Rappel Error – Water Knot in Anchor Tether Came Untied

Wyoming, Grand Teton, Owen-Spalding Rappel

On July 23, at about 10:30 a.m., an individual high on the Grand Teton reported by cell phone that he had heard a person fall from above, hit a ledge near him, and then continue down into Valhalla Canyon near the Black Ice Couloir. Shortlythereafter, ranger Bellino received an additional call informing him that a working guide had fallen unroped from the top of the Owen-Spalding rappel. A ranger on the scene was unable to locate the fallen climber at or near the Upper Saddle. A helicopter conducted a reconnaissance ight, and at about 11:55 a.m. a body was spotted approximately 2,500 feet down Valhalla Canyon from the rappel site.

A subsequent investigation determined that the victim was a 42-year-old pro- fessional guide. He had led three students and their chaperone to the summit of the Grand via the Owen-Spalding Route. During the descent, he fell from the stance at the top of the standard Owen-Spalding rappel.

ANALYSIS

When he fell, the guide was trying to free a rappel device that was attached to the end of a belay rope and was stuck in a crack about 40 feet below him. (He is believed to have been hauling the device back to the stance after one client used it for a belayed rappel to the Upper Saddle.) Although several witnesses initially said that the guide had unclipped his lanyard from the anchor, the fall was likely due to the failure of a knot on his lanyard.

Numerous witnesses stated that the guide was secured to the anchor prior to the fall. Several of the witnesses noted that he was, at times, weighting the lanyard. After the fall, a 98-inch section of blue 9/16-inch tubular webbing was found entwined in his harness. An overhand knot was found in one end of the webbing. A photo taken prior to the technical portion of the climb shows that this webbing was tied in a loop with a water knot. One tail is visible and is of adequate length, but the knot is not tightened.

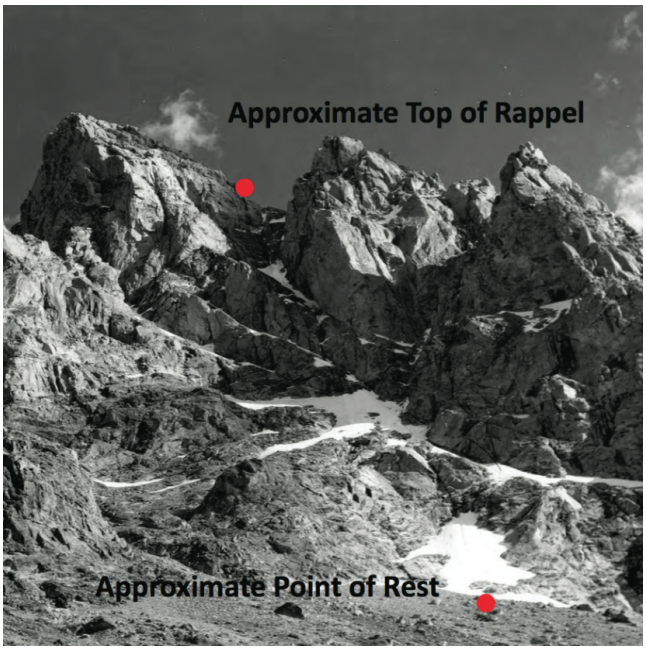
According to other guides familiar with the techniques used on the route, the guide may not have used this 9/16-inch webbing until he arrived at the Owen-Spalding rappel, meaning he would not have weighted the knot until that point in the day. The guide likely would have repeatedly weighted and unweighted the lanyard during the process of belaying his first client down the rappel, pulling up the belay rope, and then trying to free the stuck rappel device. Several studies have focused on the tendency of water knots to slip and fail when the tails are of inadequate length and when the knots are cyclically loaded and unloaded. One of these studies highlights the tendency for a significant amount of tail slippage to occur during initial loading, which would have been the case had the guide not weighted the lanyard until that point in the day.

All the evidence leads to the conclusion that the guide was tethered to the anchor with webbing that was tied in a loop with a water knot, that one of the tails on the knot was of inadequate length, that the tail slipped through the knot, causing it to fail while he was weighting the lanyard, and that this caused him to fall from the rappel stance. (Source: National Park Service Search and Rescue Report.)

EDITOR'S NOTE: A water knot should be tied with both tails protruding from the knot at least three inches, and the knot must be retightened periodically. This tragic death of a professional guide reminds

us that all climbers, even the most experienced among us, must adhere to the same fundamentals of climbing, including regularly inspecting knots and equipment.

Images



The Grand Teton from Valhalla Canyon, showing the long fall suffered by a mountain guide when his anchor tether failed at the top of the Owen- Spalding rappel.

A 9/16-inch sling with an overhand knot, found with the climbing guide who fell from the Owen-Spalding rappel on the Grand Teton. Investigators concluded this sling, used to tether the guide at the rappel anchor, had been tied with a water knot that came undone under load.

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