



Rescue of an injured climber from the Redguard Route in Eldorado Canyon State Park

On the morning of the June 26th 2010, [Boulder County dispatch](#) notified Rocky Mountain Rescue Group (RMRG) of an injured climber in need of assistance on [Redgarden Wall](#) in [Eldorado Canyon State Park](#). The ensuing rescue took three hours, involved 32 mountain rescue personnel, medical personnel from three agencies, Boulder County Sheriff Officers, and Colorado State Park personnel.

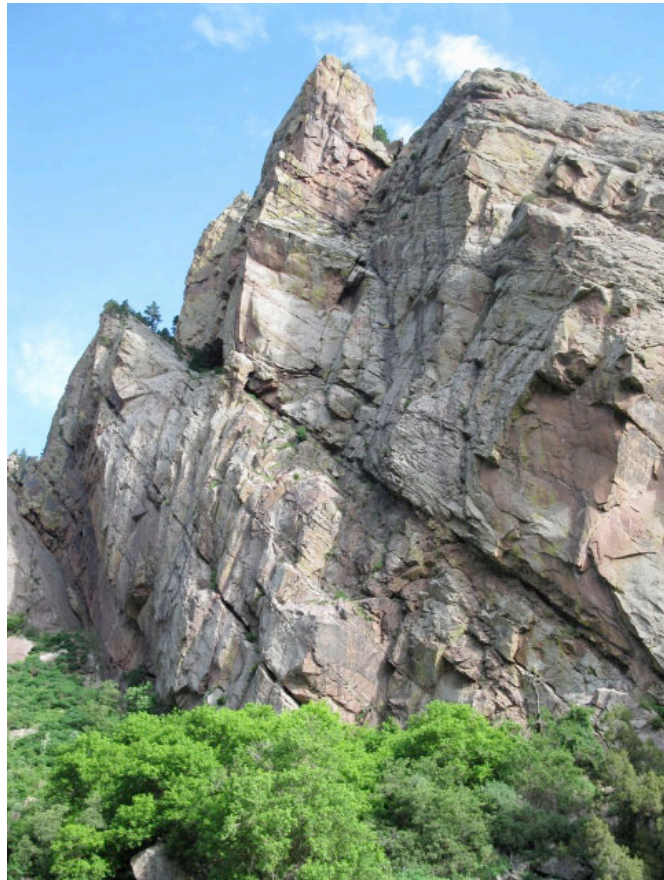
Events Leading to the Accident

[Based on a [detailed summary of the accident](#) written by Bill Wright, one of the climbers. RMRG sincerely appreciates Bill Wright's public support. However, other than receiving rescue services, he is not affiliated with RMRG. His words and opinions are his own.

Two experienced climbers were attempting to complete 100 pitches of climbing within a single day in Eldorado Canyon State Park. After already climbing 29 pitches, the team started the [Redguard route](#), traditionally a 7-pitch climb rated 5.8 on the Redgarden Wall. To achieve the 100-pitch goal the team was simul-climbing, a method where neither the leader nor follower has an active belay; rather they climb at approximately the same speed with a near taught rope and several pieces of rock protection between them. When the lead climber was about 300 feet above the ground, he fell an estimated 120 - 140 feet and came to a stop apparently inverted and unconscious, 15 - 30 feet above a large ledge. The follower was able to raise the attention of a runner passing on the trails below who then called 911.

The Rescue

The following is an account of the rescue that took place after the fall. This is not an analysis of the cause of the accident.





Initial Response

At 7:27 am a request for assistance went out to RMRG, Rocky Mountain Fire, Boulder County Emergency Services, and Eldorado Canyon State Park.

Initial dispatch information included a preliminary description of the accident and injuries (fallen climber, unconscious), a likely location (Redgarden Wall), and crucially, that the injured climber was hundreds of feet off the ground, dangling from a rope.

