



# **Mobile Climbing Wall Operational Procedures October 2009 (Revised January 2012)**

## Inventory

1 x 24ft /4 sided trailer wall (chassis number 4MA – 24051)

120 x hand/foot holds

Special Information Board

4 x padded support feet covers

4 x Spectator Barriers

4 x Vinyl Barrier Infill

4 x Steel Mallions

2 x Flagpoles

7 x Support feet “wooden packers”

1 x Electric Master switch key (+ one spare)

4 x Storage/Pump box keys

1 x Spare Wheel

1 x Spare Wheel wrench

1 x Allen Key

1 x Manual

## **Safety First!**

Always make safety your first concern when setting up, operating, or taking down your mobile climbing wall.

 **CAUTION.** This is a safety alert symbol. It is used to alert you of potential personal safety hazards. Please read all safety messages that follow this symbol to avoid injury or death.

 **CAUTION.** For your safety, read all instructions in this user's guide before operating your mobile climbing wall.

## SAFETY RULES FOR MOBILE CLIMBING WALL SETUP

Follow these safety rules to set up the climbing wall correctly.

- Don't set up or operate the climbing wall near overhead electrical lines, roof eaves, trees, or other obstructions, likely to impede the top of the wall.
- Don't set up or operate the climbing wall in windy conditions (winds with gusts of 30 mph or more.) It is **strongly** recommended to set up wall with the front facing **into** the wind whenever possible especially with winds exceeding 20 miles per hour.
- Set up the climbing wall on a level surface (3 degrees slope max.). You can level the wall with the adjustable legs on the chassis, but it is **important** to start with the most **level** ground or floor possible.
- Set up the climbing wall only on a firm surface. **Never** set up the wall on soft ground or unstable ground.
- Extend the adjustable support legs only on solid ground or solid floor. It is permissible to use a packer board (as provided) but is **strictly forbidden** to stack more than one packer board on top of another.
- Although you can set up the wall by yourself, it is better to have a second person to help. This person can warn you during set up of potential problems or hazards.
- Keep the area **clear** of people, cars, etc., during set up.
- Don't climb on the backside of the wall or its supports.
- When operating wall it is imperative to barrier a climbing side area and then designate a spectator area to preclude any climbers from landing on spectators.

## INSPECT THE MOBILE CLIMBING WALL BEFORE USE

The maintenance section of this user's guide includes comprehensive details for making a complete inspection. Read that section carefully.

### SET UP

 **CAUTION.** For your safety, read all instructions before setting up the climbing wall.

**Note: THESE INSTRUCTIONS MUST REMAIN WITH TRAILER AND ALWAYS CONSULTED WHEN RAISING AND LOWERING TRAILER WALL.**

1. When parking trailer please ensure the site is as level and as firm underfoot as possible and the trailer is correctly orientated.
2. Apply handbrake, lower jockey wheel unhitch and move tow vehicle away from trailer.
3. Engage parking brake fully by 'rocking' trailer from left to right to overcome reverse braking override.
4. Remove locking retaining pin from side steady beam, pull out beam and replace pin in outer hole setting of beam. Repeat on remaining 3 beams.
5. Set down adjustable side steady leg using **Allen** key provided onto its load spreader board, ensuring clamp is set correctly on leg, now wind down steady leg until it has taken up the suspension compression. Repeat on the remaining 3 legs. If necessary it is useful to bring the trailer to a more level state by these adjustments if parking on a slightly out of level site is unavoidable. It is recommended to keep the trailer tyres on the ground whenever possible.
6. Extend the belay support bars into position and attach the belay units to the wall, ensuring the 'brake' drum on the unit faces **outwards**. Also ensure carabiner/mallion attaching the belay to wall is in the closed and safe position. Unreel the tape and fix the harness karabiners to the eyes at the bottom of the wall. **Double check** all belay arm securing pins and karabiner/mallions, are in closed/locked position.
7. Plug in the remote control box and activate the battery master switch.
8. Ensuring the surrounding area is clear raise the wall until it reaches a 45° angle. Remove locking pins from front steady beams located at the foot of the wall. Pull out both beams and replace locking pins in outer hole setting of beams. **Now** extend front steady legs allowing for a generous amount of **preset**. Note: it is recommended when raising the wall that it is done in one smooth continuous movement and not in 'jerky' steps.
9. Again ensuring surrounding area is clear raise wall fully until front legs touch the ground, ensuring that the bottom of the wall does not foul or come into contact with the ground. (if wall does ground raise wall by adjusting side steady legs on front beam). Then remove preset on front steady legs and raise wall fully again until its hydraulic travel is complete.

