

**FACTUAL REPORT**



Mount Chiquita and Ypsilon Mountain. Photo taken by Jeff Christensen

**DATE 11/21/2005**

**NATIONAL PARK SERVICE  
U.S. DEPARTMENT OF THE INTERIOR**

**In Memory of Jeffrey Allen Christensen  
February 23, 1974 - July 29, 2005**



*“We are rangers. We walk the last of the wild lands, patrolling the interface between man and nature. Ours is the world of the sun and sky, cloud and storm. Ours is the world of flower and tree, rock and mountain. We rest by the waterfall and cool our feet in the deep pools of the glen. The elk and deer, the coyote and fox, our silent companions. The hawk and eagle follow us by day, the owl leads us by night.*

*“We are rangers. We travel alone, silent caretakers of a world fast disappearing. It is not our job, rather it is our honor, to behold that which nature has bestowed upon us. It is not our job, rather it is our privilege, to play some small part in preserving this beauty for our children and their children beyond them. We travel alone, there are few of us, and the task which lays before us is enormous. Some say we face risk, even unnecessary risk, but in our hearts we know that it is nothing compared to the loss of the wilderness. It is nothing compared to the loss of the bear, the cougar, and the wolf. We risk all to protect that which endures beyond our individual selves, that which we love beyond all else.*

*“We are rangers. We treat our fellow man with respect. We understand those who seek solitude in the wild places. We are teachers, to those who wish to tread for the first time on ground made of dirt rather than concrete. We watch in delight at the smile of the visitor who first substitutes the canyons of skyscrapers for that of massive cliffs.*

*“We feel the excitement of the family who first hears the bugle of the elk, the child who sees the bighorn ram, and the grandmother who reviews her life while sitting by the flowing stream. “We are rangers. We keep those who would harm the land as well as those who would harm their fellow man at bay. We care for the sick, search for the lost, assist those who cannot assist themselves. Sometimes we bring home those who would not otherwise return.*

-Spoken by Mark Magnuson, Chief Ranger, Rocky Mountain National Park, at Jeff Christensen's Memorial Service



**FACTUAL REPORT OF THE  
SERIOUS ACCIDENT INVESTIGATION TEAM  
JEFF CHRISTENSEN FATALITY**

**DATE 11/21/2005**

**CHRISTENSEN ACCIDENT INVESTIGATION**

**Investigation Team**



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Ralph H. Tingey, Associate Regional Director for Operations, Alaska Region  
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Team Leader

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National Park Service  
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National Park Service  
Investigator and Risk Management Advisor

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Kevin FitzGerald, Chief Ranger, Intermountain Region  
National Park Service  
Management Liaison

The above identified employees hereby agree, by virtue of their signature, to the public release of their names, positions and biographies in conjunction with this report.

CHRISTENSEN ACCIDENT INVESTIGATION

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## CHRISTENSEN ACCIDENT INVESTIGATION

### Preface



The purpose of the Serious Accident Investigation Team (SAIT) is to gather all pertinent data and facts surrounding the accidental death of National Park Service Ranger Christensen while conducting a backcountry patrol on July 29, 2005, within the Mummy Range of Rocky Mountain National Park, Colorado.

In reviewing these facts the Serious Accident Investigation Team hopes to identify, if any, the contributing factors and root causes that may assist the National Park Service in preventing such catastrophic accidents in the future within all of the 389 National Park Units nationwide. As hard as it is to investigate the death of an employee who made the ultimate sacrifice in the performance of his duty and in the service to his country, this team conducts this review and investigation with the utmost humility and sensitivity toward the selfless and dedicated work of Jeff Christensen, to his family, to his friends and co-workers and the other employees of Rocky Mountain National Park and the National Park Service who have suffered the tragic loss of one of our own. We hope to learn from Jeff Christensen's experiences and that what is learned will benefit all who follow in his footsteps.

## CHRISTENSEN ACCIDENT INVESTIGATION

### Executive Summary



National Park Service Ranger Jeff Christensen, age 31, of Frasier, Colorado, was killed on Friday July 29, 2005 when he suffered head injuries as a result of a fall somewhere below the eastern summit of Mt. Chiquita in Rocky Mountain National Park.

The accident, which was not witnessed, is estimated to have occurred mid afternoon on the 29<sup>th</sup> while Christensen was on a backcountry patrol in the Mummy Range section of the park. An intensive search and rescue operation was initiated by the park early on the morning of July 30<sup>th</sup> and continued under the direction of the National Park Service's Type II Central Incident Management Team. Christensen was discovered at approximately 1 p.m. on Saturday August 6, 2005. Christensen's mother and father were in the park at the time of discovery and were immediately notified.

