Midland Gliding Club

Standard Operating Procedure

Procedure Name: Launch Point Procedure (Winch Launching)

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Approver: Position:

Date:

Objective: To define the correct procedures for carrying out safe winch launches at the Long Mynd.

Preface: -

These Operating Procedures are intended to ensure that all operations are carried out safely and should be followed at all times.

If any member is uncertain about any point covered by the Operating Procedures or otherwise, they should seek guidance from an Instructor, Launch Director or in this instance a Main Winch Operator.

1) Responsibility

NB: -

All members on the airfield share in the responsibility for the safe launching of gliders.

The Retrieve Winch Operator is the person signalling the main winch.

THEREFORE THE RETRIEVE WINCH OPERATOR IS THE PERSON ULTIMATELY RESPONSIBLE FOR THE SAFE CONDUCT OF THE LAUNCH.

Consequently if you are not confident that you have completed the training required to conduct launching safely in the current weather and operating conditions DO NOT operate the retrieve winch without seeking advice and guidance from the duty instructor or launch director.

2) Authorisation to operate the retrieve winch

2.1 Only those persons authorised by a Midland Gliding Club Instructor, Launch Director or a Main Winch Operator (nominated by the CFI) may operate the retrieve winch.

2.2 Authorisation to operate the Retrieve Winch will only be given after the person to be authorised has read this Standard Operating Procedure and has successfully demonstrated their ability to safely launch gliders.

2.3 Authorisation to operate the Retrieve Winch should be noted in the person's Gliding Log Book /Mynd Progress card by the authorising Instructor/Launch Director/Main Winch Operator.

3) General Safety Instructions

Members are reminded that:

a) The retrieve winch is a complicated piece of machinery with a guillotine, engine, braking system, cables and other moving parts, which pose a risk of injury if used incorrectly.

b) The main launch and retrieve cables are braided steel cables which may have sharp strands exposed which can cut and given that these cables have been dragged over the ground across the airfield, may carry infections and diseases.

3.1 Any person perceiving a hazard to people, animals, vehicles or aircraft should stop the launch immediately by shouting "STOP" and raising their hand.

No person is ever to be criticised for stopping a launch, whatever the reason.

3.2) If there is any doubt that a launch can be completed safely DO NOT start the launch.

3.3) If there is any concern that the retrieve cable may constitute a hazard to people, animals, aircraft or vehicles STOP the launch and/or GUILLOTINE the cable immediately.

3.4) Always STOP the launch or the retrieve immediately when the Main Winch displays a "STOP" light.

3.5) DO NOT restart any stopped or failed retrieve without specific permission to do so from the Main Winch Operator.

3.6) Clear communications between the winches is essential for safety, two-way radios are provided for this purpose.

a) When using the radio: -

i) To ensure that messages have been completely received and correctly understood, always wait for a complete and correct read back before proceeding any further.

ii) Always provide a complete read back to the Main Winch when instructions have been received from the Main Winch Operator.

b) In normal operation the Signal Lights should only be used for their intended purpose.

<u>NB:</u> - Always get permission/clearance from the Main Winch (by radio) before checking the function of the Signal Lights or demonstrating them to a trainee Retrieve Winch Operator.

c) There should be a functioning air-band radio set to frequency 129.975 at the Launch Point. This should be monitored to enhance situational awareness.

3.7) Following any stopped, or failed, launch or retrieve the Retrieve Winch must be manned until the retrieve is subsequently completed or until advised by the Main Winch Operator that a different course of action is required.

3.8) Take great care handling cables (including the rope trace and the strop): -

a) Always assume the cable is "live" unless you have definitely confirmed otherwise with BOTH winches i.e. both winches "Stop" lights are showing. Even then, beware, as cables can move unexpectedly should they become entangled with vehicles or aircraft being moved around the airfield.

b) Do not handle cables unless you have been briefed on the safe method of handling cables by an instructor, launch marshal or winch operator.

c) Do not enter the area in front of the retrieve winch to fetch the cable until the previous retrieve has been completed.

d) Never wrap a cable around your hand, or any other part of the body.

