CAVE Bouldering Wall at Worcester Polytechnic Institute Operating Manual

WPI Outing Club
[Address Information]
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http://oc.wpi.edu
Manual Outline

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I. Overview
1. Project Description
The CAVE bouldering wall is an on-campus IQP developed by a group of WPI students. The CAVE will serve as a recreational facility open to all members of the WPI community. The main obstacles faced by the developing team are as listed:
- Survey the WPI community for their interests
- Allocate all the necessary resources.
- Allocate a space for the construction
- Resolve all the liability concerns
- Construction of the wall, transforming the room in a recreational facility for the WPI community.

2. Goals and Objectives
The primary goal of the CAVE project is to provide the WPI community with a convenient on-campus bouldering wall for fitness and social purposes. Basic instruction in climbing and safety procedures will also be provided by staff members.

II. Operating Guidelines
1. Hours of Operation
The bouldering wall will be open three days a week, Tuesday, Friday, and Saturday from 6pm until 11pm. Additional hours may be added by staff members as they wish.

2. Rules
All participants, observers, and staff must abide by the rules. The rules will be prominently displayed near the wall at all times. Individuals violating the rules will be warned appropriately. The staff reserves the exclusive right to expel any individuals failing to abide by the rules. The rules for the wall are as follows:

1. All climbers must be members of the WPI community.
2. Climbers must check in with the on-duty staff member before climbing.
3. Climbers must pass a spotting proficiency class and complete a Participant Agreement, Release, and Acknowledgement of Risk
4. Any minor must have the Participant Agreement signed by a parent or guardian.
5. Parents are responsible for the actions of their children.
6. Absolutely no drugs or alcohol are allowed at the climbing wall.
7. Please remove all jewelry, watches, keys, etc. These objects can cause injury to you and/or your spotter(s). These objects are also bad for the crash pads.
8. Never climb alone! You must always have a spotter, and there must always be a staff member present in the room.
9. Pay attention! If you are spotting a climber, your responsibility is to guide the person in the event of a fall. Not being attentive to the climbers every action/movement can result in injury to you, the climber, or others.
10. Only climbers on routes, spotters guarding climbers on route, and staff members may be in the climbing area.
11. The Climbing Wall is not responsible for lost or stolen articles.
3. Instruction
   The staff will provide a brief (30 minute) class to new climbers to teach them the basics of
   spotting. This class will be given to groups of climbers or individually, depending on the activity
   at the wall. An outline of the class is given in the “Staff” section of this manual.

4. Maintenance
   The wall will be routinely inspected before opening by staff members for any potential hazards.
   If there is reason to believe the conditions of the wall are unsafe, the wall will not be opened
   until the issue is resolved.

III. Staff
   The wall must be staffed at all times when open. The staff member(s) may spot climbers if there are
   no spotters available. The staff members have the right to disallow anyone from using the wall if
   safety becomes a concern or if the rules are not being followed.

1. Schedule
   The staffing schedule will be posted on the WPI Outing Club website, as well as physically
   outside the wall. Staff members are encourage to use the website and make printouts of the
   schedules to post outside the wall.

2. Responsibility
   The primary goal of the staff members is to ensure the safety of the climbers. The two main
   ways of ensuring safety are through instruction and spotting.

3. Office Procedures
   The staff members must file the Participant Agreement, Release, and Acknowledgement of
   Risk forms in the Outing Club filing cabinet. The staff members must check all climbers to
   ensure they have signed all necessary documentation and agreements.

4. Qualifications
   Staff members must have the following qualifications:
   1. Current CPR/First-Aid certification (from Red Cross, AHA, or similar organization)
   2. Satisfactory completion of the spotting instruction class.

IV. Safety Program
   1. Equipment Inspection
      Before the wall opens, the staff member(s) on duty must inspect the wall to ensure that it is
      safe to climb on. This includes positioning the crash pads and ensuring there is no damage
      to the wall itself.