Rescue personnel and investigators from the park and the Larimer County Sheriff's Office were flown to the scene. Christensen was recovered and evacuated by helicopter from the scene by rescuers and investigators from the National Park Service, and the Larimer County Sheriff's Office (SO) processed the accident scene immediately. The scene was documented and Christensen was flown from the site at approximately 1900 hours and transferred to the Larimer County Coroner where he was officially pronounced deceased.



## **BACKGROUND**

Established on January 26, 1915, Rocky Mountain National Park lies in north-central Colorado, between the towns of Estes Park and Grand Lake in the Rocky Mountains. It has over 355 miles of designated trails for hikers, backpackers and horseback riders, and in the winter for snowshoeing and cross-country skiing. The park is composed of high mountains, at least 60 peaks rising above 12,000 feet which are used daily by hikers and climbers. Longs Peak, the highest, rises 14,259 feet above sea level.

The backcountry of the park is patrolled by permanent and seasonal National Park Service rangers. Ranger personnel are selected for both their law enforcement background and training, and their backcountry knowledge. Backcountry knowledge includes experience, training, and skill in hiking, camping, off-trail travel, and route-finding ability. Some backcountry rangers are hired for specialized skills, including horse and stock handling, rock climbing, snow and ice climbing, and mountain search and rescue. Rangers perform a wide variety of visitor and resource protection duties. Typically, rangers perform the full range of law enforcement functions including criminal investigation, code enforcement and compliance, education and front country patrol via motor vehicle. These same personnel also conduct backcountry patrols via foot and on horseback both on and off trails above tree line in alpine conditions and terrain. Rangers also lead and participate in search and rescue, including high-angle mountain rescues, wildland firefighting and structural firefighting, and emergency medical services. They are expected to know resource management techniques, provide visitor information and education, and be knowledgeable in government regulations. Park Rangers are solely responsible for the daily patrol operations within the 265,769 acre park.

Seasonal park rangers are trained annually, upon returning to duty or being initially hired. Training at Rocky Mountain National Park usually takes place during the months of May and June. Training typically consists of park orientation, 40-hour law enforcement refresher, backcountry and front country orientation, search and rescue (SAR) training, emergency medical services, avalanche skills training, stock management, and white water rescue.

Specialized equipment and clothing are necessary in the performance of a ranger's duties. Each ranger is provided with a uniform allowance to purchase approved uniform items from the contract uniform supplier. Two distinct basic uniforms are required. First, a Class "A" uniform, with "flat hat", dress shirt and tie, or short-sleeve summer shirt, green slacks, leather belt, shoes or boots and brown socks. The second uniform is a Class "A"

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field uniform, consisting of a baseball cap, short-sleeve gray shirt, loose cut field pants, leather belt, brown socks, and a choice of leather hiking boot or leather/fabric light-weight hiking boot. At Rocky Mountain N.P. there is no requirement to wear the uniform issue boot on backcountry patrols.

All commissioned park (law enforcement) rangers at Rocky Mountain National Park are issued defensive equipment, including a SIG Sauer pistol, handcuffs, equipment belt, soft body armor, radio, radio holster, radio charger and any specialized protective equipment necessary to safely perform their duties.

In addition to uniform items, specific backcountry equipment is either issued or is made available at the Ranger Operations Center and/or ranger stations for check-out by the staff. Such equipment includes:

Backpack	Dwyer Wind Meter
Gear bag	Extra Radio Battery
Clipboard	Clamshell and AA batteries
Small Nylon Bag	Nomex Shirt/Pants
Space Blanket (large)	Porta Clip
Space Blanket (small)	Stinger Flashlight
Compass	Radio Chest Harness
Signal Mirror	Pager
Flagging	Pager Case
Leatherman Tool	Gun Lock
Headlamp	Metal Ticket Case
Trails Illustrated Map	Nylon Ticket Case
EMS Kit	

For park rangers on mountain climbing patrols, specialized equipment such as ropes, carabiners, protection devices, ice axes, climbing harnesses, and helmets are also available for check-out.

In addition to the NPS supplied equipment and clothing, rangers supplement their government issued equipment with personal gear. Specifically, the uniform hiking boots,

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while appropriate for hiking, are not designed for technical mountain climbing, and the fit is not perfect for all feet. Many of the rangers interviewed stated that they had purchased their own climbing and hiking boots. Afternoon thunderstorms are common, and many of the rangers also indicated that they had purchased high quality Gore-tex rain parkas and rain pants, fleece jackets, and down parkas, preferring these to the NPS uniform items.

