



## **Practical Exercise Statement – MPD Belay**

**Time Allotted:** 1 Hour

**Purpose:** The purpose of this exercise is to review the use of the MPD as a belay device.

**Terminal Learning Objective:** The student shall correctly rig the MPD, and utilize it as a belay device during lowering and hauling operations.

**Enabling Learning Objectives:** Given an equipment cache, and following a period of instruction, the student shall:

- Correctly rig the MPD.
- Manage the belay during hauling and lowering operations
- Describe the advantages of an MPD belay
- Describe the disadvantages of an MPD belay.
- Demonstrate releasing the belay when it has been loaded
- Demonstrate making the MPD belay “safe” by locking off the belay.

### **Equipment Needed:**

- 100' – ½" rescue rope
- 1 – Large 'G' rated carabiner
- 1 – Anchor Strap or suitable anchor
- 1 – MPD

### **Instructor's Notes:**

This exercise is designed for 4-6 students. The instructor should begin by discussing the use of an MPD as a belay device. The instructor should highlight the features of the MPD, including anatomy of the device, the rigging diagram, the control handle, and the parking brake.

The instructor should demonstrate the proper technique for each operational mode. After the demonstration, have each student perform the skills required for each application:

### **Belaying Lowering Systems:**

- When belaying a lowering system, once the rescuer has good control of the load and is in the correct descent path (this often occurs within 10 meters [33 ft.] of the descent), it is recommended to convert from hand-tight Belay Line tension to shared tension between the Main Line and Belay Line. Should the Main Line system fail from this point on, a Shared Tension system will minimize rope stretch and provide a considerably reduced arresting distance

as compared to a conventional untensioned belay. It will also help mitigate other hazards, such as an inadvertently slack Belay Line or rope-induced rockfall, since the now-tensioned Belay Line will be suspended above the terrain between contact points, just like the Main Line.

### **Belaying the Edge Transition**

- To ensure proper hand-tight tension of the Belay Line (such as during edge transitions), firmly grip the load end of the rope with one hand and apply friction, so that there is no slack in the rope between the load and your hand. The other hand feeds the running end into the MPD so that the ***rope is unseated from the sheave tread***. This will reduce rope drag on the sheave and keep the MPD from inadvertently locking up. This technique allows the operator to match the speed of the Main Line. In contrast, the technique of trying to simultaneously shuffle rope into and out of the MPD will result in a repetitious start-stop motion of the belay rope and will likely result in frequent unwanted lockups.

### **Belaying Hauling Systems**

- If the load is being raised, then the Belay Line can simply be pulled hand over hand through the MPD. However, if the distance the load has to be raised is greater than approximately 30 m (100 ft.), it is recommended to convert the Belay Line system into a simple 3:1 mechanical advantage pulley system to assist with the raising of the load. The load can be raised more efficiently if the Belay Line assists with the raising, since it is possible that a lower mechanical advantage will be required by the Main Line. This will also take the stretch out of the line. For the final edge transition, convert back to a 1:1 system using only hand-tight tension on the Belay Line by pulling it hand over hand through the MPD.