

FIELD TRIP #6 PREP – CREVASSE RESCUE PREP

Prep for Crevasse Rescue Test

FIELD TRIP #6 PREP – CREVASSE RESCUE PREP	
Time:	Date: May 30 th or 31 st Starting Time: 6:30 pm (Arrive by 6:15 pm and be ready to start at 6:30 pm) Duration: Approximately 3 hours
Location:	<i>Old Town Park- West of Tacoma Club House- N 30th Street (outside)</i>
Prerequisites:	<ul style="list-style-type: none"> ▪ Attend lecture #5
Assignments:	<ul style="list-style-type: none"> ▪ Reading: <i>Freedom of the Hills, 9th edition</i> Glacier Travel and Crevasse Rescue Ch 18 ▪ Study: Information contained in this section Information required for Lecture 3
Purpose:	Practice 3:1 (Z) pulley crevasse rescue system Practice 2:1 (C) pulley crevasse rescue system Talk about Direct Pull crevasse rescue

EQUIPMENT

See Required Equipment FT 6 P on the Equipment Matrix (Lecture 1)

PROCEDURE

When you get to the clubhouse, put your gear on and find a group. You will need to start practicing the 3:1 (Z) pulley team crevasse rescue method. Time permitting you will also get a chance to do the 2:1 (C) pulley double rope crevasse rescue method.

For the 3:1 (Z) pulley method, you will have 20 minutes to set up the system and start “rescuing” your fallen climber. If you cannot finish it in this amount of time (or honestly) if you cannot do it in closer to 15 minutes, you need to get some more serious practice in before the test. During the testing scenario you will have 30 minutes to build the system. Here at the park, you will only be simulating probing, the rope will not be fully stretched out, and you won’t be building/digging anchors. Instructors are expecting that you come prepared knowing the steps of the rescue at this field trip. They are expecting you to be ready, and to be refining your technique. This is your last chance to ask questions before you get tested on this essential skill.

Note: Practice should be done with gloves on since this is the most likely scenario in a climbing situation.

CREVASSE RESCUE RESPONSE

It should be understood, that with many systems and techniques in climbing, the best method to use or system to build, how to build it, and the order in which it is built, is dependent on the situation and gear at hand.

With this being said, crevasse rescue is another one of those situations and systems. Some of the major considerations, when determining the best a crevasse rescue plan, are going to be:

1. Which climber fell into the crevasse.
2. Snow pack analysis, which determines:
 - a. The type of initial anchor that should be used (vertical top clip or mid-clip picket).
 - b. Whether or not you should build a second anchor before or after the middle climber gets up.
 - c. If the rope is likely to be wet and icy or deeply entrenched in the snow.
3. Number of climbing teams available
4. The terrain – are you on a steep slope or are there many crevasses around?
5. Condition of the victim.

Minor considerations:

1. Using a Bachmann or a prusik to the initial anchor.
2. Should your chest prusik go between both pulleys or on the tail behind the travelling pulley.
3. Should you use your ice axe or backpack to pad the lip.
4. Etc.

With all these things (and more) to consider, you should understand that there are many ways to perform crevasse rescue. In the Tacoma Basic Climbing Course we are only teaching one basic method. So as you read through the steps below, make sure you understand that the noted assumptions make it so that the way we are teaching it, is what we believe to be the best way possible, given the provided situation. Once you get these basic steps down, try to think about the other ways you could perform this skill if the situation was different.

BASIC STEPS ALL CREVASSE RESCUE

1. Arrest the fall
2. Set up an anchor
3. Communicate with the victim
4. Devise a plan
5. Carry out the plan

SUMMARY OF THE STEPS OF CREVASSE RESCUE

STEP 1: ARREST THE FALL

Assumption/Situation: the end/last climber is the victim, is conscious, and cannot get out of the crevasse on their own.

