

## **Adventure Activities Licensing Authority**

### **AAALA Note: 6.16**

*AAALA notes are produced by the AALA to provide information and guidance to adventure activity licence holders and other interested stakeholders*

**Date:** August 2013  
**Subject:** Peer belaying

---

**Issue:** AALS believe, based on their inspections that the majority of peer and team belaying is of very high standard. Certainly when it becomes aware of belaying which is not of an acceptable standard it takes steps to ensure that this is addressed. Most instructors, whether trained and assessed by an NGB or in-house, perform competently and safely and are carefully managed by employers and managers. However serious accidents arising from poor practice still continue to occur. It is believed that there is a common thread to at least some of the reported incidents, accidents, and near-misses relating to the management or conduct of instructors after their validation to lead climbing sessions.

### **Introduction**

1. In this note 'Peer Belaying' is used to describe the practice of training participants at the start of a climbing or climbing related session to belay, and then using them as the belayer while other participants climb. "Team Belaying" is used as a specific case of this where more than one person is involved with belaying the climber. Many providers use this approach because it:
  - allows more participants to be actively involved as opposed to simply waiting for their turn to climb; and/or
  - it helps to create a team situation which is seen as fulfilling the aims of at least some courses or sessions; and/or
  - it helps with group management; and/or
  - there may be an intention to build progression into the course or programme, leading eventually to independent conventional (i.e. one-to-one) climbing and belaying.
2. The main causes of accidents appear to be human error and are not generally the absence of competence or a lack of appropriate procedures. Significant factors are believed to include:
  - management assuming too much of newly qualified instructors;
  - a momentary lapse of concentration on the part of the instructor;
  - inappropriate focus of attention by the instructor.
3. The Licensing Authority recognises that safety in the outdoors is largely due to good judgement by the instructor in charge in choosing and implementing the most appropriate techniques for the situation. To constrain that judgement would be counter-productive. This note sets out aspects of good practice in peer belaying and should be considered by providers in their implementation of peer belaying.

4. The following list sets out the main issues:
  - injury to the climber resulting from inadequate belaying;
  - injury to the climber, resulting from them becoming detached from the rope;
  - injury to the belayer(s) resulting from unsafe belaying while the climber is climbing;
  - injury to the belayer(s) resulting from unsafe belaying while the climber is being lowered;
  - injury to the belayer(s) because the climber lands on top of them.

## Peer belaying Systems

5. None of the approaches given below is any better than any other. Indeed there may be benefit in mixing and matching a number of techniques, some of which are described below. Not all the systems described below are suitable for all client groups, venues or sessions. Consideration needs to be given to which is the most appropriate technique (or combination of techniques) for any given situation.
6. Common phrases and meanings in team belaying systems:
  - the tail or tailer - someone who only holds the dead end of the rope;
  - the bell-ringer - someone who only pulls the live end of the rope down towards the belay device;
  - device operator - someone who only operates the belay device.
7. **Tailing** - One person belays in a conventional manner, using either a friction device or an Italian Hitch but the dead end of the rope is held by one or more other people. This may be the instructor, an assistant instructor, a competent adult or one or more students. N.B. it should be stressed that the actions of the tail forms the final safety back-stop and so their involvement needs to be emphasised as vital, not incidental.

### Advantages

- it most closely resembles conventional one-to-one belaying;
- the belayer need only coordinate the belaying action with the climber - no-one else is involved.

Disadvantages - at least some participants may find it difficult to operate the belay device.

8. **Bell ringing** - One person (the bell-ringer) pulls the rope down as the climber climbs. Commonly a different person (the device operator) feeds the rope through the belay device or system and one or more people (the 'tail' or 'tailer') take in the loose end of the rope from the device operator and acts as a back up if the operator fails to hold the rope when needed. The bell-ringer may be best positioned to coordinate the activities of the belay team with those of the climber, advising both parties to continue or stop, as appropriate, or this may be the role of some other person.

### Advantages

- involves more of the participants actively;
- generates a 'team work' situation;
- enhances peer trust, etc;
- may allow the instructor(s) to perform other tasks, or solve other problems;
- makes it easier to keep an eye on those who are not climbing.