3.9) No person shall open any cable guard or cable drum guard or the engine cover, unless authorised and instructed to do so by the Main Winch Operator.

3.10) In the event of a problem with the retrieve winch, or its attendant cables, rope trace or weak link use the radio to call the Main Winch Operator requesting him to attend at the Launch Point.

3.11) No person should carry out any adjustment, repair or other work to the retrieve winch or the cables except as authorised by the duty instructor, the main winch driver or launch director.

3.12) Before threading the retrieve cable ensure the guillotine safety catch is engaged.

3.13) Take great care not to get hands/fingers/other body parts in the guillotine mechanism when threading the retrieve cable.

3.14) Do NOT move the retrieve cable if a "STOP" light is being shown by the Main Winch.

3.15) Do NOT move the cables (other than by hand to attach to a glider for launching) by any other means than the winch system unless specifically cleared to do so by <u>BOTH</u> winches.

3.16) All broken cables are to be repaired by the main winch operator.

3.17) It is preferable to use the "cable fetching device" to move the cable/rope trace/weak link safely.

4<u>) Retrieve Winch Positioning and Set up</u>

4.1) The airfield operating set up, launch direction and landing direction will be established by the No1 duty instructor of the day before the daily briefing.

4.2) The siting of the winches (Main Winch and Retrieve Winch) will be decided by the No1 duty instructor of the day in consultation with the duty Main Winch Operator of the day.

4.3) The retrieve winch shall be positioned to allow sufficient space for gliders to safely launch and land and for the Motor Glider to operate.

4.4) The retrieve winch shall be oriented so that the winch is reasonably aligned with the cable line to the Main Winch.

4.5) The wheels of the Retrieve Winch shall be chocked and the parking brake applied before the Retrieve Cable is drawn out for attachment to the Main Cable.

4.6) The Safety Fence will be positioned and secured as close to the retrieve winch as reasonably practicable with the cable opening aligned with the cable guidance rollers of the retrieve winch. The side "extensions" to the safety fence should then be positioned and secured.

4.7) The Minimum Wing Tip Clearance Marker Cone shall be positioned (normally by the No1 Duty instructor of the day) on the downwind side of the Retrieve Winch, slightly forward of the line of the Safety Fence and sufficiently far away (approximately 20m) from the cable as to minimise the risk of the Retrieve Cable fowling the wing tip during a normal launch.

4.8) It is only permissible to use the Retrieve Winch without the Safety Fence when launching (usually Short West) is taking place without the use of the Retrieve Cable. In this case the Retrieve Winch is to only be used as the Launch Point Signalling Facility and for the storage of launch point equipment.

4.9) As soon as reasonably practicable after the Safety Fence has been positioned the electrical connections for the Signal Lights should be connected and the Signal Lights tested.

<u>NB</u>: - Remember to get clearance from the Main Winch Operator BEFORE testing the Signal Lights.

4.10) If for any reason the Signal Lights do not work (or fail during service) then no further launching may take place until a suitable, reliable, light signal system is operative.

<u>NB:</u> - Launching using the radio as the means of signalling to the Main Winch is NOT ACCEPTABLE

4.11) When the Retrieve Winch has been sited tyres should be placed under the back of the winch, aligned with (but not interfering with) the cable drum,

to prevent cable escaping into the area behind the winch in the event of a cable failure under high tension.

4.12) Rotate the Signal Light Repeater Lamp so that it can be easily seen from the Glider Launch Position.

4.13) When "Short West" launching without the Retrieve Cable/Safety Fence is in progress the Signal Light Extension Pole must be used.

4.14) Before launching (other than Short West without the Retrieve Cable) commences the Retrieve Winch Engine should be "warmed up" to avoid a cold stall when commencing the retrieve.

4.15) The first launch of the day should be carried out with either: -

A) A glider where the P1 is an instructor

or

B) Carried out with the duty instructor present at the launch point.

5) Launching

NB: -

The Retrieve Winch Operator is the person signalling the Main Winch and is therefore ultimately in control of and responsible for the safety of the launch.

Any person perceiving a hazard to people, animals, vehicles or aircraft should stop the launch immediately by shouting "STOP" and raising their hand.

