



AAC Publications

Fall on Rock – Anchor Knot Failure

North Carolina, Pisgah National Forest, Looking Glass Rock

On July 7, Transylvania County Rescue Team received a call at 3:36 p.m. regarding a fall with injury at the South Side of Looking Glass Rock. Wilderness First Responders were on scene when I (Karsten Delap) arrived at 4:08 p.m. to find the patient (male, early 20s) supine, with his girlfriend holding C-spine. The patient was not wearing a helmet, but said he did not hit his head and had not lost consciousness. He had an open fracture (already bandaged) to the right tibia/fibula and possible fracture to the left tib/fib as well as the left ankle.

Once other rescuers arrived, we transported the patient to the trailhead via wheeled Stokes basket. Fox Mountain Guides provided steep-angle belays on the trail when necessary. Care was turned over to flight medics, and the patient proceeded to the landing zone in an ambulance.

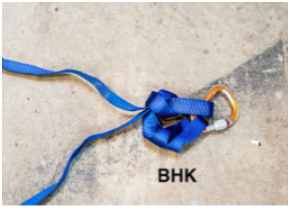
ANALYSIS

The climbers had planned to set up a top-rope from Stage Ledge on Looking Glass' South Side. They scrambled to the ledge, built an anchor using two cams, and one of the climbers proceeded to lean back on the rappel. At this point, the climber stated, he felt the knot at the master point slip, hold for a second, and then he started to fall.

I took photos of the scene at the base of the route and on top. When the climber hit the ground, his rappel rope was still threaded through the device clipped to his harness. Two locking carabiners, still locked, were clipped to the rope. On top, two nylon slings that were tied together to extend toward the lip remained connected to the anchor. At the other end was an overhand knot forming a loop.

The evidence shows that the climber attempted to tie a BHK (Big Honking Knot) for a master point. Tied correctly, this overhand knot creates two bights of webbing or rope to provide redundant material at the master point. However, it is possible to tie the knot incorrectly and create a slipknot that looks similar but will fail under load. Check your knots before trusting them! (Source: Karsten Delap, Fox Mountain Guides.)

Images



Correctly tied BHK, with extra "ear" of webbing (lower loop in photo) clipped to the master point for safekeeping. (Middle) Incorrectly tied master-point knot, creating a slipknot with no backup. (Bottom) Under load, the extra ear of the slipknot pulls through and the knot fails.

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