



## AAC Publications

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### **Rappel Error – Uneven Ropes, Stopper Knot Untied**

Texas, Enchanted Rock State Park

**On October 12, I (age 25) was in a team of five guides setting top-rope anchors for a base-managed site.** Three guides left to hike in with our clients while another guide and I finished setting anchors and dropping ropes. We then needed to rappel to the bottom to meet our team. We threaded our last rope and tossed it down but could not see the ends on the ground, and there was no middle marker on the rope. I tethered myself to our anchor and began to set up my rappel, extending my rappel device on nylon webbing and using an autoblock backup. I transitioned to the rappel and began to descend.

At about 15 feet above the ground, I realized that I had reached the end of one strand of my rappel rope. The barrel knot we had tied as a stopper in this strand had run into my autoblock. I tried to pull myself up off the knot so I could fix the issue. In the process, the knot rolled over itself and became undone. The rope ran through my device, and I fell to the ground and rolled down some rocks. Upon landing, I bit my tongue, suffered multiple abrasions on my legs, and had pain at the top of the left side of my pelvis, but we decided I was well enough to stay and complete my day. (Source: Tuesday Kahl.)

#### **ANALYSIS**

This site was the third choice for the guided group, and they were in a rush to set up top-ropes for their clients. The climbers executed some of the safety steps for a rappel, including closing the system with stopper knots and using an autoblock as a backup. The main item they missed was ensuring both rope ends were on the ground. It is possible the rope they were using was shorter than expected, but this alone would not account for the uneven ends. To prevent this, the climbers could have fed both ends of the rope through the anchor simultaneously until all the rope was out, so they would know the ends were even, despite the lack of a middle mark.

The barrel knot should have prevented the climber from rappelling off the end of the rope. (It is unusual for this knot to “roll” in the manner described.) It’s possible this stopper knot was not tied snugly enough and/or there was too little tail, leaving little margin for error as the rappeller worked to separate the knot from her auto-block. “Fingers to elbow” is a good way to measure a generous tail of rope below a stopper knot. In addition, it is crucial to dress knots snugly. (Sources: Tuesday Kahl and the Editors.)

**Images**

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