5.1) When the Glider Pilot has completed their pre –flight checks and requested the Launch Cable: -

a) Ensure the Retrieve Winch Engine is running.

b) Select and check the correct "retrieve speed" with the Speed Control Lever (if in doubt confirm retrieve speed setting with the Main Winch Operator).

c) Select/check Guillotine Safety Catch "OFF"

d) Carry out "LOOKOUT" scan, check (as a minimum): -

i) Airfield clear in the direction of launch

ii) Emergency (cable break) landing areas clear

iii) Position/heading of other aircraft relative to the airfield

iv) Cable drop area clear

v) No aircraft being towed towards the Launch Point likely to create a hazard.

e) Radio call to Main Winch identifying glider type and any special or unusual considerations (launch failure requirement, 1st solo, two-seater flown solo etc).

f) Place LEFT HAND on Guillotine Firing Lever.

5.2.1) Ideally, there should now be two experienced members to assist the launching of the glider:

- **One holding the wing tip (normally the wing tip furthest away from the retrieve winch) holding it steady especially in a crosswind.**
- **A second person fetches the cable, this person will become the Wing Tip Signaller after the cable has been attached to the glider.**

EXCEPT that one member may perform both functions in a case when there are only two experienced members are available on the airfield and the duty instructor authorises such abbreviated procedure.

5.2.2) After the cable has been attached to the glider, the person who attached the cable moves to stand alongside the wing tip holder at the wing tip furthest away from the retrieve winch and becomes the Wing Tip Signaller.

5.2.3) The Wing Tip Holder raises the wings to a wings level position (except that in a crosswind the downwind wing tip may need to be held slightly higher).

5.2.4) The Wing Tip Holder and the Wing Tip Signaller carry out an "Above and Behind" lookout scan.

5.2.5) When the Wing Tip Signaller is satisfied that it is safe to launch the glider, the Signaller calls out "All clear above and behind" and then pauses for a few seconds to give the retrieve winch driver time to carry out their own look out and scan.

5.2.6) After the pause, if it is safe to launch the glider, the Wing Tip Signaller signals by hand and calls out "Take up Slack".

5.2.7) The Retrieve Winch Operator will now: -

- **signal "Take up Slack" to the main winch driver,**
- **monitor the cable as the slack is taken out,**
- **continue to look out to ensure that it is still safe to launch the glider**

5.2.8) When all the slack has been taken out of the cable and the glider begins to move forward and only if it is still safe to launch the glider, the Retrieve Winch Operator changes to the "ALL OUT" signal and continues signalling until the glider has achieved "Full Climb Attitude".

5.2.9) As the glider starts its ground run the Wing Tip Holder continues to hold the wings level, initially walking then running with the wing tip keeping the wings level (remembering that in a crosswind the downwind wing tip may need to be held slightly higher) to the point when the glider accelerates away and outpaces the wing tip holder. At which point the wing tip must be released.

NB: - It is essential that the hold on the wing tip is released rather than retained to ensure that the wing is NOT held back.

5.2.10) The Retrieve Winch Operator should throughout the launch:

- **monitor the cable, looking out in particular for the possibility of the retrieve cable running over the wing of the glider**
- **monitor the glider**
- **maintain the look out to ensure that the launch is progressing safely and that the cable will drop in an area where there is no risk of causing damage or injury to people, vehicles, aircraft or animals**

5.2.11) When the glider reaches the top of the launch the Main Winch Operator initiates the retrieve by calling "Release, Release" on the radio.

At this point the Retrieve Winch Driver should:

- **remove LEFT hand from Guillotine Firing Lever and use it to push the Drive Lever forward to the magnetic holder (this takes some force and may need both hands initially)**
- **maintain forward pressure on Drive Lever with the left hand and monitor the cable as it falls**
- **monitor the Main Winch for a "Stop" signal**
- **monitor the ground radio for instructions from the Main Winch**
- **when the cable joining ring/parachute assembly approaches approximately 400 metres from Retrieve Winch begin reducing speed using the Speed Control Lever**
- **when the cable joining ring/parachute assembly approaches approximately 100 metres from the Retrieve Winch slow to walking pace using Speed Control Lever**
- **when the cable joining ring/parachute assembly reaches desired stopping point disengage Drive Lever, and**
- **reselect correct retrieve speed with the Speed Control Lever in preparation for the next launch.**

5.3) Launching Emergencies (there may be others!)

