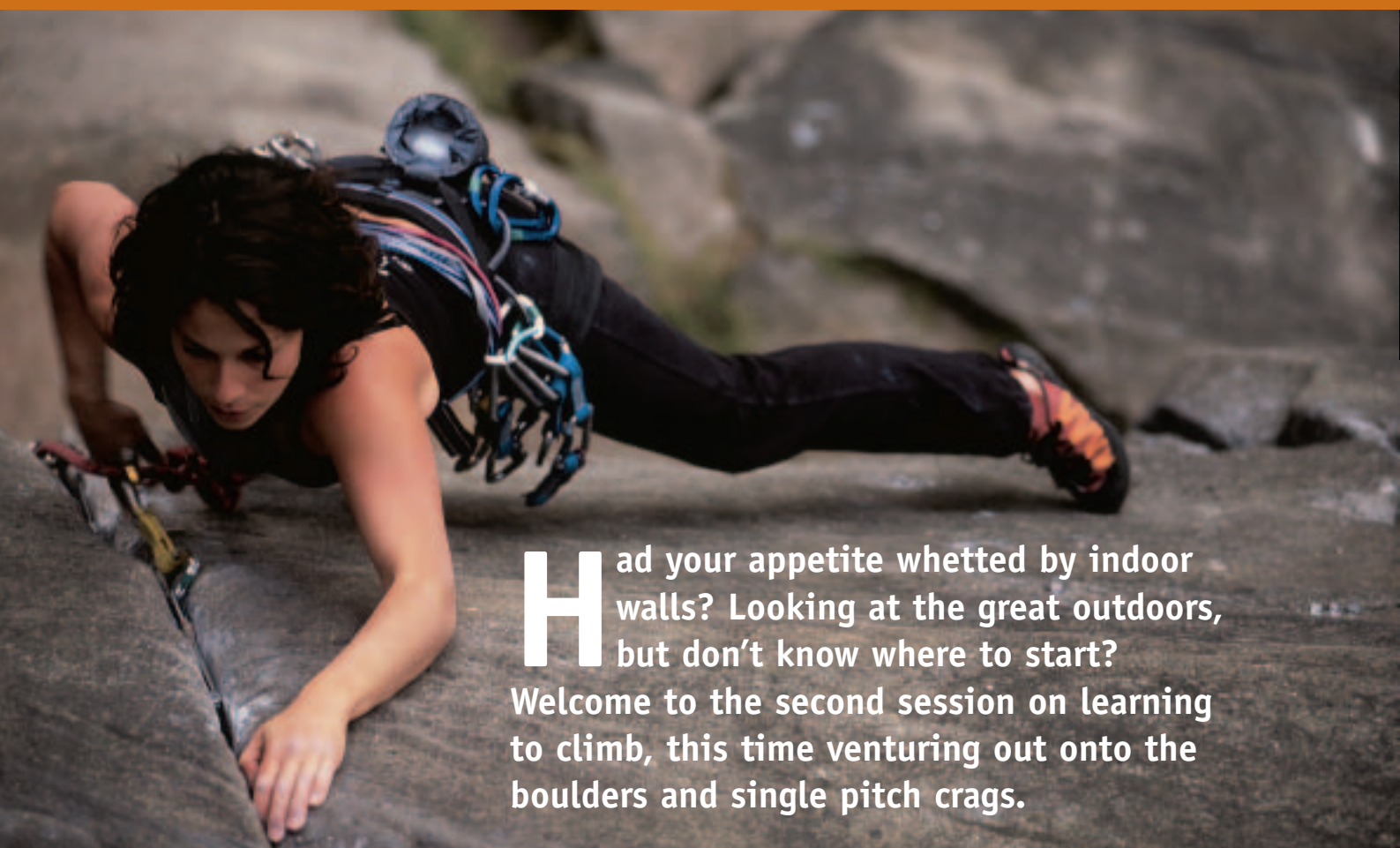


BASICS: 2 heading outside

By Steve Long



Had your appetite whetted by indoor walls? Looking at the great outdoors, but don't know where to start?

Welcome to the second session on learning to climb, this time venturing out onto the boulders and single pitch crags.

(CLOCKWISE FROM TOP LEFT)

Amanda James on Sunset Crack, Froggatt. A popular first lead.

Andy Higginson slapping around at Burbage.

Not all sports routes are hard! Vicky Barrett tackles a lower grade testpiece at Smith Rocks, USA.

