Problem solving and improvised rescues.

A short introduction to accompany the Self Rescue DVD by Steve Long.

If you progress sensibly through the grades and gain experience on climbs that are not too committing before progressing onto more challenging locations such as tidal crags and remote mountain climbs, you are unlikely to run into serious problems. A little forethought can prevent many problems from occurring in the first place.

Good communication is probably the simplest way to pre-empt potential problems. Discuss a system with your partner that will enable you to keep in touch with each other even when wind or traffic noise drowns out voices. The usual convention is for the leader to give three sharp tugs in rapid succession when ready to bring up the second climber, with a similar arrangement for replying. The second should use this system with care, as it would be possible to pull the leader off of a precarious move if used at the wrong moment!

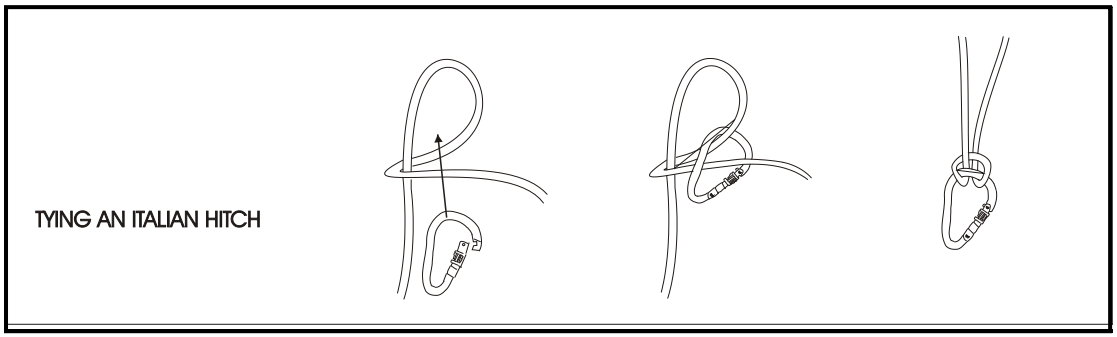
Another important factor in preventing problems is for the leader to arrange the belay in a position where it is possible to see the whole pitch below. This can make an enormous difference, especially when climbing with relatively inexperienced partners who might otherwise climb past runners or miss a traverse point if left to their own devices. This is particularly useful if the climb has a crux much harder than the rest of the pitch, when a belay situated just beyond allows a good tight rope to be provided if required, with minimal rope stretch and maximum morale support. I often split a pitch just beyond the crux when I take novices climbing.

Time spent training a novice partner to successfully remove runners and to use a nut key is never wasted. If a runner is really stuck though, it is often quicker to get your partner leave it in place and to climb or abseil down after they reach the belay to retrieve it yourself.

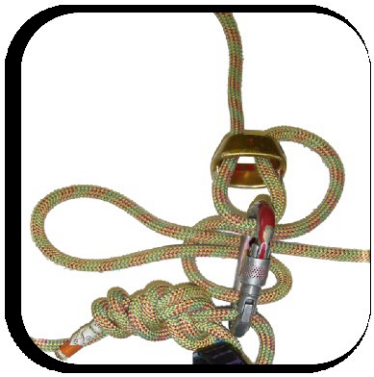
Sometimes problems will occur despite the best planning. To deal with these, a simple set of rope work skills and an ability to improvise will see you through most situations, as long as you stop to think about the consequences before you unfasten anything. Two or three prusik loops carried permanently on the harness are preferable to having to improvise with extension slings, and double up as abseil slings for retreats. A penknife can be invaluable in a real emergency but should be used with great care, as loaded ropes cut remarkably easily.

