

Attaching to the Rope by Karabiner?

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Karabiners only have sufficient breaking strength if loaded longitudinally. If loaded transversally or due to other unfavourable loading of the gate a karabiner may break even at a fall length of one metre or less. In the worst situation this means falling to the

by karabiner is commonplace, because it facilitates detaching from the rope and going to another rope. Screw gate or self-locking karabiners are used for attachment. But several accidents have happened due to inadvertent and unwanted detachment from the rope. The number of accidents has increased during the last few years, often enough with serious consequences: two cases of paraplegia became known by now. The rope detached itself both from karabiners with screw-locking gates and from karabiners with twist-locking gates. At first sight, there is no idea, how this could happen.

In none of these cases could clarification be obtained as to how the closed screw-locking sleeve (if it really was closed!) had become undone. There are only speculations. With a fair probability the screw-locking sleeve may not have been closed to its stop and tightly fastened, but only loosely screwed up. By inadvertent rubbing of the loose screw-locking sleeve against clothing, the rope, or whatever, the partially unscrewed screw-locking sleeve might have been unscrewed further during climbing. Self-acting opening even by vibration or imbalance of the screw-locking sleeve can be imagined in such a case, also.

The opening of twist-lock karabiners may happen in a similar way: a textile filament of the rope sheath may cling to



◀ **Fig. 1: Typical method for tying to the rope, frequently used for indoor top roping. Dangerous!**

Fig. 2 / 3: ▶ Typical opening of a twistlock karabiner



ground and being killed. So the advice must be not to attach to the rope by a karabiner, or, if the use of karabiners is essential, as maybe while top-roping or on glaciers, the following text makes proposals on how to minimise the chance of such breaking of karabiners.

Top roping

In top-roping technique, especially at climbing walls or among students under instruction, attaching to the rope

In all cases where screw gate karabiners had been used, people stated that the screw gate had been closed originally. But the fact is that it was always found that at the decisive moment the karabiner's screw-locking sleeve was undone far enough for the gate to open.



