



## AAC Publications

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### **Rappel Error – Single-Rope Rappel, Loss of Control**

Kentucky, Red River Gorge, Eastern Region

**On the evening of July 4, Chief John May (51) of Wolfe County Search and Rescue was rappelling during a rescue operation at Chimney Top Rock in the Red River Gorge.** During this single-line rappel, he noted some difficulty in controlling his speed of descent and was unable to come to a complete stop. More than 100 feet from the bottom, when his feet were no longer able to make contact with the cliff, his descent became rapid and the friction of the rope began to burn his hands. Chief May descended through some large trees before making impact with the ground. He suffered rope burns on his left and right fingers, four spinal fractures, a severe concussion, and a torn tendon.

May was rappelling on a 70-meter 10mm dynamic rope using a Mad Rock variable- friction belay/rappel device (the Mad Lock). An optional pin used to add friction to the device was not in place. A 6mm presewn Sterling Auto Block cord, with four wraps, was in place as a backup. Chief May weighed 252 pounds and was carrying an additional 20 pounds of gear, counting his equipment and extra water for the lost hiker. He was wearing a helmet and fingerless leather rescue gloves.

#### **ANALYSIS**

Rappelling a single strand of rope requires more friction and greater care with backups than rappelling on two strands. Several weeks after the incident, it was discovered from photos taken during the rescue that the rappel device was unintentionally loaded using the low-friction side of the device. Chief May typically rappelled using the standard, high-friction side of this device for better control. (It was dark at the time, which may have contributed to the mistake.) With the total weight of May and his equipment, the low friction did not adequately control his descent. Burns on the rappeller's autoblock cord suggest his backup engaged the rope, but either the friction was insufficient to arrest an uncontrolled descent or the rappeller inadvertently grabbed the autoblock with his brake hand and partially disengaged it. Wolfe County Search and Rescue

Additionally, it was thought the dynamic rope may have contributed to the loss of control, as the rope would have stretched under load and would have been narrower than its stated 10mm. During the initial part of the rappel, the weight of the rope hanging below May and the weight distributed to his feet on the wall helped him keep control.

Prior to descent, Chief May test-loaded both the rappel device and the autoblock as part of the team's normal safety protocols. Burns on the autoblock cord indicate it engaged but not sufficiently to arrest his fall. The rappel device was not extended, but it did not touch the autoblock during his descent. Based on the burn pattern on his hand, Chief May thinks he may have been clamping down on the autoblock, preventing full engagement. It is important to control the brake strand in a way that does not impede the engagement of an autoblock. (Source: Wolfe County Search and Rescue.)

**Images**

## Article Details

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