Learning to place gear is essential.
All credit: Alex Messenger



Bouldering

Bouldering is one of the easiest aspects of climbing to transfer to the outdoors. I mean, crank on sloper indoors, crank on sloper outdoors – how different can it be? Well, not very, but for the unwary beanie clad boulderer there are still a few potential pitfalls.

Real boulders present challenges and hazards that demand awareness and a different approach from their artificial counterparts. The ground surrounding and beneath boulders is generally uneven and much less forgiving than indoors, and there may well be protruding rocks that could easily cause injury in the event of a fall. Many boulderers now carry a padded mat to reduce these dangers, but don't over-estimate the effectiveness of this cushioning. It's still very easy to turn an ankle or wrist, especially on a carelessly positioned mat, or just plain miss the mat entirely! Mats should be placed under the point where a fall is most likely and/or would have serious consequences. An attentive spotter, ready to protect the climber's

back and head or to absorb some of the impact from an awkward landing is always highly recommended. And if you're sharing a mat, beware eagerly nabbing it whilst somebody is still climbing above.

But mats or no mats, treat the consequences of a slip or fall with respect and don't lose sight of this in your desire to get the tick. Some problems lure the unwary climber far from the ground or deliver a head-first ejection, and even experienced climbers can be surprised in this way.

On to the crag

If routes are more your thing than single pitch crags are a great way to learn the basics in a relatively controlled environment, and provide most people's first taste of life outside. "Single pitch" means that the climb is short enough to be completed in one rope length (pitch), so there's no need to set up a belay part way up the route. Choose a small outcrop, ideally less than half the length of a



peg isn't butted tightly up against the rock, treat it with a degree of suspicion relative to the amount of metal left protruding. Some fixed gear may have tape slings attached – check these for fraying or UV deterioration and replace if in doubt.

After clipping any piton or bolt I would recommend giving the quickdraw a sharp tug in the direction of anticipated loading and watching for any movement, rotation or other signs of frailty. But whenever testing a runner this way, be sure to keep a good grip on the rock in case it does fail!

Sport climbs rarely have a simple attachment karabiner at the top. Even those that do may present problems as the gates quickly seize shut through corrosion on our damp isle. So it's more usual to find a sealed ring or two, through which it is necessary to thread the rope before being lowered to the ground.

Whilst you could just simply clip in with a quickdraw, untie the rope, then tie back after threading, this is not ideal. For a short period you are at the mercy of a single point of contact at the belay, and are very stuck if you drop the rope! A safer method is to thread



typical climbing rope in height (i.e. less than 25 metres high). This makes communication straightforward, and means that the climber can be lowered back to the ground from any point on the route in case of difficulty. Climbs with a complex (e.g. tidal) approach or no easy descent from the top are unsuitable at this stage.

Sport climbs

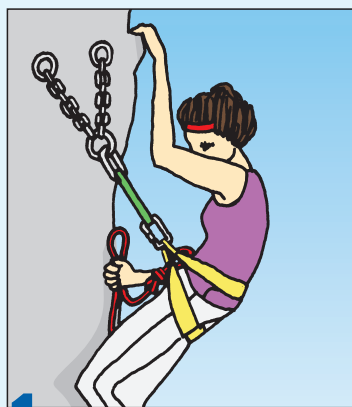
On the continent, many climbs are protected with bolts, just like indoors, so at the start there are fewer new skills to learn. However Britain has a long tradition of preserving a natural protection ethic, so relatively few crags are equipped with bolts and lower-off points, and those that exist are usually featureless, steep and hard.

But for some climbers, sport climbs will provide a handy transition between indoors and natural routes, especially if you happen to live near one of the lower grade sport climb honeypots such as Portland.

Seeing a line of bolts, it's tempting just to jump on the route, after all, that's what you'd do indoors? But unlike inside, no one is ultimately responsible for the state of the bolts, and even on BMC managed crags such as Pen Trwyn near Llandudno, only the top lower offs are checked periodically. There is simply no guarantee that the bolt you're about to clip is still solid.