- A. First Response – the victim/end climber yells “FALLING” and the falls into the crevasse. NOTE: The whole team should yell falling too as soon as they hear it, and instinctively jump into arrest position.
- B. The remaining rope team members (lead and middle climber) do whatever is needed to arrest the fall. Ideally you will jump/hit the ground in the opposite direction of the fallen climber, and dig your ice axe and feet/crampons into the snow.
- C. Climbers yell to each other, trying to figure out what happened, and then start to devise a plan.
 1. The middle climber tries to communicate with the fallen climber.
 2. The middle climber communicates the situation to the lead climber.
 3. The lead climber asks the middle climber if they are able to hold the fallen climber’s load.
 4. Assuming yes, the lead climber slowly gets up to transfer the full load of the fallen climber to the middle climber. NOTE: if the middle climber starts to slip, the lead climber needs to immediately get back into arrest position.
- D. The lead climber quickly prusiks (using their seat harness prusik) and probes the snow as they travel back towards the middle climber.

STEP 2: SET UP THE ANCHOR

- A. Once the lead climber reaches the middle climber, they evaluate the surroundings by continuing to probe the snow around both sides of the middle climber and about 5-10 feet below the middle climber’s feet; determining if the area is safe.
- B. Assuming the area is safe, the lead climber begins to set up the initial part of the rescue system. This system is comprised of an anchor system (initial and secondary anchor) attached and secured (using friction hitches and back up knots) to the victim’s end of the rope.

NOTE: As mentioned above, the anchors used and sequence of the following steps are very situationally dependent.

 1. Build the initial anchor: Vertical Top Clip Picket. Assumption: On a gentle slope and the snow pack is knife hard (see anchors information in FT 7).

Vertical Top Clip Picket Characteristics:

 1. The top hole of the picket is girth hitched using a single or short sling.
 2. Placed inline/parallel with the rope.
 3. Placed 5-10 feet down from the feet of the middle climber.
 4. Placed 15-25 degrees back from perpendicular to the slope.
 5. Hammered in until the sling meets the snow line of the slope
 2. Attach the anchor to the rope.
 1. Tie a Bachmann hitch to the rope.

2. Attach the single/short sling off the picket to the perlon of the Bachmann hitch with a locking carabiner. Lock the carabiner.
3. Slide the Bachmann hitch down the rope toward the fallen climber, tensioning the anchor.
3. The lead climber now guards the anchor (putting their uphill foot over the sling next to the head of the picket), let the middle climber know they can slowly start to stand up.
4. The middle climber slowly gets up, as the lead climber watches to make sure the Bachmann knot catches and holds the load. If the bachmann knot does not hold, the lead climber should immediately stop the middle climber from getting up, and fix the problem.
5. The middle climber comes over, personal anchors into the sling of the initial anchor, and then swaps places with the lead climber, guarding the initial anchor. They should remain ready to arrest again if the anchor fails.
6. The lead climber now attaches a pulley to the loose section of rope, and clips the pulley with a non-locking carabiner to the locking carabiner of the anchor.
7. The lead climber backs up the system by tying a figure eight on a bight behind the pulley (on the loose rope toward the middle climber), and clips it into the non-locking carabiner of the pulley.
8. The lead climber takes the middle climber's picket (which should have a double runner girth hitched to the center hole and a locking carabiner on the end of the sling) and builds a secondary anchor.

Secondary Anchor: Deadman

Deadman Characteristics:

Assumptions: On a gentle slope and the snow pack is knife hard (see anchors information in FT 7)

1. The slot for this anchor sling should be at about a 30 degree angle with the initial anchor.
2. The depth of the trench for the picket should be at least as deep as the object (ie. 24 in. picket, 24 in. deep trench).
3. The picket should be perpendicular to the direction of pull.
9. The lead climber goes back to the middle climber, who:
 1. Gives the lead climber a pulley and prusik on a non-locking carabiner.
 2. Unties from the rope.
 3. Continues to monitor and guard the anchors.

STEP 3: COMMUNICATE WITH THE VICTIM

The end climber now prusiks and probes down to the lip of the crevasse to assess the situation and evaluate the victim's condition. They need to find out:

- A. Is the victim conscious?
- B. Is the victim injured?:
 - a. Does the victim need immediate help, and someone should be belayed down to them?
 - b. Will the victim be able to self-rescue?
- C. How badly entrenched is the rope in the lip of the crevasse?

