



Top-Rope Anchor Failure — Sling Cut by Sharp Rock

Wisconsin, Devil's Lake, Gill's Buttress

In the afternoon of June 21, a party of four was top-roping Gill's Nose, a 5.11 route at Gill's Buttress. The top-rope had been set up by Person 2. Three of the climbers had climbed on the route, falling and lowering safely without any issues. Climber 1 was the last on the route and was tasked with cleaning. He did not fall until the upper section's crux. He describes feeling the rope catch him, but a moment later he started free falling. The rope and the carabiners at the masterpoint fell with the climber. He hit a slab toward the bottom of the climb and came to rest within 15 feet of the base. In total he fell approximately 50 feet.

The climber sustained two collapsed lungs, six broken ribs, a broken scapula, a broken leg, a puncture in his right shin, a burn across his neck, a punctured bladder, and abrasions across his body. An EMT and WFA were on the scene immediately and placed the climber into recovery position on his left side after noting the most extensive damage was right-sided. Within 10 minutes, park staff were organizing the rescue. It took approximately an hour to litter and move the patient to a safe zone for a helicopter. He was then airlifted out of the park to receive emergency care. The patient was expected to make a full recovery.

ANALYSIS

The top-rope anchor was set up in two parts. First, a large boulder on top of Gill's Buttress was slung as protection. To extend the anchor closer to the edge, a 60m Black Diamond nylon runner (about two years old and used only three times as intended) was clipped to the protection with a figure-8 knot. This sling was tied into a masterpoint with a second figure-8 knot. Two locking carabiners were attached to the masterpoint, and the rope was threaded through these carabiners. The accident occurred due to a failure of the nylon runner in the masterpoint loop, causing the rope, carabiners, and Climber 1 to fall to the ground, while the rest of the anchor remained on top.

The protection used, a large boulder, was an excellent choice for the area. However, the extension could have been improved by using thick, abrasion-resistant static rope. Otherwise, cordelette (long enough to be doubled) or two separate slings should have been used. Two loops in the masterpoint might have prevented this accident.

Pictures of the sling indicate a relatively clean, linear cut. The quartzite at Devil's Lake is known for sharp edges, and climbers must be diligent in inspecting the rock at edges, corners, and breaks, including areas the anchor materials could "walk" to. It is unknown if the masterpoint had significant travel. Most likely, the direction of pull during Climber 1's fall partially cut the sling, and a moment after he weighted the rope, the nylon separated at the weakness. (Source: Close associate of Climber 1.)

Editor's Note: In addition to creating a redundant top-rope anchor, consider padding the rock beneath anchor materials to protect against abrasion or cuts.

Images



This sling was tied to create a masterpoint loop for a top-rope anchor. The loop apparently rubbed against a sharp edge and cut.



Sketch of the anchor set-up atop Gill's Nose, showing where the masterpoint loop rubbed against the sharp edge of the cliff top.

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