### Disadvantages

- is often more complex than conventional one-to-one belaying because of the need for a coordination element;
- care is needed to avoid slack creeping in;
- can be harder for the instructor to control;
- high repetition may result in instructor inattention;
- there is a risk of rope burn if the bell ringer does not let go when they need to;
- needs an understanding by each participant of their role and responsibility in the whole system.

9. **Outward facing belayer** - The belay operator stands beneath the climber, facing outwards. Two or more people pull the rope through the device. The belay device operator may or may not be involved in pulling the rope towards the device.

Advantages - minimal complexity with rope manipulation.

### Disadvantages

- the belay operator cannot see the climber;
- depending on the device used the rope is never 'locked off' merely held tight using friction;
- there is a risk of pulling the device operator over;
- the live rope, en route to the climber, runs very close to the device operator's face, neck and hair;
- the belay device operator may feel that their involvement is no more than a human ground anchor.

10. **Self-braking devices** (e.g. Gri Gri or Edlerid Eddy) - Note: manufacturers refer to self braking devices. However the Licensing Service believes the term is misleading. In a similar way power steering on a car should not be referred to as "self steering". In both cases the involvement of the operator is crucial – variation in use ranges from bell-ringing to solo belaying as in conventional one-to-one climbing. In the case of the latter, smaller children may need to use a "sailor's haul" approach, i.e. lock off the device, sink at the knees, take in as they straighten up and or be secured to the ground.

### Advantages

- Used properly they can add a further level of reliability to the system;

- Used properly they can allow participants a greater involvement, or more closely approach a 'real climbing' situation.

#### Disadvantages

- Used improperly they can cause more problems than they solve;
- Used improperly they can create a false sense of security;
- They are more complex and difficult to use than other devices;
- Under some situations (e.g. slow loading) they can slip or fail.

11. **Ground anchors** - These can be combined with some of the systems above, and can be used either as a direct or indirect belay.

#### Advantages

- Can be used to prevent the device operator being lifted off the ground, although this aspect can be replicated by attaching either another person or a significant weight to the back of the belayer;
- If used as a direct ground anchor it prevents the belayer being directly loaded, resulting in loss of control or concentration;
- May allow the belayer to stand further out from the crag or wall;
- Can be easier to operate than other methods.

#### Disadvantages

- Can be more difficult to operate than other methods;
- Used as a direct anchor the device (or hitch), tends to flop around;
- Needs a suitable anchor in just the right place;
- Failure tends to be complete;
- In the unusual event of rock or equipment falling from above it can be harder to move out of the way.

12. **Italian hitch at the top of the climb** - This is not commonly found. The hitch is tied at the top karabiner (when the rope is placed) and thereafter operated by one (or more) people from the bottom.

Advantages - Can be operated with one (or two) people merely taking in the rope hand over hand.

Disadvantages - Jamming at the hitch is possible and potentially serious.

13. **'The haul sack' method** (otherwise known as the husky dog team) - The climber is attached to one end of the rope and a number of people (usually between 4 and 10) are attached to the other. As the climber climbs they move back, and as they move forward the climber is lowered.

#### Advantages

- Catastrophic failure is almost impossible (provided the other parts of the system are adequate);
- Novelty value;
- Creates a 'large team' exercise;
- Is very easy to explain and understand;

- Has maximum group control potential.

#### Disadvantages

- Clumsy and imprecise to operate;
- Can result in merely 'sack-hauling' the climber up the climb;
- As far removed from conventional one-to-one belaying as it gets, which for at least some sessions would make it a definite disadvantage;
- Needs a lot of room for the belayers to walk back into;
- It is possible to end up with the climber and the belayers a long way apart with associated communication and rope-stretch problems.

14. **Conventional one-to-one belaying** - Conventional one-to-one belaying with a friction device, self-braking device, or Italian Hitch, but no further back-up or tailing person – normally only used in the latter stages of a managed progression.

Advantages - Participants may now be considered ready to go climbing unsupervised so observing the final product would generally be appropriate.

Disadvantages - Failure can be total.