A Boulder County Sheriff's Officer, also an active climber, arrived at the park minutes after the initial page; he was able to gather information from witnesses and assess the accident site from the road. He determined that the climbers were on the Redgarden wall to the right of [The Naked Edge](#).

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Patient Access



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A rescue of an injured party in vertical terrain usually requires a significant amount of equipment. In general, it is easier to move this gear over 3rd and 4th class terrain than it is over 5th class terrain. Therefore, RMRG typically sends rescuers and equipment in from the top of the cliff, via the "walk-off" trail, rather than haul the equipment up to the patient through 5th class terrain. There are some cases, however, when the access from above is more complicated and hauling from below becomes safer and more efficient ([see Doub Griffith rescue](#)). In this case, given the uncertainty of the number of injured climbers and their exact locations, RMRG began deploying rescuers to the top of the Redgarden Wall via the East Slabs descent route while further analysis of the situation could be done.

The first RMRG member arrived at the State Park at 7:35 am and began fixing lines at the "Chock Stone," a vertical rock constriction at the access point to the East Slabs. Fixing lines up the Chock Stone and East Slabs allows rescuers carrying heavy equipment to ascend more quickly, safely, and efficiently.

At approximately 7:45 am, further fire department and RMRG rescue vehicles arrived at the park and began assembling the necessary personnel and rescue equipment for insertion via the East Slabs. Additional rescuers and ropes were expedited to continue fixing lines up the East Slabs in preparation for the evacuation equipment and personnel to follow. Two rescuers soloed the East Slabs to begin assessing anchors and evacuation lines at the top of the wall.

Spotters were positioned across the canyon to evaluate whether rescuers would be able access the climbers more quickly from below, to determine whether it was viable to haul evacuation gear up from below, as well as identify options for evacuation routes that could be taken down the face of Redgarden Wall.

An RMRG member interviewed witnesses and established that the lower climber was definitely injured. However, the status of the upper climber was still unknown. Given this, it was decided that the first RMRG medical personnel would access the lower climber from below by climbing the route [Touch and Go](#). Shortly thereafter, however, a pair of climbers on the Naked Edge rappelled to the bolt anchors at the top of Touch and Go and lowered a fixed line for rescuers to ascend. This selfless act for their fellow climbers in need saved significant time in getting medical care to the patient. An RMRG paramedic quickly ascended this fixed line and was treating the injured climber by 8:43 am. An RMRG doctor followed the paramedic and advanced medical care was provided throughout the remainder of the rescue. Two more RMRG members ascended the lines and hauled medical and technical gear to the ledge and established a crucial rock-protection anchor and mechanical advantage system that would allow rescuers to raise and lower the injured climber into the rescue litter once it arrived on scene.





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While the medical team treated the patient, an evacuation team consisting of nine RMRG members ascended the East Slabs. Three more 200-foot ropes (in addition to the Chock Stone line) were fixed and by 8:54 am all evacuation gear and rigging equipment (litter, full-body vacuum splint, medical oxygen, 2 x 600-foot rescue ropes, 4 x 200-foot rescue ropes, racks of climbing protection) had arrived at the top of Redgarden Wall, near the area where the route [Anthill Direct](#) finishes.

In the meantime, while the medical and evacuation teams were still accessing their various locations, it was necessary to determine if the second climber was injured. A second full set of evacuation personnel and equipment was staged for rapid deployment, in case two evacuations became necessary. Using a high-powered PA system it was determined that the higher of the two climbers was uninjured. A few minutes later the medical team arrived at the injured climber below. They quickly determined that there were no anchors suitable for the forces encountered during a vertical evacuation at the injured climber's location. Therefore, the evacuation would need to be run from above (i.e. from the summit of the Anthill Direct area).





