



## AAC Publications

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### **Fall From Anchor – Incorrectly Tied Knot**

Tennessee, The Obed, Lilly Bluff

**On October 3, Rachel Zoeller (35) and her climbing partner were at Lilly Bluff in the Obed. Rachel had been climbing intermittently since 2007, but it had been over a year since she climbed outside, so she and her partner reviewed the process for cleaning a bolted anchor at the practice anchors located at the base of the cliff.**

After climbing the sport route Rocking Chair (5.9) on top-rope, Rachel cleaned the anchor, audibly going through the steps with her climbing partner below. After threading the rope through the anchors, Rachel tied an overhand on a bight and attached this to her harness with two opposing draws. Before detaching from the anchor, Rachel had her belayer take out the slack, and she test-weighted the system. After it held, she detached from the anchors and indicated to her belayer that she was ready to lower. She remembers the knot unraveling, and she fell about 60 feet to the ground.

Rachel was not wearing a helmet, but she did not hit her head in the fall and remained conscious during the entire incident. She was airlifted to the University of Tennessee hospital in Knoxville, where she spent ten days in the ICU and was treated for injuries including a partially severed spinal cord, shattered pelvis, internal bleeding, and broken back, ankles, multiple ribs, and sternum. (Sources: Rachel Zoeller and the National Park Service.)

### **ANALYSIS**

Rachel's rope was found by responders to have a single overhand knot remaining at the end of the rope. It is possible that Rachel missed the tail end of the rope when she wrapped a bight around the rope to tie an overhand on a bight. The resulting partially tied knot can bunch up, appearing as though it were tied correctly and even hold some weight as it tightens. However, with enough weight, the knot turns into a simple slip knot. The tail will pull through the slip knot until it releases, leaving no bight and just an overhand remaining on the rope.

Rachel did a lot of things right. She practiced on the ground and then went through each step with her belayer as she was cleaning the anchor. A tactile check in which the knot was tugged and turned over might have helped her identify that her knot wasn't tied correctly. Testing the knot with a bounce and watching it tighten before untethering can further demonstrate a knot is correct. (Sources: Rachel Zoeller, the National Park Service, and the Editors.)

**Images**

## Article Details

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