10. Having raised the wall it may be necessary to re-adjust steady legs to get the wall into its vertical planes. It is always preferable to lower rather than raise the wall to find vertical planes utilising the steady legs on the main front beam. Ensure all legs are on the ground. In use, the steady legs should continually be checked for firm ground contact.
11. Lower steady leg at bottom/inside of wall onto a load spreader board and adjust accordingly.
12. Switch off battery master and remove key. Unplug remote control box, store safely in machinery box and lock lid.
13. If necessary, take up play between trailer and wall by winding in 'T'- Bar adjusters located at bottom/rear of wall.
14. To lower wall, ensure surrounding area is clear.
15. **RAISE STEADY LEG AT BOTTOM/INSIDE OF WALL**
16. Ensure machinery box lid is closed. Raise front of wall using the steady legs on the main front beam to ensure wall does not foul ground.
17. Now lower wall and ensure wall is fully down and hydraulic travel is complete.
18. Now follow erection instructions in reverse.
19. These instructions are **designed** to be used in accord with the practical **demonstration/training** that owners have received from the manufacturers when taking delivery of their mobile climbing wall.

## PREPARE FOR OPERATIONS

These final steps will make the climbing wall ready for climbers

1. It's essential to have a group control barrier (as supplied), around the climbing wall to create a "climbing side" area. Use roping/taping to keep those waiting to climb out of the climbing area or provide a place for climbers to line up.

### ROCK WALL IMPORTANT INFORMATION

- Minimum weight 75lbs (34kg) Max. 310 lbs (140kg)
  - No high heels
  - No loose clothing, scarves or key chains around neck
  - Helmets are provided for your safety it is essential to use them
  - Climbing is a strenuous activity; do NOT attempt a climb if you have any back or neck injuries or associated pains.
  - Do not attempt this exercise if you are pregnant, have a weak heart or condition not suited to strenuous activity.
  - Do NOT undertake a climb if you are under the influence of drink or drugs.
  - We reserve the right to refuse anyone we feel is not suitable for this activity.
  - Spectators are asked strictly to keep behind the safety barrier.
  - Do NOT climb wall without harness and belay system attached.
  - The operators reserve the right to collapse the wall depending on prevailing conditions.
  - It is imperative that the climber listens to and understands the operator's pre-climb briefing and any instructions he or she gives throughout the duration of the climb. Failure to do so can result in the climb being terminated.
  - An accident book is available and any injury to a participant should be notified to the Instructor, recorded therein and signed by the injured person or their representative.
2. Make sure group and spectators are clear on your procedures.
  3. Make sure you are in compliance with any applicable rules and regulations at the site or event.
  4. You should have a plan established for handling contingencies like medical or other emergencies, even though these are unlikely to occur. Make sure every member of your crew knows this information.

## OPERATIONS



Read all instructions before operating the climbing wall. Climbing is a physical activity and all possible care should be taken to ensure the safety of the climbers, spectators, and operators. Always operate the climbing wall according to the procedures described here.

Operating techniques.

1. Make sure to keep the landing area clear of spectators.
2. Use a minimum staffing of two.
3. When not in use, you must keep all belay ropes attached to their corresponding eyes at the bottom of the wall. If you accidentally pull a rope, it will retract to the top of the wall, and you will have to retrieve it manually.

## SAFETY RULES FOR YOU, THE INSTRUCTOR

- Don't climb on the back side of the wall or its supports
- Don't stand on top of the wall
- Don't stand underneath a climber while climbing is in progress.
- Don't leave the climbing wall unattended at **anytime**.
- Always instruct climbers on how to put on or take off a harness, check harness prior to each go at climbing.

