

Libby Peter's Climbing Essentials

No. 6 : Trad Essentials - Belay refresher and ropework systems

At the top of a big lead you may feel exhausted, flustered, stressed, relieved or possibly even all those emotions at once and it's common to get into headless chicken mode when it comes to making sensible decisions about where to belay, which anchors to choose and how to attach yourself. Our belay refresher outlines a simple no-nonsense system that works every time. In addition, you may be wondering if it's time to switch to double ropes or can you make do with one? What are the advantages of using double ropes and how do you belay with double ropes? These questions are answered right here.

Choosing a single rope

These days single ropes range from an unbelievable 8.9mm to 11mm in diameter. The skinny end of the market (10mm and below) is designed for moving light and fast in the mountains or for guiding when you might be trailing two of them. THESE ROPES REQUIRE EXPERT HANDLING AND OFTEN A DEDICATED BELAY DEVICE to ensure safe, effective belaying.

For lead climbing (that would also be good for Sport and indoors) 10.2mm - 10.5mm diameter is ideal. You only need to consider a 11mm rope if you're planning to use it primarily for top-roping. If you're thinking of using it in the winter or the Alps then pay the extra for a dry-treated rope.

If you're only going to climb in this country a 50m long rope is perfect. If you're planning to head abroad sport climbing you'll need a 60m one.





Single rope

Using a single rope is simple. It's what you'll use in a climbing wall, for sport climbing, for top-roping and is also perfectly adequate for leading the majority of single pitch trad routes.

Leading

As you set off on a climb you'll be thinking about placing runners almost straight away. In order for the runners to do their job (i.e. stop you hitting the ground if you fall) the spacing needs to be closer low down. It's a good idea to constantly look down and check your distances; how far you are above the last runner compared to how far away the ground is. It's tricky to estimate rope-stretch and that extra bit you fall due to slack being taken up – it's always further than you think!

Extending runners

You're often in a dilemma whether to use short quickdraws to minimise the fall or longer quickdraws to minimise rope-drag. This problem is highlighted on short routes where you're close to the ground for most of the climb. *Photo 1* illustrates how rope drag can easily be generated when using a single rope on a short route. You could reduce the rope-drag by using longer quickdraws or even slings but then you have the problem of falling further. *Photo 2* shows how double ropes can improve the situation so we'll come back to this in a moment.

Belaying with a single rope.

Once you've selected the most solid and appropriately situated anchors at the top of your climb you need a simple system to attach yourself using the rope. We'll look at why it's a good idea to use the rope rather than slings in detail next month but essentially it helps makes the whole system more dynamic.

The system shown in *photo 3* uses clove hitches, which are delightfully easy to adjust so you can get the tension just right.

- Take the rope from you to anchor 1 and clove hitch it in using a screwgate (preferable).
- Leave a little slack and clove hitch to anchor 2.
- Finally, bring the rope back to a clove hitch on a screwgate (essential) clipped to the rope loop created when you tie in.



Any of the three clove hitches can be tweaked to get your position on the ledge perfect and to ensure the tension is even so that the anchors are being **equally loaded**, in other words they're sharing the load between them. You can also see that the angle between the anchors is as it should be – **60 degrees or less** and you're attached to the anchors **independently** (if one fails you don't shock load the other).

If you need to position yourself further away from the anchors so they are out of reach this system is fiddly to adjust so instead you clip the rope through the anchor karabiners and have both clove hitches on your rope loop. You can use one big pear shaped screwgate or two d shaped ones.

Double ropes

A comparison of *photos 1* and *2* shows the effectiveness of double ropes for minimising rope-drag. This becomes even more useful on longer, wandering pitches and in particular on multi-pitch routes. Another advantage for the leader is that with good belaying you feel better protected when you clip a runner. As you pull up the slack to make the clip it's a moment when you're vulnerable to a bigger fall but with double ropes the belayer need only give you slack on one rope whilst keeping you safe on the other.

For this to happen smoothly and safely the belayer needs to feel confident handling two ropes through the belay device so they are being worked semi independently. By splitting the ropes through your fingers whilst still having a grasp around both you can give slack on one but not the other for example. This is shown in *photo 4*. If you're new to double ropes take some time to practise paying out, taking



in and working the ropes independently before you belay someone on a tricky climb.

Belaying with double ropes

This is even simpler than with one rope; run one rope to each anchor and clove hitch in, as in *photo 5*. Remember, if the anchor is out of reach put the clove hitch on your rope loop so you can adjust the tension and your position easily.

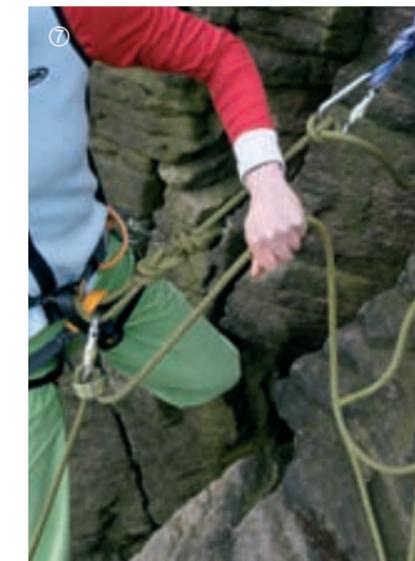
Belay device position

A frequent dilemma is where to attach the belay device – the harness loop or the rope loop. Both are perfectly strong enough for the job, the main difference is how the load comes onto you and the anchors. If you belay from the harness loop as in *photo 6* the load is going to come onto you first and then in turn you are held by the anchors. If you belay from the rope loop

Choosing double ropes

Double (also know as half) ropes have also got skinnier and range between 8mm-9mm in diameter. Don't go under 8.5mm unless you have a good reason (i.e. weight is crucial). **Double ropes less than 8.5mm require expert handling and a dedicated belay device to ensure safe and effective belaying.**

Don't get confused with **twin ropes** which go down to 7.7mm diameter, these are clipped both together at each runner and ARE NOT for use in double rope technique



as in *photo 7* the load is transferred to the anchors rather more directly.

So, which is better? If the anchors are solid (as they should be in most rock climbing situations) I would always prefer for the load to bypass me and go to the anchors (*photo 7*), as this is far more comfortable if you're going to hold a fall.

If the anchors you're attached to are poor (this should only really be the case in the winter, on snow or ice) you may decide to cushion the anchors a little by taking the brunt of the load onto you first (*photo 6*).

Either way, if you go through this **belay position checklist** you'll rule out sloppy habits.

- Make sure you're standing or sitting in-line between the anchors and anticipated load.
- Make sure there is no slack in the system, i.e. you can feel the anchors are holding you in place.
- Make sure you're using the correct break hand. Think of yourself as side-on to the anchors, rather than having your back to the anchors – the brake hand is the one that's furthest away from the climber (as in *photo 7*). This enables you to bring your arm back behind the belay device to get maximum effective breaking angle. Next month we'll consider how we make sure our belays and belay technique are dynamic. □

Libby has been climbing for over 20 years, she is a qualified Mountaineering Instructor and IFMGA Guide and is the author of *Rock Climbing – Essential Skills and Techniques* published by MLTUK. Her base is North Wales from where she runs the guiding outfit Llanberis Guides (info@llanberisguides.com)