Treat all fixed gear, including bolts with a healthy degree of scepticism. Is it attached to solid rock or have cracks appeared? What does the bolt hanger look like – is it thin and rusty? On some routes you may also encounter pitons or "pegs". These are similar to bolts but hammered into natural cracks and holes, held in place by friction not glue. They can easily deteriorate over time, so your degree of trust should be relative to how secure the piton appears. Bad signs are copious amounts of rust, cracks in the metal (especially the "eye"), and if the head of a

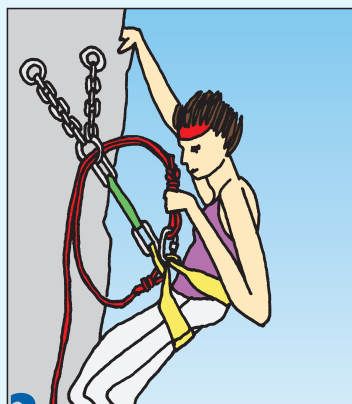
LOWERING OFF:



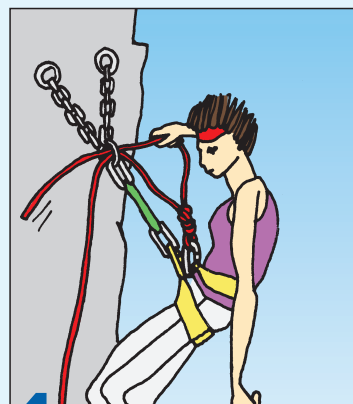
1 The climber secures him or herself to the anchors with the belayer keeping them on belay throughout.



2 A bight of rope is threaded through the anchor.



3 A figure of eight knot is then put onto this bight and attached to the harness via a screwgate.



4 The slack is then taken in by the belayer and the original end of the rope untied from the climber's harness.



(ABOVE) Unknown Climbers on Suspension Flake, Vs 4c, Hound Tor. Credit: Stuart Littlefair

the rope through the rings and tie back in, all before unfastening your original attachment.

Clip in to one or both anchors with quickdraws or a sling and feed a loop of rope through the lower off points. Tie a knot in the loop and clip this onto your harness attachment point with a screwgate karabiner. The original rope tied to your harness can now be unfastened, so that the rope now passes from the belayer, through the anchor and into the new knot. Pull the long end of spare rope through the anchors to allow a visual check of the attachment. The belayer can now take in any slack rope, until the leader unclips the extender(s) from the anchors and is lowered to the ground. Never allow yourself to be lowered on a rope threaded directly through a tape anchor. The tape would wear through virtually instantly, with obvious consequences.

Trad climbs

Most British crags are climbed using natural protection (gear). This means that the natural features of cracks, spikes or threads on the route are utilised to protect the climb. A hundred years ago this meant threading slings round pebbles, or hoping to encounter natural spikes, but these days climbers have a whole arsenal of weapons at their disposal. From wafer thin micro-wires to huge camming devices, if there's a natural feature to be exploited, there's usually something to fit.

But placing gear and understanding the advantages and limitations of each piece and it's placement is a dark art requiring practice and patience to master. In the early days you'll need to enlist the support of a more experienced mentor, and spend time experimenting with practice placements whilst safely on the ground. Your first encounter with gear placements will probably be removing them as you follow the climb after a more experienced leader, or perhaps when helping to set up a top rope.

Top roping

Top roping will be a familiar system for anybody who has already used ropes at the wall.

Essentially the rope is threaded through a reliable anchor at the top of the pitch, so that two strands of rope hang down the approximate line of the climb. One end is attached to the climber while the belayer uses the other end.

It's easy to appreciate that the choice of top anchors is a vital one. Usually, two or more anchors are linked together to equalise the load and provide a backup in case of failure. The simplest anchors are trees, boulders, or a natural rock spike, but although they may look solid initially, never blindly trust them.

Start with a visual check. How big is the anchor? Thin trees and tiny boulders could well be unseated if subjected to loading. A detached boulder might be precariously balanced or perched on a slope. Sometimes even very large boulders can be moved surprisingly easily, and boulders that have been used for years become unseated after rain or frost. Watch out for rounded or "whaleback" boulders since slings just ride up and flip off under load. This sort of boulder can only be used if undercut at its base, and the sling should be carefully placed. To reduce leverage place it as close to ground level as practical, and test by running the sling back and forth in your hands in the anticipated direction of loading. If in doubt, look elsewhere.

Rock spikes should be tested for soundness; any cracks should be viewed with suspicion, and the edges should be checked for friability. Give a potential spike a tug in the intended

direction of loading, and a hard knock with fist or foot, watching for any signs of movement. Again if in doubt, move on.

Sometimes you'll be able to find a natural thread, and pass a sling through a gap, or round a chockstone to find a quick and easy anchor capable of withstanding loading from many directions. But again check for stability, and make sure it really is a rock thread, and the sling is not just being held in place by some dried mud.

Placing Gear

But often there will be no convenient tree or spike, and you'll have use gear to create the anchors. Natural protection falls into two broad categories; static and camming. Static protection is simply wedged into a constriction, whilst camming devices actively convert their loading into sideways pressure to hold them into a crack, even a perfectly parallel one with smooth sides.