## SAFETY RULES FOR YOUR CLIMBERS

It's a good idea to make climbers aware of some simple rules.

### Before your climb starts

- After you are hooked into your harness, stay in the harness area. Wait until we tell you to go to the climbing area.
- Instructors will check all ropes attached to climbers and belayers.

### During your climb

- **Never** hook yourself to the belay rope.
- Always stay on your climbing route.
- Don't cross over to put yourself directly beneath or above other climbers.
- Don't climb without shoes or a top
- Don't climb beyond the wall top. Don't go beyond head-height to the wall top.

### During your descent

- Don't kick off more than 2 or 3 feet from the wall
- Rappel straight down, and don't swing too close to other climbers.
- Be alert for other climbers beneath you, who may have strayed from their routes.

### At the end of your climb

- When you are lowered to the ground at the end of the climb, land on your feet.
- Disconnect rope and change over climbers and belayers, wait to start climbing again.

## Special Situations

The vast majority of climbs take place without any difficulty or interruption, but sometimes a problem can occur. Here's what to do.

#### Climber frozen at top

1. Ask the climber to stay calm, Say that you are going to come up and help him or her down.
2. Put on harness.
3. As the climber next to the frozen climber finishes his or her climb, tie onto the Belay rope and climb the wall.
4. When you reach the frozen climber, show him or her the footholds to climb down.

Note: Encouraging the climber to be lowered down may not work.

#### Climber reports discomfort.

1. Ask the climber to stay calm. Ask the climber if he or she is comfortable to be lowered down. If so, then ask him or her to do so (if not, follow the procedure for "Climber frozen at top" above).
2. If the problem is with his or her harness comfort, then adjust the harness, and let the climber begin his or her climb again.

#### **Climber is intentionally reckless**

1. Ask the climber to take it easy. Choose one of the following options if he or she persists:
  - a. If you do not believe adjacent climbers would be endangered, tell the reckless climber to rappel down or climb down now; or
  - b. If you believe other climbers might be endangered, tell the reckless climber to freeze at their position, and ask the other adjacent climbers to rappel down first (you can let them restart once the reckless climber is removed from the wall). Then, tell the reckless climber to either rappel down or climb down.
2. Unhook the climber and they will be removed from the session.

## TAKEDOWN

 **CAUTION:** for your safety, read all instructions before taking down climbing wall.

 **CAUTION:** Keep the area clear of people, cars, etc., during all steps of the takedown.

- Please refer to operator's instructions for take down.

### RECONNECT THE TOW VEHICLE

1. Back the tow vehicle into position so that its towing ball is positioned under the climbing wall's trailer coupling. If you have a second operator, have him or her stand by the trailer to guide you in position.
2. Position the tow vehicle's towball as close as possible to the towball coupling of the trailer to minimize your having to manually move the trailer into place.

 **CAUTION:** Try to avoid the need to manually position the trailer! If you must, do so only for the last few inches. Do not attempt to pull the trailer by hand, as this could result in serious injury.

3. Retract the jockey wheel by cranking clockwise until the trailer coupling lowers onto the towball..
4. Secure the coupling lock over the ball. \*Look under coupling to make sure the ball is secure.
5. Reconnect the safety snatch cable.

 **CAUTION:** Be sure the safety snatch cable is securely connected! Should the coupling fail during transport, the safety snatch cable can help avoid a towing catastrophe.

6. Reconnect the trailer plug into electric socket on tow vehicle thus electrically connecting the trailer and the tow vehicle.
7. If you have a second operator, have him or her stand behind the trailer while you test the indicators, brake lights and lights to make sure they are operating properly.
8. Take a walk completely around the wall and trailer to inspect it carefully. Make sure that everything is secure and stowed properly before leaving the site.
9. Drive the tow vehicle and the climbing wall away.

## Safe towing tips

We encourage you to be a safe, courteous driver when towing your climbing wall. Keep the following in mind when towing your wall on the public roads.