### **Other issues and factors to consider**

#### 15. **Age of participants**

- Understanding a belay system in a short session of climbing may be beyond the comprehension of some young people unless some time is or has been given to the belay method and how the forces are applied especially when someone falls or is lowered;
- If one of the purposes of the session is to teach young people how to belay properly more time is needed to practice belaying, lowering and holding a fall;
- if peer belaying is chosen, the young people could be asked to practice what happens when the climber falls off, whilst the climber is only a few feet off the ground and the instructor is able to closely supervise the fall.

16. Should students be tied onto the rope or clipped on with a karabiner?  
Tying on - Different harnesses have different characteristics, so the arguments for and against may vary, or at times even be reversed.

#### Advantages

- No risk of the karabiner hitting the climber's face in a fall;
- Sometimes recommended by some manufacturers, although at least some harnesses are described as suitable for clipping on for bottom roping;
- More like conventional lead climbing situations.

#### Disadvantages

- Slow;
- In practice it is harder to see if the climber has been tied on correctly. It's not the tying of the knot that's difficult to check but what it's tied to - classically to a non-structural part of the harness like the hidden retaining tape. This shouldn't be a problem but is the cause of most of the 'detachment' incidents the Authority has heard about;
- Much harder for the participant to do themselves, at least initially;
- Could raise child protection issues if the instructors choose to tie everyone on.

### Clipping on with a krab

#### Advantages

- Faster;
- Easier to see if it has been done correctly. "Check": holding up the rope clearly reveals the krab and the attachment loop.

#### Disadvantages

- Requires more kit;
- Because its 'quick and easy' it's easier to attach to the wrong part of the harness, (classically the gear loop) or not do the krab up or cross-load it.

#### Other factors to consider:

The harness needs to be appropriate for the situation or client group. Whichever system is used staff need to be trained in its use. Some systems require longer to set up than others which will impact on the length of the session, a short session will require a system that is quick and simple to set up; i.e. either allow the system chosen to dictate the length of the session or let the length of the session dictate the system used. Fixing both the system and the time available will foreseeably lead to problems.

There is no need to stick to one system rigidly, so long as there are clear criteria for which method should be used for any particular situation. Starting with one method does not preclude moving to another as part of a logical progression towards conventional one-to-one climbing and belaying, greater autonomy, etc.

17. Too much slack in the system - It is largely academic whether the climber is climbing too fast or the belayer is belaying too slowly.

#### Factors to consider

- spend time on training - this may best be done on a separate occasion, or somewhere more suitable for training. There is, for example, potential for one instructor to run the training (of attaching the rope, peer checking, and team belaying, etc) while another instructor starts climbing with those who have already been 'trained';

- appoint a 'climb leader' - this could, for example, be the bell ringer if that system is used. Their role would be to check, move by move, that there is no slack between the climber and the belay device, and if there is, to shout to the climber to stop.

**18. Rope not tight enough at the start of lowering** - This is widely recognised as a crucial part of the process and can be the cause all sorts of problems, from encouraging the climber to down climb, or to weight the rope too slowly causing self-braking devices to slip or fail if not properly operated. This can also be needlessly frightening to the climber.

Factors to consider:

- have a system of 'lowering calls' in much the same way, and for the same reasons as there are a common set of 'climbing calls' in conventional one-to-one multi-pitch climbing. See either a system noted by the Licensing Service in Annex 1 or develop your own. It should be clear, be applicable to experienced climbers in similar situations and reflect 'climbing calls';
- ensure that the instructor is familiar with that inevitable moment of trepidation and so is able to empathise with the climber;
- stress that the rope needs to be tight. This is probably best done at the training dry run, along with the other dos and don'ts;
- the device operator can 'sailor haul' (as described above) the last bit to get it tight enough;
- only allowing the instructor to lower is something inspectors commonly see. However, it may be equally robust merely to ensure that everything is set up and ready rather than doing it all themselves;
- some venues or routes make lowering more difficult e.g. with ledges for participants to get stuck on. It may be appropriate to change route or change what is considered to be the top or change the system.

**19. Lowering being carried out primarily or partially by the bell ringer** - This has resulted in a number of incidents and injuries.