Static placements

For small to medium cracks, wedge-shaped chocks (aka nuts, wires) such as Rocks, Wallnuts etc. can be used. These are usually attached to a swaged wire loop, although some larger sizes do come on cord. Prior to use the attachment loop should be checked for damage, and wires with broken or rusty strands should be binned. Some very tiny wires are available, such as "zero's" or RP's. On harder climbs these are used for protection, but they have a very low breaking strain and

I THINK IT'S VS 7b!

Climbers making a transition from sport and indoor climbs to traditional climbs

are often confused by the different grading system. Trad climbs use an adjectival description of the overall commitment and challenge, coupled with a technical grade of the most difficult move. This allows quite subtle information about the nature of the climbing to be conveyed. Sports grades usually use the French system, however, since sports grades do not allow the luxury of an adjective, the grade often attempts to cover factors such as effort as well as technicality. In the early days it's best to adopt a very conservative approach since the endless variety of holds and features outdoors can make everything feel much harder.

UK Adjectival Grade	UK Technical Grade (approx)	French Equivalent	UIAA (alpine) Grade	USA Equivalent	Australian Equivalent
Moderate		1	I, II	5.1, 5.2	4, 5
Difficult		1, 2, 2+	II, III	5.2, 5.3	5, 6, 7
Very Difficult		2, 2+, 3-	III, III+	5.2, 5.3, 5.4	6, 7, 8
Hard Very Difficult		2+, 3-, 3, 3+	III+, IV, IV+	5.4, 5.5, 5.6	8, 9, 10
Mild Severe		3-, 3, 3+	IV, IV+	5.5, 5.6	10, 11
Severe		3, 3+, 4	IV, IV+, V-	5.5, 5.6, 5.7	10, 11, 12
Hard Severe		3, 3+, 4, 4+	IV+, V-, V	5.6, 5.7	12, 13
Mild Very Severe	4a, 4b, 4c	3+, 4, 4+	IV+, V-, V	5.6, 5.7	12, 13, 14
Very Severe	4a, 4b, 4c	4, 4+, 5	V-, V, V+	5.7, 5.8	13, 14, 15
Hard Very Severe	4c, 5a, 5b	4+, 5, 5+, 6a	V+, VI-, VI	5.8, 5.9	15, 16, 17, 18
E1	5a, 5b, 5c	5+, 6a, 6a+	VI, VI+	5.9, 5.10a	18, 19, 20
E2	5b, 5c, 6a	6a+, 6b, 6b+	VI+, VII-, VII	5.10b, 5.10c	19, 20, 21
E3	5c, 6a	6b, 6b+, 6c	VII, VII+	5.10d, 5.11a, 5.11b	20, 21, 22
E4	6a, 6b	6c, 6c+, 7a	VII+, VIII-, VIII	5.11b, 5.11c, 5.11d	22, 23
E5	6a, 6b, 6c	7a, 7a+, 7b	VIII, VIII+, IX-	5.11d, 5.12a, 5.12b	23, 24, 25
E6	6b, 6c	7b, 7b+, 7c, 7c+	IX-, IX, IX+	5.12b, 5.12c, 5.12d, 5.13a	25, 26, 27, 28
E7	6c, 7a	7c+, 8a, 8a+	IX+, X-, X	5.13a, 5.13b, 5.13c	28, 29, 30
E8	6c, 7a	8a+, 8b, 8b+	X, X+	5.13c, 5.13d, 5.14a	30, 31, 32



(ABOVE) A well equalised belay for Rachel South. Credit: Alex Messenger

NATURAL DANGERS

Crags and boulders are subject to natural erosion and prone to loose holds and stonefall. The only person responsible for checking that a particular route or descent is safe is you. Holds may be wet or dirty, obscured by vegetation or even disintegrate. Detached rocks can also be dislodged by other climbers or perhaps wildlife, and can present a serious threat. Climbs with loose exits demand great steadiness or are best avoided altogether, and you should remain alert at all times to the risk of rocks or even equipment being dropped from above. Wearing a climbing helmet is always a sensible precaution and with the development of effective lightweight helmets, this is no longer a chore.

are best left in the shop when starting out. For protecting larger cracks an assortment of hexagonal shaped tubes are available, with a cord or a tape loop. These “hexes” are often moulded into an offset shape, allowing the skilled user to introduce a degree of rotation when loaded, giving a camming effect.