- Be sure to use the safety cable at all times.
- Be sure the sidelights, brake lights and indicators are functioning properly.
- Be sure the trailer brakes are working correctly.
- Be sure your trailer has the correct number plate affixed to it. (corresponding with the tow vehicle).
- The legal speed limit on the Isle of Man, for towing is 30mph. Be especially cautious (and reduce your speed) when encountering windy, rainy, or even icy conditions.
- Always signal before changing lanes or turning.
- When you change lanes, be aware of traffic behind you and at your sides. Allow plenty of clearance before changing lanes.
- Always plan your route carefully as to avoid dead end roads, or excessively narrow lanes, as reversing out of these problems could prove difficult or even impossible.

Practice reversing your trailer where there is plenty of room before you try it on the open roads or at your destination. As with any trailer, when reversing, turn your steering wheel in the opposite direction of the direction you want the trailer to move.

## WHAT TO INSPECT ON YOUR WALL

Inspect the mobile climbing wall thoroughly before you take it out for use. Your safety on the road, during set up and your climber's safety will depend on it.

### Wall Lift system

Raise and lower the wall. Make sure the wall lifts smoothly and completely. If the wall does not raise or lower completely, or there is any hesitation in its motion STOP the wall, do not carry on with session.

Check that all the electric connectors on the hydraulic lift pump (located in lift pump box) are properly tightened. Tighten if necessary.

Check that all hydraulic connectors/unions around the pump and all the way to the lifting rams are properly tightened. Tighten if necessary. Also check condition of rubber hydraulic hoses, if there is any doubt on their condition (cuts, abrasions, degradation of rubber) replace if necessary.

### Support Legs/Jacks

Your mobile climbing wall has a total of seven support legs. Ensure that the legs are lubricated regularly and functioning correctly.

### Belay support bars

Visually inspect belay support bars for any damage or cracks. If in doubt replace as necessary. Also visually inspect belay support locking pins, and ensure they are in good condition.

### Loose or broken parts

Inspect the entire climbing wall for any chassis cracks. Inspect hand/foot holds for damage or cracks and ensure that they are tightened correctly. Inspect trailer chassis for any cracks, loose nuts or bolts, replace or tighten where necessary.

### Karabiners

Ensure all karabiners utilised with the wall lock properly. All surfaces of the karabiners should be free of cracks, sharp edges, corrosion, burrs, or excessive wear. Be sure the gate and any locking mechanism closes freely and completely. Gate opening and closing should be quick and easy. If washing and drying does not remedy a sticking karabiner, **replace it**. Ensure rivets are not bent, loose, or missing. Replace karabiners regularly.



If a karabiner does not pass inspection (even after cleaning), destroy it and replace it with a new one. This is absolutely critical for safe operation. Always keep a spare karabiner on hand.

### **Trailer towball coupling**

Make sure the trailer towball coupling is operating correctly. Make sure the trailer coupling lock, locks down the coupling to the towball securely and it cannot be lifted off without first lifting the release handle on the coupling. Inspect the safety cable and its mounting hardware for wear. If at all questionable replace it.



If you are in any doubt whatsoever about the towball coupling or the safety cable consult an auto engineer or auto service centre. This is critical for safe transport! Should the trailer become uncoupled during transport, this could cause a major accident.

Make sure the bolts holding the towball coupling assembly to the trailer are tight and in good condition.

### **Trailer Lights**

Connect the electric trailer plug to the towing vehicle socket. Be sure the side lights/brake lights and indicators are performing correctly. If a malfunction is found take appropriate action to remedy.

### **Trailer wheels/tyres**

Trailer wheels/tyres should always be visually checked before each journey, and should be in good repair and legal.



Transporting the trailer with any malfunctioning lights, even for a short distance, can be a serious hazard and is against the law!

## **CLEANING AND OTHER SPECIAL CARE**

### **Wall and Trailer**

Clean the mobile climbing wall as you would a boat, camper van, or recreational vehicle. Use a solution of warm water and dish soap to remove dirt from the wall and trailer and then hose off. Alternatively you can use a standard "jet wash" to clean your wall.