STEP 4: DEVISE A PLAN FOR RESCUE

For simplicity and basic testing purposes we will assume the following:

NOTE: You will be also be tested on gear management. If you drop an item of gear, you can no longer use it and it will be taken away. If you intentionally put it/stake it down, you can keep it.

A. The Victim:

1. The victim is an end climber
2. The victim is conscious.
3. The victim is not so badly hurt that teammate needs to rappel down and give immediate assistance.
4. The victim cannot self rescue.

B. There will be 2 situations tested, with the following assumptions for both:

- You are on mellow terrain, so there is a low possibility of the lead climber slipping and falling into the crevasse.
- 3:1 (Z) Pulley System Test, Additional assumptions:
 - Your team is the only team available for rescue.
 - The rope is not so badly entrenched that you can't pull the victim out of the crevasse.
- 2:1 (Single/C) Pulley System Test, Additional assumptions:
 - You have a second team to assist with the rescue.
 - This team is needed because either:
 - A. the rope is so badly entrenched that you must use a second rope to pull the victim out of the crevasse.
 - B. This is a faster method to help the fallen climber.

STEP 5: CARRY OUT THE PLAN

1. Implement the method and perform the rescue.

A. 3:1 (Z) Pulley System Test - now that you know the situation of the climber follow these steps.

1. Pad the lip of the crevasse - placing an ice axe under the rope (the head of the ice axe should be facing downhill), and put a non-locking carabiner on the leash and bury it in the snow.
2. Tie a prusik to the rope (leading to fallen climber). Then take the loose rope (the rope between the lead and middle climber), and attach a pulley using a non-locking carabiner to attach the pulley to the prusik.

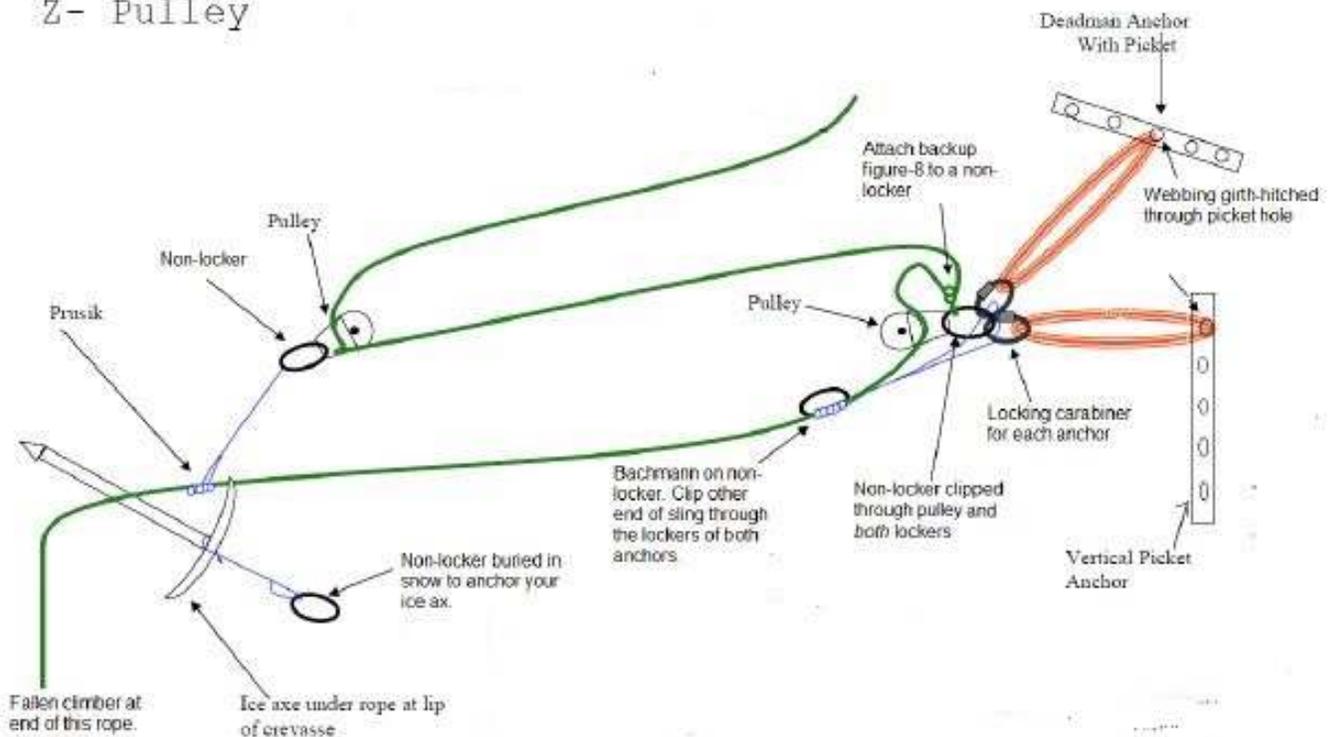
NOTE:

