



Top-Rope Soloing Fall – Device Unclipped from Rope

Colorado, Montezuma, Haus Rock

On the morning of September 19, Craig Faulhaber (41) fell to the ground while top-rope-soloing Burning Down the Haus (5.13d). This 45-foot, slightly overhanging sport route is located on Haus Rock near Keystone, Colorado. Faulhaber, a climber with 12 years of experience, set up his system using a single strand of 9.5mm dynamic rope. He fixed the rope and descended using a Petzl Grigri, clipping the rope into one bolt near the top as a directional on the overhanging route.

For a self-belay, he switched to a Petzl Shunt attached to his harness' belay loop with a locking, anti-cross-loading carabiner. As he climbed, Faulhaber tied overhand stopper knots as backups. The rope was weighted at the base by water bottles and shoes to allow the Shunt to run smoothly up the rope. He worked the moves for most of the morning, falling about 30 times without incident. In a Mountain Project post, Faulhaber wrote, "I try the section, fall on the Shunt, brush, lower, try again, repeat." He linked the moves and decided to try the crux sequence again. This ten-foot section of V8 crimping required twisting and high-stepping about 30 feet off the ground. Faulhaber recalls, "I finally got the sequence and was pretty happy, looked down at a fellow climber who was watching to express some psych, and decided to try one more time."

This time Faulhaber fell, and in the process, his Shunt became disconnected from the rope. After 35 feet of free-fall, he landed on hard-packed dirt and rocks. Other climbers at the crag called 911, and Summit County Rescue Group responded. He was transported via ambulance to Keystone Medical Center and then helicoptered to St. Anthony's Hospital in Denver. Faulhaber sustained multiple broken bones, including L1 and L2 vertebrae, both heels, right elbow, pelvis, sacrum, and ribs.

ANALYSIS

First and foremost, do not use the Petzl Shunt for solo top-roping. The Shunt is designed to use below a rappel device as a back-up, replacing a friction hitch like the prusik. [There was a very similar incident in West Virginia this year. See report [here](#).]

Faulhaber's Shunt and locking carabiner were still properly attached to his belay loop. The rope and stopper knots were intact. His last stopper knot was about six feet below where he fell. But the Shunt had somehow cleanly detached from the rope.

Faulhaber had researched different devices and solo techniques. He chose the Shunt after seeing it recommended on a blog/video by a professional climber. Though climbers have used the Shunt for solo top-roping since the 1980s, it was generally understood that it should only be used where the rope hangs straight down on vertical or less than vertical terrain. The Petzl website states that the Shunt is not recommended for self-belay for many reasons, including but not limited to the risk of the device's cam jamming in an overhanging or traversing situation.

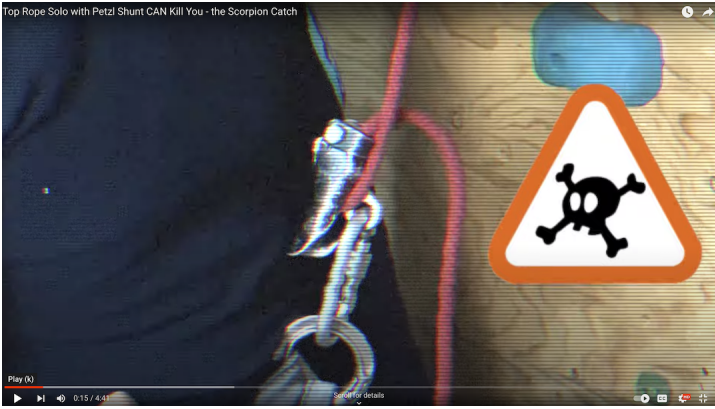
Though Petzl has discouraged self-belay use since 2012, Faulhaber purchased a Shunt that featured a pre-2012 technical notice. The attached diagram showed a climber ascending a fixed line in vertical terrain with the Shunt. It also featured a diagram discouraging ascending a rope in overhanging terrain. Today, some retail websites that sell climbing gear still feature this older technical notice, and may even still recommend the Shunt for ascending.

The best Faulhaber can surmise is that the gymnastic twisting and high-stepping positions on the overhanging crux contributed to the accident. The device showed minimal deformation upon later inspection.

The most plausible theory is that the device turned sideways just below Faulhaber's waist as he high-stepped. There may have been enough friction in the system to create slack above the device, catching the rope in a sideways position as he fell. Instead of the Shunt's camming unit engaging, the rope may have caught in the small channel between the camming unit and the outer edge of the device's frame. This might have created large and unparallel forces that shock-loaded the device, allowing it to flex, and thus releasing the rope.

The best illustration of this phenomenon, referred to as the "Scorpion Catch" (because the twisted rope looks like a scorpion's tail), can be found on climbing guide Yann Camus' YouTube page. Again, Petzl clearly states that the Shunt is designed to be used only as a rappel backup and not for top-rope soloing. (Sources: Craig Faulhaber, Mountain Project, Climbing Magazine, and the Editors.)

Images



Clip from a video demonstration showing how the Shunt can flip upside down and catch the rope in such a way that it releases under load. Heed the manufacturer's instructions: Do not use the Shunt as a solo top-rope device.

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