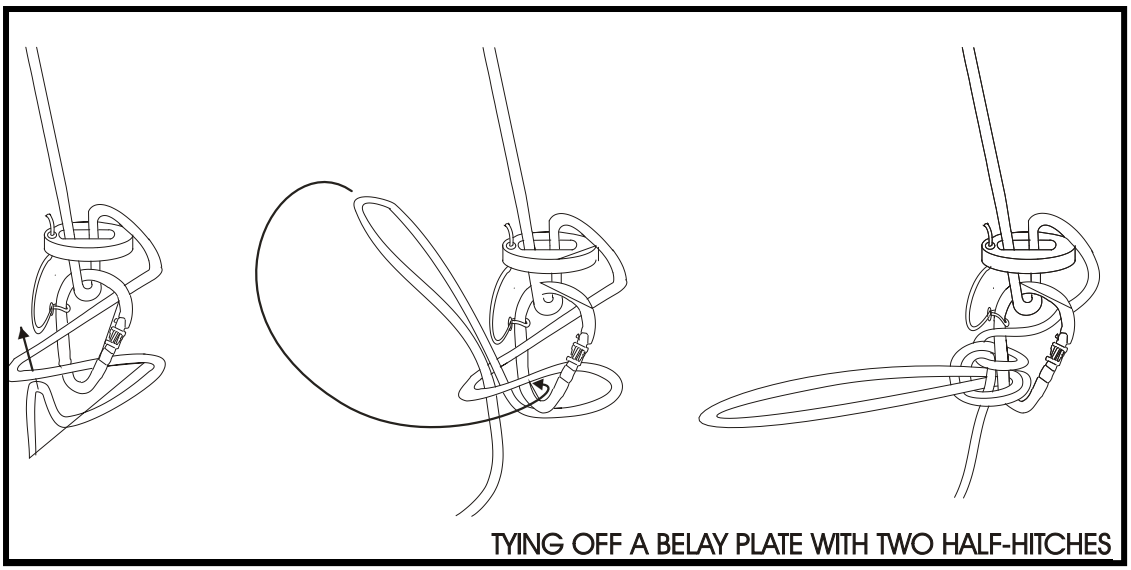
If a helpful tug on the rope and shouts of encouragement are not enough to solve a problem situation, a solution may well be found without any need to untie knots or tamper with belays. Unless the start of a climb is tidal, or you approached it by abseil, the simplest evacuation will generally be by descent. If you are climbing on double 50 metre ropes, you can lower your partner almost a hundred metres; this should be enough to clear many British crags in one go! Lowering a heavy person down overhanging ground should be approached with caution, however, as it can be surprisingly tiring to keep sufficient grip on the rope and failure to hold the rope could be catastrophic. Because of this, a back-up prusik should be attached to the live rope and linked back to the belay. One hand keeps a grip on this to prevent it locking onto the rope in normal use, but if control is lost the prusik automatically grips the rope and prevents it paying out further.

Considerable mechanical advantage can be gained by passing the rope from the belay device through a high anchor prior to commencing the lower – even better, fix an Italian hitch at this anchor to provide extra friction.



The most basic problem-solving skill is the ability to lock off the belay device so that you can get both hands free. If the person you are helping is actually hanging on the rope, this is essential unless it is possible to simply lower them to the ledge or the ground without fear of snagging up on a tree or spike on the way down. Tying off a belay plate requires care to prevent fumbling at a critical moment; it is worth practicing this technique in a safe situation where the rope is loaded but the climber is only a few centimetres above the ground. Basically a loop is pushed through the belay karabiner and then locked by pushing another loop through the first. This is finished with another half-hitch, ideally leaving the live rope uncluttered with any knots.





By far the most common rescue situation is the second climber requiring assistance to reach the belay - particularly partners who have been persuaded to attempt a route beyond their normal aspirations! It is a simple matter for a leader who has practised rescue techniques to effect a 2:1 pulley if the second is less than one third of a rope-length below. The first step is to lock off the belay device. A French prusik is now attached to the live side of the rope and clipped into the belay, to act as a one-way clutch. A loop of rope with a screwgate karabiner attached is lowered down to the

stricken climber, who is instructed to clip this to the attachment point on his/her harness. Any slack in the system is now taken in, and the leader is able to release the belay device, which now acts simply as part of a pulley in the hoisting mechanism. The second is able to assist by pulling on the strand of rope travelling towards his or her harness in the process of hoisting. It is important that the leader keeps an eye on the French prusik clutch system to check that nothing jams up allowing slack rope to build up with attendant potential for a fall.

In the more serious situation of an unconscious partner, you may well need to quickly descend to check their breathing. In order to do this you will probably need to "escape the system". To do this the prusik constructed around the live rope is attached back to the belay. If the belay is out of reach an intermediate step is needed; attach the prusik loop with a sling to another prusik fixed around the belay rope(s). Another useful skill is the ability to improvise a chest harness using a sheet bend (known as a Parisian baudrier). This will enable you to support the casualty in a more supportive position by fixing a baudrier around him/her and fixing this to the rope with a prusik.

For a rapid escape when a partner has failed to reach the belay, a counter-balanced descent is probably the most efficient means of escape, but only if sharp edges and pendulums can be avoided. After escaping the system, the rescuer ties the live rope to the belay karabiner using a tied-off Italian Hitch (arranged by tying an Italian Hitch, setting it ready for a lower, and then making a couple of half-hitches around the live rope).

The rescuer then arranges to abseil on the other end of rope emerging from the belay karabiner, with a prusik back-up attached to his/her leg loops. The Italian Hitch is probably best removed at this stage and replaced by a simple loop over the karabiner. The rescuer and the casualty are now suspended in a counter-balance, and the French prusik fixed to the “live” rope to escape the system can now be carefully removed. The rescuer descends to the casualty, administers any necessary first aid, and continues the descent by attaching a short sling to the casualty, and thus pulling him/her down at the same time.

If a counter-balance abseil is not appropriate, an “assisted” abseil may work. Two people abseil clipped to the same device using separate slings, or a long sling tied to create a “Y” hang. The rescuer controls the descent, but the device takes the weight of the casualty.

Rescue situations require the efficient application of skills used in various combinations. Some of these skills are practised every time you go climbing, but others require practise in a controlled situation. Courses are available in rescue skills, for example at Plas y Brenin, the National Mountain Centre.