A. Rope management is important in this step. Make sure you attach the prusik at a spot on the rope that will allow you to get back to the anchor.

B. Make sure the lead climber's seat prusik is on the rope between the second pulley and the rope attached to themselves. Not between the two pulleys.

3. The lead climber now (using their seat prusik) prusiks back to the anchor and the middle climber.
4. The lead climber personal anchors into both slings of the initial and secondary anchor.
5. Now the lead and middle climber begin to pull hand over hand on the rope. The middle climber needs to monitor the bachman knot and the lead climber needs to pull while tending their seat prusik.
6. Likely you will not be able to pull the fallen climber out in one try, and will need to reset the system.

Z- Pulley



B. 2:1 (Single/C) Pulley System Test – you are in luck a second team is here to help.

1. The lead climber needs to pad the lip. Same as above.
2. Return to the anchor and personal in.

Second Team – Sets up the 2:1 single pulley double rope system.

NOTE: Lead climber is climber 1, middle climber is climber 2, and end climber is climber 3. Climber 2 may need to re-tie in closer to climber 3 depending on the amount of rope needed to get to the fallen climber.

1. Second team approaches the first team and (for time sake) climber 2 and 3 clove hitch/personal in to both slings of the anchor system set up by the first team. This team could (and potentially would) build their own anchor system if the second rope needed to be set up somewhere else and/or if snow conditions warrant a second anchor.

2. Climber 2 belays Climber 1 to the lip of the crevasse – using the seat harness prusik belay, carabiner ice axe belay, or belay device/munter hitch tending with the rope with the seat prusik.
3. Climber 1 builds an anchor system (same as in the first system) with 2 of the following types of anchors: a vertical top clip picket (if snow conditions are right for it), vertical mid-clip picket and/or a Deadman, and then clips a locking carabiner to the slings of the anchors and clove hitches the rope to the locker.
4. Climber 1 pads the lip of the crevasse (using their backpack or ice axe) to keep the rope from entrenching, where the rescue rope will pass over the lip.
5. Climber 1 attaches a pulley and locking carabiner to a bite on the rescue rope.
6. Climber 1 lowers the pulley and locking carabiner to the fallen climber, and instructs them to clip the locking carabiner to their belay loop on their seat harness, making sure that the rope that is being pulled by the team is coming out of the top of the pulley.
7. Climber 1 then lets the rest of the team know that the fallen climber is ready to be pulled out of the crevasse. Climber 1 needs to monitor and guard their anchors and try to monitor the progress of the fallen climber and communicate the climber's needs to the rest of the rescue team.
8. The remaining climbers (lead climber of the first team, Climber 2, and Climber 3) start to pull the fallen climber out of the crevasse with the secondary rescue rope.

NOTE: At this time, it is critically important for the middle climber to pull the slack out of the system in the original accident rope, so the Bachmann can grab if someone slips or the rescue team needs a break. Keep the existing back up figure eight on a bight tied to the anchors while the other climbers are pulling. Retie the figure 8 after the Bachmann bites the rope again.

