

## Let's Build An Anchor!

First off I applaud you for taking the time to read this article. To me it means that you have some concern for your safety, the safety of others, and an interest in making life easier for others.

Over the past few years I have found myself installing a lot of rappel anchors, in Orient Bay and Kama Bay, for three main reasons; a new climb, the age of an existing anchor, and the safety of an existing anchor. I have noticed many new anchors, replaced by other climbers that in my opinion have no other purpose than to get that particular climbing team down quickly. I am talking about an anchor where the rope runs directly through the existing anchor material, which does not have rap rings on it. When the ropes are pulled through the anchor system enough heat from friction can be generated to significantly weaken most anchor materials (i.e. webbing, cordlette, etc); therefore, whenever I come to an anchor without some kind of rap rings I remove and rebuild the anchor system. I would like to change the current tendency for climbers to just add more material to an existing, questionable anchor. Other enthusiasts who climb to that anchor will need to spend more time inspecting all the TAT to make sure there is enough safe material to descend on. Arriving at a properly built anchor eliminates any confusion and doubt as to the quality of the system; however, even a properly built anchor should be thoroughly inspected given that rodents and sun exposure are the main threats to a sound anchor system.

I, with the help of others, have come up with a strong, easy, efficient and inexpensive way to build a safe anchor system that has the potential to last for several years, depending on location. There are plenty of methods of building a safe anchor. By using the particular method outlined in this article, you can sleep soundly at night knowing that someone else will use your anchor and be safe doing so.

### **Step 1.**

#### **Choose you anchor material.**

5 metres (16 feet) of material should be enough to build an anchor around a suitable tree. Of course this is for an average anchor location. Meaning, one decent tree is used without any extension around or over obstacles. Every location will require more or less anchor material. Tubular webbing and static chord are the preferred materials, other than steel cable of course. Thicker, the better. I like my anchors like I like my chilli, BEEFY! I personally use 8mm chord when I leave an anchor. On top of anchor material you'll need to consider friction management. Aluminum rap rings specifically design for this purpose can be purchased at any climbing gear shop. Stainless steel rings or stainless steel quick links can be purchased at Canadian Tire. I use the stainless steel quick links mainly because 9 times out of 10, I forget to attach them before I tie the knot. They can be attached to existing anchors. Please don't skimp on the rings or links. Get stainless steel or aluminum and get BEEFY ones. Make sure they are wide enough to accommodate thicker ropes.. Please be sure to get two.

## Step 2.

### Select a suitable base.

Trees work well for this purpose. In certain situation where trees are not an option, a slung large boulder can be very effective as long as it is stable enough to hold the forces generated during a rappel. If the anchor is built too low it will get covered over by snow or ice. Your anchor will be useless to anyone else if they can't find it. Try to build in a location that provides easy access, the least amount of rope drag, free of possible knot snags, and high enough to lesson the chance of freeze-in. If you are relocating an existing anchor, it can't hurt to use some flagging tape to mark the new anchor location.

When choosing a tree a good rule of thumb to follow is, if it's as big as your leg, it's big enough to get you down. Some key features to look for in selecting a suitable tree are knots or branches down low that will serve to keep the anchor from sliding down to the ground and becoming buried by snow or ice. In the photo on the right you can see I have utilized the notch between two trees to keep the anchor off the ground.



Sometimes larger trees are not an option so the next best thing, other than large boulders, is iced in groups of trees. The ice will solidify the root system making it safer to use as a rappel anchor. Unless it is an exceptionally good ice year the ice should return to that same clump of trees in following years.

## Step 3.

### Build your anchor.

With your chosen anchor material wrap the base twice around and secure with a double fisherman's knot making sure to leave enough tail to create another complete loop around the tree. Try to make you tails unequal lengths. The reason for this will be explained later on in the article. Don't forget to insert rap rings before close the system. Also remember to leave enough room in the system for tree growth. I have seen climbs with anchors that were installed 20 years ago. Good thing for the tree that the climber used a larger loop to allow for growth, or the tree would have suffered a different fate.



Rotate the loop so the knot is at the opposite end of the loop from your rap rings. Using a figure 8 knot separate the rings from main loop and create the power point. By doing this, you have now effectively made the anchor material twice as strong, by virtually creating 2 single loops.



Take the remaining tail ends and create a loop by securing the ends together with a double fisherman's knot. It's important that the loop go around the base as does the main anchor. This loop should extend past the end of the rap rings by an inch or two. Too close and your ropes will rub too much thus weakening the catch loop. Too far and the loop is in-effective. If the main anchor fails, the shock load would be too great. When complete, the anchor should have three loops around the base, two for the main anchor and one for the catch loop. As directed earlier, by making your tail ends un-equal lengths, the catch loop knot to be off centre and will not interfere with the climbing rope. Think of this catch loop as a climber's insurance policy. Anyone else out there who has told there life insurance provider they own lead climbing equipment knows the importance of an extra insurance policy.



Below are photos of 2 different configurations. A single 16 foot piece of 8mm cord tied utilizing the tails for a catch loop, and a 12 foot piece of 8mm cord used for the main anchor and another piece of 8mm cord tied in a separate loop for the catch loop.

I prefer the first method as it is less time consuming and I didn't need my knife and



lighter to set it up. The second I would use when replacing an older anchor that still has one piece of anchor material that is suitable for a catch loop.



The idea behind a catch loop is to back up the main anchor. This loop carries no load until needed. If the main anchor fails the idea is that the catch loop will do exactly that, catch you. If the anchor base fails, well, you are pooched. The ideal anchor would utilize more than one base and be made out of steel cable. That is beyond the purpose of this article. I wanted to show people 1 Strong, 2 Easy, 3 Efficient, and 4 Inexpensive ways to create an anchor system. I am confident I have achieved the goals set out.

1. I don't know the exact holding power of 8mm cord but I can rest assured it is stronger, in this configuration, than any forces I can generate on rappel.
2. With some knots every climber should know, this anchor can be created in about five minutes.
3. This anchor, if placed in the appropriate location, should last for more than one season and get many climbers down safely. As an added bonus there won't be piles of garbage anchor material wrapped around a single anchor base
4. This anchor costs roughly \$15 dollars

Don't forget, when your replacing old anchors please take home the old material and dispose of it properly.

Be advised I am unaware of any load testing completed on the anchor systems explained in this article. The only load testing that would have been completed would have been on the individual components themselves. Trusting this anchor system would have to be up to you and you alone.

Materials used in this demonstration:

- 5 metres of 8mm cord
- 2 stainless steel quick links
- tree larger than my leg
- double fisherman's knot to join material
- figure 8 knot to secure power point
- double fisherman's knot to join tails to create the catch loop

If anyone has any questions please feel free to contact me.

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