



CMC Rescue Technical Report # 13

Tandem Prusiks vs. Gibbs Ascenders

Tandem Prusiks vs. Gibbs Ascenders is a big topic of conversation in rope rescue today.

For ascending, there is no discussion. Gibbs were designed for ascending, and they are a superior device for that. They easily attach, are strong, and grip well on icy or muddy ropes. They are much stronger than handled (toothed) ascenders and their cam does less damage to the rope when sliding up because it lacks the scores of "teeth" that other ascenders have.

The debate is when Gibbs are used in other than single person ascending applications, such as haul cams in mechanical advantage systems or for belays. In those uses they can cut, or de-sheath a rope at a relatively low level of force. Demonstrations in the CMC Rescue classes are routinely set where students are pulling on a rope with a 9:1, and Gibbs de-sheaths the rope. The core strands remain intact but if it were to happen during a rescue, it would mean stopping the operation and replacing the rope. Prusiks on the other hand, slip when the forces get too high. That slipping does not damage the main line, but it does warn a trained rescue team that something is wrong, perhaps the litter or the attendant's foot is stuck. The slipping also relieves some of the force, but in a gradual manner.

The difference between the actions of Gibbs vs. Prusiks is even more apparent in belay applications when a load is suddenly dropped on to the belay device, such as a main anchor failure. Tandem prusiks will slip, and may even melt while slowly stopping the falling load. Gibbs will slam on the rope, cut the sheath and some of the core, and possibly even self destruct. In CMC Rescue School tests, pins and cams have broken and side plates have blown out.

When looking at various rope training manuals over the past 30 years, one will see that the evolution has been from Prusiks to Gibbs and now back to Prusiks for haul cams in mechanical advantage systems. The ratchet, or back cam, can still be a Gibbs because it is closely connected to the anchor and does not have the possibility to see the forces the haul cam sees. However, in CMC Rescue classes, after a Gibbs is tested and everyone sees what it can do in test situations, it is then put back in the bag and hardly ever comes out of the equipment cache.

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