Factors to consider:

- make it clear that the bell-ringer is not involved in lowering or holding a fall;
- the bell ringer (if one is being used) could become a second 'tail' whilst still retaining the role as the 'climb leader'. That is, they can still check that everything is tight (and, if the system requires it, asks the instructor for permission to lower.) Thereafter they can coordinate the lower (and any stops required en route);
- if the device operator and the 'tail', sort out getting the rope tight then they also know better what to expect when the climber's full weight comes on.

**20. Inappropriate or unreliable kitting up and/or belaying by the instructor** - The risks with this need hardly be stated and the potentially

severe consequences are obvious. However, this seems to have been a factor in at least some of the accidents that we know about.

Factors to consider:

- There can be no justification for deploying an instructor who is not sufficiently competent. However, this is very rarely a factor. What has been found from time to time are instructors who are not effective, who try out inappropriate practices, or who lose concentration or are distracted;
- The instructor's previous validation or qualification will have established that they can do the job safely. However, management, where it exists, have a responsibility that vigilance is maintained. This can be achieved by field monitoring, i.e. observing the instructor operating from time to time, or by some other means. Responsibility for the on-going vigilance and competence of self-employed instructors resides with the instructor.

21. **Inappropriate or unreliable supervision of team belaying** - Supervising team belaying can be a difficult and challenging task, and should not be tackled lightly. It generally requires greater experience, awareness and judgement than the instructor doing all the belaying. It also requires a level of strength and dexterity on the part of participants.

22. There is a danger that instructors will 'pick up' techniques after their initial qualifying assessment or validation, and apply them incorrectly. Management and employers have a responsibility to ensure that operational practices are in line not just with NGB good practice but also with their own preferences and requirements. Induction of even experienced instructors into the preferred 'house style' of operation will generally be appropriate.

Factors to consider:

- human factors and accidents - key moments: know what to watch and when, e.g. the transition from climbing to lowering is crucial and needs concentration on the part of participants and instructors alike;
- vision patterns - looking in the right place, at the right time, and knowing what tell-tale signs to be aware of;
- there will be benefit in deciding whether team belaying is the best solution for this particular group, and/or this particular venue? There are other solutions to keeping the interest and control of the group;
- a training session running in parallel with the climbing has already been outlined. This could be used to keep those not yet climbing constructively occupied ensuring that each participant has a chance to practice and understand each role;
- if it is decided that it is not necessary, nor desirable, for every participant to experience every role. This may result in some participants being given key tasks which are beyond their abilities (e.g. too small);

- it is good practice for instructors to focus as much, if not more, on the belayer(s) as on the climbers;
- a specific judgement will need to be made, often in each specific case, as to whether the instructor needs to have their hand or hands on the tail of the rope.

**23. Mechanical issues** - This means the inappropriate positioning of hands, rope, feet, etc. Many of these, if not all, may have been satisfactory at the time of assessment or validation. However, other techniques may have been incorrectly picked up, and others lost, since then. Employers and managers have a responsibility to ensure that instructors maintain an appropriate level of competence. Self-employed instructors carry the same responsibility themselves, and may well be able to fulfil the requirement through contact with NGB's and professional associations.

Factors to consider:

- Rope positioning - most devices are designed for the rope to be pulled back to lock off (e.g. most belay plates). Therefore ensure the slack rope is piled behind the device operator, and or the tail stands behind the device operator. Conversely some systems require the rope to be pulled forward to lock off (e.g. Italian hitch), so ensure that in these cases the rope is piled in front of the device operator and or the tail stands in front of the device operator;
- Positioning and stance of the belayer(s) - ensure that they are not too far out from the crag, and that everyone is braced ready to hold a fall in the direction of pull;
- Gri-gris - these devices can cause problems if incorrectly used. This seems mostly to be caused by a false belief that they are 'fail-safe'. They are not. There is a strong argument that provided a tail is used they have no advantages over a conventional belay plate and several disadvantages. There is currently a trend for peers to belay during climbing but for the instructor to take over for the lowering. The Licensing Authority is satisfied that provided appropriate care is taken there should be no need for the instructor to take over.

**24. Choice of belay devices and methods** - This issue is well documented by National Governing Bodies and the trade press.

**25. Communication** - Unless the instructor has their hands on the rope then their voice and language are the only control mechanism they have.