   2. Spotting Class[2]
      Overview: The spotting class will last approximately 20 minutes.
      1. Introduction to the facility and explanation of bouldering
         a. Instructor shows around the wall, pointing out vertical and overhanging sections.
      2. Explanation of purpose and style of bouldering:
         Short climbs, no ropes: Every fall is a ground fall
      3. Safety features of the gym
         a. Instructor points out mats. Explains that they should be clear of all items (e.g.
            food, drink, gear, shoes, people)
            that could potentially cause a falling climber to injure his or her ankle or back.
         b. Spotting
            Instructor talks about what spotting is, why it is used, when it should be
            used and how it should be performed.
This is approximately what the instructor has to say:

1. About spotting in general: Spotting is a crucial part of climbing extreme bouldering routes. The goal of a spotter is not to catch a bouldering climber when they fall, but to break their fall to prevent a serious head injury and steer them into a safe landing. Assume a solid stance on the ground, with legs slightly bent, and arms outstretched towards the climber and slightly bent, ready to break a fall. If the situation could result in a potentially dangerous fall, get two or even three spotters to break the climber's fall. This is more of a concern in outdoors scenarios with taller boulders.

2. About spotting priorities:
   i. Your highest priority is to protect the boulderer's head and spine.
   ii. The next priority is to steer the boulderer toward a good landing.
   iii. Last, if possible, reduce the force of the boulderer's fall.

To spot well, know the problem and anticipate the moves. Focus on the boulderer's center of gravity. With most men this is a few inches above the belt line. With most women, it is at the belt line.
Don't make the mistake of watching hands, arms, feet, or legs. These tend to fly about giving the appearance that the climber is falling, even though he or she may still be hanging on.

3. About spotting technique for vertical walls:
A climber will usually fall feet first from a vertical wall. Grab the boulderer by the hips and steer him to a good landing. Absorb some of the fall with your arms and legs. The boulderer absorbs the rest of the impact with his or her legs. [Instructor demonstrates position].

4. About spotting technique for overhanging walls:
When falling off overhangs the body often falls at an angle to the ground, instead of feet first. In these hazardous cases grab further up the body (above the center of gravity), along the upper lats or underarm. This will cause the body to rotate feet downward. Steer the climber to a good landing and absorb the impact as above. [Instructor demonstrates the technique with a partner].

5. About common sense and judgment of situation:
Sometimes the best a spotter can do is push the falling climber away from danger and into a safer landing position. This is more of a concern for outdoors bouldering. However, even in the gym, one should always make sure that the safety rules are being followed, and no danger is created. Over-zealous spotting is preferred to no spotting, but you should not support the climber while he or she is still on the problem - your job as a spotter is to break the climber's fall when he or she is falling.

4. Instructor repeats safety rules:
   a. Keep mats clean and clear of all items
   b. Keep clear of area if not spotting (i.e. don't walk underneath a climber)
   c. Use caution when climbing and don't climb in each other's way
   d. As a climber, be aware of your body position so you can land safely on your feet
e. Use a spot if you need it
f. Use common sense and good judgment and be aware of your surroundings

5. Practice spotting
   All practice happens one at a time, with instructor(s) watching.
   Scenario 1: Feet-first fall from a vertical wall
   Scenario 2: Fall from an overhang
   Scenario 3: Fall from a weird position overhanging (climber remembers to be aware of his or her position and try to land safely, spot remembers to steer to safe landing)
   Scenario 4: Two spotters working together (making sure they know each other's responsibilities)

V. References
  1: CAVE- An On Campus IQP Proposal (posted in the Outing Club website: oc.wpi.edu)
  2: MIT Climbing Wall Operating Manual
**Example Maintenance Log Page:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Staff</th>
<th>Description of Problem</th>
<th>Solution( and personnel involved)</th>
<th>Date repaired</th>
</tr>
</thead>
<tbody>
<tr>
<td>08/15/09</td>
<td>FP</td>
<td>T-nut popped out of panel 3 while trying to place a hold</td>
<td>FP – Replaced with a new T-nut</td>
<td>08/22/09</td>
</tr>
</tbody>
</table>

**Example Usage Log:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Name</th>
<th>E-mail</th>
<th>Join Outing Club mailing list? Y/N</th>
<th>Comments</th>
</tr>
</thead>
</table>