General Instructions

NB: -

To STOP a launch press the RED button on the Retrieve Winch. This stops the engine and sends a continuous "STOP" light signal to the Main Winch.

Any person perceiving a hazard to people, animals, vehicles or aircraft should stop the launch immediately by shouting "STOP" and raising their hand.

If in doubt STOP and Guillotine Retrieve Cable

Emergency Actions

A) Person walks in front of Retrieve Winch during launch	Guillotine Retrieve Cable Consider "Stop" signal.
B) Person walks in front of glider prior to launch	STOP Signal, consider guillotining retrieve cable
C) Glider fouls Retrieve Cable	Guillotine Retrieve Cable, STOP
D) Glider drops wing during ground run.	STOP, Consider guillotine
E) People, aircraft or vehicles move into cable drop area.	Guillotine Retrieve Cable, STOP Radio Main Winch, Follow instructions
F) Glider releases Cable on ground	STOP, Radio Main Winch - advise situation.
G) Stop light on Main Winch	STOP, Engine Off, Radio Main Winch, follow instructions.

H) Retrieve Winch engine fails during launch.	**Radio Main Winch, follow Instructions.**
I) No “Release, Release” call From Main Winch.	**Do Not Retrieve, allow cable to Fall, Follow instructions from Main Winch**
J) Cable Break	**STOP, Radio Main Winch, follow instructions.**
K) Main Winch Operator needs to work on cable or winch.	**STOP, Engine OFF, Ignition Key OUT (hang on bracket), Confirm by Radio.**
K) Restart failed or stopped retrieve	**Radio Main Winch, Follow instructions.**

6) Packing up the Launch Point

NB: - This includes moving the Launch Point during the day due to changing operational requirements.

6.1) The No 1 duty instructor of the day will decide on the timing of the last launch or the necessity of relocating the launch point.

6.2) When preparing for the final launch: -

a) Disconnect the Retrieve Cable from the cable joining ring.

b) As part of the pre-launch radio call with the Main Winch: -

i) Confirm this is the last launch of the day

ii) Confirm the Retrieve Cable is disconnected.

iii) Request any specific instructions the Main Winch Operator may have in respect of this launch.

6.3) Launch the glider using the standard launch procedure, EXCEPT: -

a) Retrieve Winch Engine "OFF"

b) Guillotine safety catch "ENGAGED"

6.4) When the glider has reached the top of the launch and the cable is observed to have separated from the aircraft the launch point can be packed up: -

a) Disconnect the electrical connection from the Safety Fence

b) Carefully fold down the Retrieve Winch Wind Sock, remove the Wind Sock from the pole and stow in the equipment storage area on the front of the Retrieve Winch.

c) Recover the Minimum Wing Tip Clearance Cone and stow it in the equipment storage area on the front of the Retrieve Winch.

d) Recover all Weak Links and other Launch Point paraphernalia stow in the equipment storage area on the front of the Retrieve Winch.

e) Remove the tyres from under the Retrieve Winch behind the Cable Drum and stow them.

f) Connect the Retrieve Winch Recovery Vehicle (probably a Land Rover) to the Retrieve Winch. Ensure the tow hitch is correctly engaged.

g) Remove the Retrieve Winch Chocks and stow them in the equipment storage area on the front of the retrieve winch.

h) Release the Retrieve Winch Parking Brake.

i) Connect the Safety Fence to the hitch point on the front of the Retrieve Winch. Ensure the tow hitch is correctly engaged.

j) Recover the Retrieve Winch and Safety Fence to the parking area/apron adjacent to the club house/MT shed or relocate it as directed by the duty instructor of the day.

k) If the Launch Point is being relocated follow the procedure detailed in Section 4 (Retrieve Winch Positioning and Setting up) of this document.