If the level is low the radiator cap can be removed. Fluid should be full to the bottom of the filler cap seal. Rectify any deficiencies. Call for assistance if unsure and find source of any fluid loss before proceeding further with the inspection or running the engine. Refill only with diluted (50%) long life green radiator anti-freeze/anti corrosion fluid. Glycol is used. Replace filler cap, press hard and turn clockwise to secure.
- d. Withdraw gearbox dip stick. Wipe with CLEAN cloth. Replace and again withdraw stick. Measure fluid level (red Dextron 3) - it should be visible for approx. 40mm or more. Replace stick, cover with bottle. This check will be repeated (see 3 [j] below) when the engine is both running and hot.
- e. Withdraw engine oil dipstick. Wipe with CLEAN cloth. Replace and again withdraw stick. Clear Oil (multigrade SAE 30/40) should meet the upper mark on the stick. Replace stick.
- f. Examine fan belt for security, fraying, tightness. Firm pressure with the thumb on the middle of the longest span should result in about 1cm deflection.
- g. Install battery. Negative terminal (-) is attached to the thick green cable bolted to the chassis. Positive (+) is attached to the remaining two wires. Connections must be firm and clean.
- h. Check the VHF (Very High Frequency) radio receiver is ON. Frequency 126.00 MHz
- i. Check the UHF (Ultra High Frequency) radio transceiver is ON. Channel 14. Test for transmit and receive to and from the launch position.
- j. Turn ignition switch on. Check roof beacon. Turn switch off.

- k. Check brake fluid level. If low report it and refill with Dot 3 or 4 fluid. NOT aircraft mineral brake fluid. Check brake lever moves about half a stroke and does not have a spongy feel at end of stroke.

### Winch Engine Starting procedure:

The driver will ensure that no person is in front of the winch before starting. No person may be allowed near the wire or drum when the engine is running. Check for presence of animals near the wire.

- a. Remove top panel covering fuel tank. Replace screws or wires in their respective holes in the housing to avoid loss. Remove filler cap assembly and refill tank with sufficient unleaded 95 RON petrol to which has been added valve saver solution. If you have any doubts about this do not operate the winch until you have found someone who can assure you of the correct status of the fuel.

Valve Saver MUST be added to fuel at the time it is placed into stock. There MUST be sufficient fuel in the tank to provide an excess for the number of flights anticipated.

**IMPORTANT: The fuel status must be checked prior to every launch. It is possible that a leak for example, has almost drained the tank.**

- b. Replace fuel filler cap. Squeeze the fuel primer bulb gently several times until resistance is felt. Do not force it.
- c. Ensure gearbox is out of gear. (Gear lever hard back towards operator). Check again.
- d. Pull brake lever. Firm resistance should be felt at about halfway back towards operator. If not, check brake fluid level. Do not proceed further until the brake is operational.
- e. Turn ignition toggle switch on (Down). Note the pale red alternator warning light should be visible. If it is not, the alternator cannot charge the battery. Look above the cabin roof. The white beacon should be flashing.
- f. Move throttle lever fully away from you and back, twice. (This squirts raw fuel into the carburettor throat for an easy start). Bring it back to rest and then move it forward slightly.
- g. Turn the starter key clockwise (two clicks) to activate the starter. If the engine does not start after a couple of seconds, release the key. Do not attempt a restart until the starter motor gear has audibly ceased rotating. The sound of smashing ring gear teeth is unpleasant.
- h. This engine has no manual or automatic cold start choke and needs a careful starting technique. When the engine starts, allow it to idle. It may need the throttle lever advanced slightly and slowly to keep it running at a slow speed. Fast throttle action will starve the engine of fuel and it will stop. Once going, increase speed slightly to keep it running until the radiator is noticeably quite warm and there is no tendency for it to stall. Three minutes of summer warm-up is a minimum. More in winter. Only after the engine oil is hot can power and speed be applied. As with an aircraft engine, racing or applying high power to a cold engine is destructive.
- i. Check the Alternator warning light. It was ON when the ignition switch was turned on before the engine was started. It should go OUT once the engine is running, including at idle. If it does not extinguish, it is probable that the battery is not being charged, and the fault could result in engine failure during a launch.
- j. If this was the first start of the day, return to the gearbox and remeasure the oil level (see Daily Inspection point e.) whilst the engine is running. It should be within the marks on the stick.
- k. If engine is hot and a fast full throttle opening and quick return to idle results in lively performance with no hesitation, it is OK, so turn it off.
- l. Remove safety flag and R clip from guillotine and fit it (for visible storage) to the starter key.