For static placements, tapered or keyhole-shaped cracks are usually required, allowing the metal to be inserted and slid down into the constriction. The best placements retain the wedge in place even if subjected to pulls from a range of directions. Removing such gear afterwards can be quite difficult, and judicious use of a metal “nut key” might be needed to prise a stubborn placement out.

Camming placements

Many cracks have parallel sides, and this is where camming devices come into play. Spring loaded camming devices were invented in the 70’s and now are available in a bewildering range of sizes to suit all situations. However they are relatively pricey items and tricky to place securely, so don’t rush out and buy a full set just yet. The craft of placing reliable natural protection equipment requires considerable practice and experience, so novices should take great care, particularly when setting up belay anchors for top roping, where equipment failure could well be catastrophic. Initially, only very substantial boulders, trees and spikes should be used as testing them is relatively intuitive, and an experienced mentor should be on hand to check your work.

The Belay

For back up purposes it’s normal to use two or more anchors for a belay, ideally using different blocks or crack systems. But these different anchors all need to be linked together, which can cause a headache. There are many ways to link anchors together; the simplest and most effective methods require a long sling or spare rope which is tied into all the

anchors to create an attachment loop that pulls equally on each anchor when loaded. This means that the individual anchors share the load – the various loops should feed into the main knot within an angle of around 45–90° for optimum strength and stability.

Once the anchors have been equalised in this way, a screwgate karabiner or two can be clipped into the main attachment loop and the rope can be threaded through for top roping. If you intend to position the belayer at the foot of the climb like at the wall then take care to protect the top of the crag (and your rope) from erosion by friction. A simple way to achieve this is to make the main attachment loop long enough to extend beyond the crag top, or use a sling to extend the loop over the edge. This is particularly important for softer rocks such as sandstone,

EQUALISED BELAY:

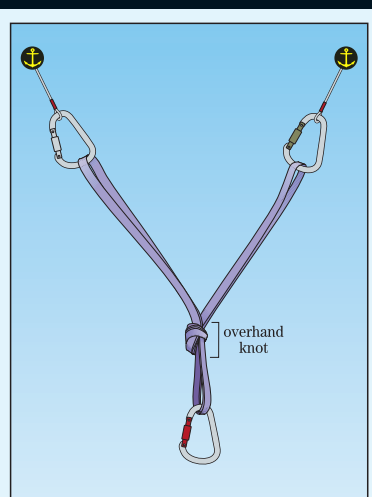
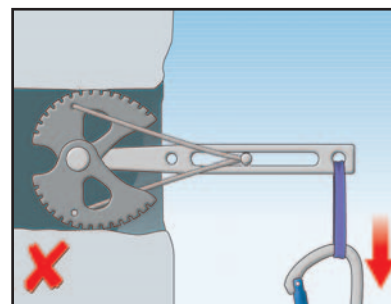


Diagram from the forthcoming MLTUK book **Rock Climbing**

and for crags such as Harrison’s Rocks codes of practice have been drawn up to protect the crag environment.

Lead Climbing

Lead climbing on traditional climbs is for many people what it’s really all about. And when you’ve got the right skills and confidence, it allows you to head up into some pretty special places. But getting to this stage takes time, so practice those gear placements at ground level and stay tuned for the next in the series – **Learning to Lead.** ||



CAM TIPS:

- 1** Look for placements that don’t widen in front or behind the cams, any movement or rotation may result in failure.
- 2** Minimise rotation by positioning the cam unit’s stem in line with the anticipated pull.
- 3** Camming units tend to “walk” further into a crack when a cycle of rotation and release is caused by rope drag. In extreme cases you will lose your cam.
- 4** Spring-loaded cams used as running belays are usually best extended using a sling to reduce or eliminate the rotational effect of rope drag.
- 5** Cams are best avoided as anchors for top-roping belay systems as the cycle of strain and release can also cause the unit to “walk” into a less secure part of the crack.
- 6** Practice placing and removing cam units at ground level.
- 7** For shallow horizontal placements, flexible shafts reduce leverage and are a much stronger solution.
- 8** Optimum placement is within the central area of the cams’ range of movements. If over or under cammed, the placement is mechanically weaker, but annoyingly can be much harder to remove by hand.
- 9** Difficult placements often require judicious use of a nut key to extract them from the rock. Often this involves hooking the trigger bar on both sides of the stem and pulling while simultaneously pushing the stem head further in. This is as difficult as it sounds, so practice at ground level.

Steve Long works for Plas y Brenin, the National Mountain Centre. PyB runs a full programme of courses to suit all levels of ability, from indoor climbers progressing to climbing outside right through to big wall climbing. For more information see www.pyb.co.uk.