Factors to consider:

- licence holders should develop a clear system of 'calls' between climbers and belayer(s), instructor and the climber, and the instructor and the belayer(s). Clear in this case will include "understood by everyone";
- be attentive to detail. For example, does the 'bell ringer' pull, push or feed the rope. "Watch out for smilies!" i.e. check for slack between the climber and the device operator;

- develop a consistent system of calls, appropriate to the venue, session aims, client group, etc. This will help both participants and newly qualified instructors to develop.

## Conclusions

26. **Feasibility** - Team belaying can be operated effectively and safely and there is no reason why it should not form the basis of many or most climbing or climbing related sessions at licensed centres.
27. **Training** - Appropriate training is essential. Most accidents, incidents and near misses we are aware of seem to suggest that the belayer or climber did not know what they should be doing, or were not able to do it, or both. In the same way as a bouldering session now often precedes a climbing session (either immediately before or the day before), so there seems to be scope for a training session on tying in, tying on and belaying before the climbing begins.
28. **Vigilance** - Supervising team belaying session requires increased vigilance as the participants become more competent. Bored children quickly become inquisitive children, sometimes with unintended consequences.
29. **Practising lowering and falling off** - There is a great benefit for the climber to practice being lowered and even falling off at a suitable spot not far up the climb. Ensure however that the climber cannot hit the ground on rope stretch.
30. **Monitoring** - Monitoring is an integral part of ensuring the continuation of instructor competence and should apply to all staff from time to time.
31. **Scenario based training** - There is considerable benefit, as part of staff training and development, in setting up simulated accident and incident scenarios in a controlled and safe environment. This is an ideal way for management to satisfy themselves that their procedures are adequate and for staff to practice seldom used skills.
32. **Focus of attention** - There is evidence to suggest that some instructors focus their attention more on the climbers than on the peer belayers, thus potentially missing the start of anything going amiss. Significant focus on young/novice belayers at all times is paramount.

## Annex 1

### Example climbing calls for bottom roped climbing

1. Over the last few years the Licensing Service has identified weaknesses and potential weaknesses resulting in poor communication between the climber and the belayer(s) in a top/bottom roping situation, with particular attention to peer belaying.
2. The aim of any system of calls should be, to be:
  - Clear
  - Unambiguous
  - Be applicable in a (team) peer belaying and conventional one-to-one belaying
  - Be applicable to novices and experienced climbers
  - Reflect conventional 'pitched' climbing calls
  - Be consistent with conventional 'pitched' climbing calls
  - Be modern
3. At the base of the climb, prior to starting climb the climber turns to the belayer(s); holds the rope up and out revealing the krab and knot (or just the knot) for belayer(s) to see.  
Climber: "**Check**"
4. Belayers check that they are ready to belay and respond "**Climb when you're ready**"
5. Climber starts climbing until the top or high point of the climb is reached, or feel that they may fall off.  
Climber: "**At the top**", or "**Take**" or "**Tight Rope**"  
  
(No calls are necessary if the climber actually falls off. Belayers should therefore anticipate that this might happen *without warning*.)
6. Belayers make any rearrangements necessary. In particular they take in the rope until it is tight. When the rope comes tight the climber shouts "**That's me**".
7. Belayer (or belay team coordinator) checks that the belayer(s) are ready to descend, perhaps checks with the instructor, etc, as appropriate then shouts: "**Descend when you're ready**".
8. Belayers actively anticipating the climbers weight coming on the rope.  
Climber lowers their weight onto the rope.  
Climber: "**Down**".
9. Climber anticipates being lowered.  
Belayer (or belay team coordinator): "**OK!**" and starts to lower.
10. If the Climber needs to stop on the way down, the Climber shouts "**Hold!**"

Belayers halt descent, until the Climber shouts: "Down!"  
Belayers recommence lower until climber reaches the bottom.

### **General comments on verbal communication**

11. Also on the subject of the spoken word it would be nice to see session leaders making better use of what they say and putting more thought into how they say it. It has been pointed out, and seemed blatantly obvious when it was, that when the instructor doesn't have a hand actually holding the rope then their voice is their only mechanism of control. Accidents happen far too quickly for any notion of grabbing an already moving rope to be realistic.

Adventure Activities Licensing Authority  
August 2013