**IMPORTANT: Do not approach the guillotine end of the winch again unless the R clip has been replaced.**

- m. If this is a second or subsequent launch, the fuel status MUST be rechecked. There must be adequate fuel for the following launch.
- n. When you are satisfied all is well, call "Mt Beauty Launch: Winch Ready" on channel 14 UHF. Listen for a reply.

### Aircraft Launch Procedure:

**NOTE: For Winch launch procedures refer to the ASMB Operations Manual.**

- a. The Driver MUST be seated in the winch cabin before and during the launch.
- b. The Driver will warn any persons at the launch site of the dangers of cable breaks before commencing a launch. Launching cannot proceed if any person is near the wire danger area. Good communications are essential.
- c. A launch must not proceed if there is a communication uncertainty

### Emergency Procedure - Cable cutting (emergency use of Guillotine):

The guillotine can be used to cut the winch wire and release the aircraft from the winch's control in an emergency.

The circumstances in which the wire is cut are determined by the winch driver as follows.

- a. The aircraft has passed a point in the launch where the cable would normally be released by:
  - The pilot, or
  - Automatic back release, or
  - The failure of the weak link.

BUT none of these release mechanisms have happened AND the aircraft remains attached to the wire AND the pilot is clearly unable to proceed in a safe manner, then:

OR

- b. The winch driver becomes aware through any means, of an emergency developing that could be mitigated by releasing the winch wire from the winch. This developing emergency could be (eg) an impending collision between the winch wire and another aircraft that has entered the launch path. This scenario is not prescriptive.

To cut the cable the Winch driver will:

- a. Close the throttle,
- b. . Move the gear lever to neutral,
- c. Pull the Red 'D' Handle in the cabin. (The wire will be cut immediately).

**IMPORTANT: The driver will not leave the cabin until the wire is on the ground. It is probable that all off-drum wire will be destroyed.**

## Emergency Procedures (Other)

Refer to your Authorised Winch Operator for training.

Refer to the Emergency Response Plan found at the launch point and in the Winch cabin.

Examples of Emergencies include:

- FIRE. Extinguishers are in the cabin and in the launch vehicle. Use one, then radio launch.
- ACCIDENT:
  - Shut down winch
  - Refer to the Emergency Response Plan

## Shut down procedure after each launch

Allow engine to cool for several minutes at idle speed, then switch off the ignition.

## Next launch:

If engine is hot, ensure there is adequate fuel for the proposed launch, there should be no need to prime (pump) the throttle, or to pump the primer bulb to start.

## Shut down at end of winch session:

Remove the battery to take it back to the hangar and recharge if necessary. Confirm that fluid level in radiator overflow bottle is approx. half full. (Normally it will rise approx. 1cm while it is hot, then lower as it cools).

Confirm that engine oil is still within the marks on the dipstick. Consider refuelling the winch tank for the next day. (Unleaded 95 RON plus valve saver). Replace fuel tank cover. Replace the engine side shields.

Check surrounds for pieces of equipment, spanners, cable jointing gear, bolt cutters, fuel drum etc.

Return to hangar and park vehicle. Refuel vehicle with winch vehicle unleaded petrol.

## Cable Break or Tangle:

This is not an emergency but could become one if not handled appropriately. Eye protection must be worn.

Use other supplied protective equipment.

Manage the situation after informing Launch on UHF14 in accord with your Winch Launch Operator's training.

## Providing Feedback and Information

From time-to-time circumstances will change and this procedure should reflect that. You are requested to draw to the attention of the Authorised Winch Operator, the Duty Pilot or Safety Officer any matter that may improve, or is related to, the safe operation of the winch, and any errors in these Procedures.