Evacuation



The evacuation team on top of the East Slabs quickly constructed a rescue anchor from six pieces of rock protection and equalized them to a master point. The anchor location was chosen to minimize rock fall hazards while still providing good access to both climbers from above. As an added precaution, the uninjured climber was informed via the PA system that rescuers would be coming in from above. He tucked himself under a small feature. The medical team carefully moved the injured climber to an area on their ledge with minimal rock fall danger.

At 9:20 am an RMRG emergency medical technician (EMT) carrying additional medical equipment (oxygen, pulse-oximeter, airway management tools, C-collar) was lowered over the edge via a 600-foot rope. His first stop was at the upper climber. After confirming that the climber was uninjured, the EMT transferred the climber from the original rope and anchor system to the rescue system. Since the lower climber was still partially suspended by the original system, the rescuer confirmed that this rope and anchor were sound. Once the upper climber was transferred to the rescuer's system, they were lowered together another 100 feet to the location of injured climber, where the additional medical equipment was delivered to the medical team. Finally, the uninjured climber and rescuer were lowered to the base of Redgarden Wall, arriving at 9:30 am.



At 9:38 am an RMRG member carrying the evacuation litter and full-body vacuum splint was lowered to the injured climber on a second 600-foot rope. The first 600-foot rope, which had been used to lower the uninjured climber to the base, was now raised 200 feet so that it could be attached to the litter in a dual-tensioned mainline vertical evacuation configuration - an evacuation technique essential for negotiating the complicated, ledged-terrain of Eldorado Canyon. The patient was quickly packaged into the litter and lowered to the ground. The total time of the vertical evacuation once underway was 3-4 minutes.

As soon as the litter arrived at the base of Redgarden Wall, medical personnel from American Medical Response (AMR) and Air Life joined in medical care. The injured climber was then evacuated by RMRG and Alpine Rescue Team members down an additional 300 feet of difficult scree terrain to the trail near "The Whales Tail", and finally carried across the foot bridge to the waiting ambulance, arriving at 10:25 am. The climber was then transported to Rocky Mountain Fire Station 6 where the Air Life helicopter transported him to the hospital. Louisville Fire (providing mutual aid to Rocky Mountain Fire) provided helicopter landing zone support.

The final 300 feet of the evacuation covered steep, large scree.

Cleanup of the medical site, evacuation rigging, and the remaining climbers' equipment continued for approximately another 90 minutes. In addition, RMRG began a standard climbing accident investigation in order to determine whether any lessons could be learned from this particular accident.

Conclusion

The extensive climbers' account referenced above provides significant information on the events leading up to the accident. One clear lesson can be drawn immediately: From the extent of damage to the injured climber's helmet, there is little doubt that its use prevented more significant injuries. Also, proper help from fellow climbers on scene in the early stages of an accident can prove invaluable to the effectiveness of a subsequent rescue. The climbers on the nearby route that lowered and fixed their climbing ropes for ascent by RMRG members increased the speed of getting advanced medical personnel to the injured climber. Additionally, the added risks of the simul-climbing technique must be fully understood before it is employed. In this case the climbers had an





awareness of the restrictions this technique imposed and were able to improvise self and companion rescue techniques. While most often not being able to replace organized rescue response, self and companion rescue can stabilize a situation while the larger rescue is getting underway. The actions in the early stages of this accident of the climbing partner served to stabilize both himself and his injured partner to the extent possible while awaiting rescue.

Acknowledgements

RMRG wishes to thank all the individuals and agencies involved in this rescue. In addition to 25 RMRG members, seven rescuers from [Alpine Rescue Team](#) (Evergreen, CO), personnel from Rocky Mountain Fire, AMR, Louisville Fire, Boulder County Sheriffs Office, Colorado State Parks, and Air Life assisted in this rescue. Furthermore, many thanks must go to the climbers who assisted this rescue by allowing their climbing rope to be used as a fixed line, ultimately providing faster access for medical care.

For additional information on climbing rescue response in Eldorado Canyon or the evacuation techniques contact us at: <http://www.RockyMountainRescue.org/contact>

