

Info Log – July 2014

Double action Twist-lock karabiners

Incident

In February 2014 a young participant suffered a ground fall whilst being lowered from a tree-climbing activity. The participant fell from near the top of the activity, having just begun to descend and having become detached from the rope. Coincidentally, the participant was being videoed by his mother. Whilst shocking for her the video footage, albeit of poor quality for the purpose, has been useful in identifying what we believe to have been the cause of the accident.

The participant was being bottom-rope belayed by an instructor, using a Gri Gri , in an apparently competent manner. The participant was attached to the rope using a double action (twist & open) twist-lock karabiner attaching a figure of eight on a bite (with a stopper knot) to the belay loop of the participant's harness.

It appears that the karabiner was cross-loaded as the participant lowered their weight onto the system in such a way that the belay loop loaded the gate, and the rope loaded the back bar. A combination of the cross-loaded karabiner and the loading and unloading of the system (as the participant readjusted their weight) resulted in the karabiner opening. This allowed the belay loop to become detached leaving the karabiner on the rope as the participant fell to the ground. Whilst this may sound like an unlikely sequencing we were subsequently able to recreate it, albeit deliberately, with comparative ease.

Notes

Double action twist lock karabiners do not appear to be commonly used in configurations where a moving rope or other obstructions could come into contact with the rope. However, this incident highlights that in some circumstances the movement of a loaded belay loop against the gate of a double action twist-lock can cause the gate to open and the belay loop (or the rope loop) to escape.

A variety of screwgate, triple-lock and quad-lock karabiners together with captive eyes and other adaptations and indeed tying in directly to the rope are all commonly used alternatives.

Lessons learned.

- 1/ Double action twist-lock karabiners can, and indeed have, opened whilst being used to attach participants to the rope during climbing activities.
- 2/ The configuration in which they are being used should be carefully considered in light of this incident and the alternatives available.

3/ Where providers and/or operators of activities do not have considerable experience of such equipment they should seek the advice and guidance of an appropriately competent technical advisor. In this instance such a person is likely to be an experienced, up-to-date holder of the Mountaineering Instructors Award (MIA) or be a European Ropes Course Association (ERCA) trainer.