Store your mobile climbing wall as you would a boat, camper van or recreational vehicle.

Storing the climbing wall in a covered shelter or garage will keep it cleaner and preserve its appearance longer.

Storing the climbing wall outdoors is no problem. However you may want to place a tarpaulin over it to preserve the finish from excessive exposure to the sun.

### **Karabiners**

Keep karabiners dry and clean. Protect them from corrosion. Do not store them in very humid or salty air, with damp equipment or clothing, or near corrosive chemicals. Do not file karabiners for any reason. If notches appear, replace the karabiner. If a karabiner gate sticks, wash it in warm soapy water, rinse thoroughly and lubricate with either dry graphite or Teflon lubricant around the hinge area, inside the spring hole and locking mechanism.

### **Ropes & Harnesses**

Refer to the manufacturers recommendations for cleaning

Protect from the elements

Do not store harnesses or ropes for extended periods in direct sunlight

## MAINTENANCE SCHEDULE

The following components/items are to be regularly maintained/checked and be served as a maintenance schedule.

- Grease nipples – should be greased regularly
- Type pressures – checked regularly
- Brake adjustment – checked and adjusted annually
- “A” frame locking pins – greased regularly
- Hydraulic pump oil level – checked regularly
- Battery charge and Electrolyte level – charged and checked regularly
- Hydraulic pipe work and unions – regularly check for fluid leaks and for signs of chaffing.
- Trailer lights – checked every journey
- Wheel stud torque – 88Nm (65 lbs /ft)
- Tyres – inspected regularly changed when necessary.
- All locking pins – inspected regularly and lubricated where/when necessary.
- Support legs – Greased regularly
- Trailer wall to be jet washed regularly – especially if trailer wall has been exposed to road salt. If this is the case it is imperative that the trailer wall should be washed with a soap solution to neutralise the corrosive properties of the salt.

# Risk Assessment – Mobile Climbing Wall

Minimum Leader Qualification	Assessed by Technical Adviser	Minimum Assistant Qualification	Assessed by senior instructor
Max group size with Leader	6	Max group size with Assistant	12

**If the wall is being operated at a Fair or Fait, a senior member of Adventure Education Staff must be present at all times.**

Hazard	People at Risk	Control Measures	Risk (minimal, manageable, unacceptable)
Falling	Participants	Ropes to be attached and checked before climbing Belayers to be given suitable training and be supervised	Manageable
Falling objects i.e. Phones, I pods	Staff, Participants & Non-participants	Barriers to be placed around the base of the wall indicating climbing zone and safe area Helmets to be worn inside the climbing zone at all times and non-participants to wait in safe area Ask climbers to zip up pockets or empty them Communication ("Below") to alert group of falling objects	Manageable
Equipment failure	Staff & Participants	All equipment to be checked before and throughout the session and replaced in accordance with guild lines	Minimal
Becoming entangled in rope when lowering/being lowered	Staff & Participants	Belayers to be trained and aware of ropes. Climbers to be aware of ropes	Manageable
Failure of anchors and belay points	Staff & Participants	All permanent anchors to be checked regularly for corrosion and improvised	Minimal
Cuts and grazes from rough surface of the wall	Participants	Instructor to coach climbing techniques and lowering of the climber 1 <sup>st</sup> aid kit to be carried	Manageable
Hand burnt when lowering/being lowered	Staff & Participants	Climber to be told which rope to hold Belayers to be given training on lowering climbing safely Gloves can be worn where appropriate.	Manageable
Climber being lowered onto jockey wheel	Participants	Belayers to be made aware of danger and covers to be used at all times	Manageable
Walking into trailer	Staff, Participants & Non-participants	Area to be taped off	Minimal

## Essential equipment

Personal – Harness, helmet, climbing shoes (if available) & personal medication. *Also check for warm clothing, waterproofs and appropriate footwear*

Leader – Harness, helmet, ropes, karabiners, belay devices, group first aid kit, knife, phone, medical info for the group