This was Jeff Christensen's fourth season as a park ranger at Rocky Mountain National Park and he had previously worked as a maintenance employee in the Colorado River District for one summer. After attending the seasonal law enforcement training program at Santa Rosa, in California, Christensen was hired into a commissioned seasonal park ranger position on the Park's West side (Colorado River District) for the next three (3) seasons (2002, 2003 and 2004). 2005 was Christensen's first season in the Park's East District, where he was hired to work in the Fall River Sub-District. Additionally, he had also spent the past seven summers and winters both working and recreating in the mountains and according to his co-workers possessed excellent backcountry skills. In the winter he was employed as a ski patrolman by the Winter Park Resort, one of the largest ski resorts in Colorado. He was an accomplished skier.

Jeff Christensen's immediate supervisor was the Area Ranger in the Fall River Sub-District. The Thompson River Sub-District Ranger was the "supervisor of record" while also serving as the acting East District Ranger at the time that Christensen was hired in the spring of 2005. In early July, the new East District Ranger entered on duty and became the "supervisor of record" for all employees in the Fall River District. The Fall River Sub-District Ranger position was eventually filled and that employee arrived on duty during the search for Jeff Christensen.

According to supervisors, fellow employees, and records, Ranger Christensen attended the 40-hour law enforcement refresher, Emergency Medical Technician (EMT) training, Search and Rescue (SAR) training, a bus tour orientation of the East District, and participated in the Physical Efficiency Battery (PEB), which is a fitness test that all commissioned rangers must participate in, scoring highly in the 1.5 mile run and agility test portions. Christensen was qualified for "Arduous Duty" as a Wildland Fire Fighter. He had attended similar required and optional training in previous years.

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#### EVENTS OF JULY 29, 2005

On the morning of July 29, 2005, Ranger Christensen reported for duty at the Ranger Operations Center (ROC) in the Fall River Sub-District of Rocky Mountain National Park at approximately 0800 hours. He was assigned the BCP shift (B = Backcountry Patrol, and CP = Chapin Pass trail) by an Area Ranger who wrote the pay period 17 patrol schedule for the Fall River Sub-District. Christensen reportedly spent the first couple of hours of his shift in the ROC office completing paper work and working on the computer.

He was wearing a uniform shirt with name tag and badge, ball cap, green field pants, white socks and leather hiking boots with worn rubber lug soles. He carried on his waist the NPS web duty belt holding his Model 228 SIG Sauer 9mm pistol, Gore-Tex rain coat,



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two ammunition magazines in pouches (all rounds were accounted for), expandable baton holder, and a pepper spray (OC) canister in its holster, issued Bendix-King radio unit, small carabiner with keys and small Swiss army knife.

He was carrying his personal daypack which, when found contained the following:

- Tree Saw
- National Geographic Topographic map of ROMO
- Citation book with un-issued violation notices
- Collateral Fine Schedule
- Two (2) empty plastic grocery bags
- Kodak digital camera with case and USB adapter
- Hydration bladder, approximately 1/3 full of water
- Large plastic bottle with colored liquid, presumably kool-aid or Gatorade, approximately 1/3 full
- LED Headlamp, in working order

Christensen was driven to the Chapin Pass trail head on Old Fall River Road by a co-worker, who was working the front country early (F1) shift, at approximately 1030 in the morning. On the way to the trail head, Christensen discussed a couple of potential routes across the Mummy Range. Christensen's plan as discussed with his co-worker was to patrol the Mummy and Hague Ranges, traveling from Chapin Pass to Lost Lake in the North Fork Drainage. He inquired of his co-worker about this proposed route and was informed that the entire Mummy Range traverse was about 22 miles and would take a long time to complete. His co-worker recommended a shorter route to Fairchild Mountain and down to Lawn Lake, and Christensen ultimately settled on hiking to/near Mt. Chapin, Mt. Chiquita and Ypsilon Mountain en-route to the Lawn Lake trail head. Christensen was not familiar with the alpine areas of this particular patrol route, and reportedly had been in this area only once two years previously. Christensen had been previously assigned and completed a two-day backcountry patrol to the Lawn Lake area, hiking in from the Lawn Lake Trailhead.

His co-worker said that Christensen wanted to get off duty on time that day and asked if he could finish the patrol within five (5) hours (*projected finish time would then be approximately 1630 hours*). His co-worker told him he probably could complete the patrol within six (6) hours (*finish time approximately 1730 hours*). According to several of the Rangers interviewed, back country patrol days often extend beyond the Ranger's

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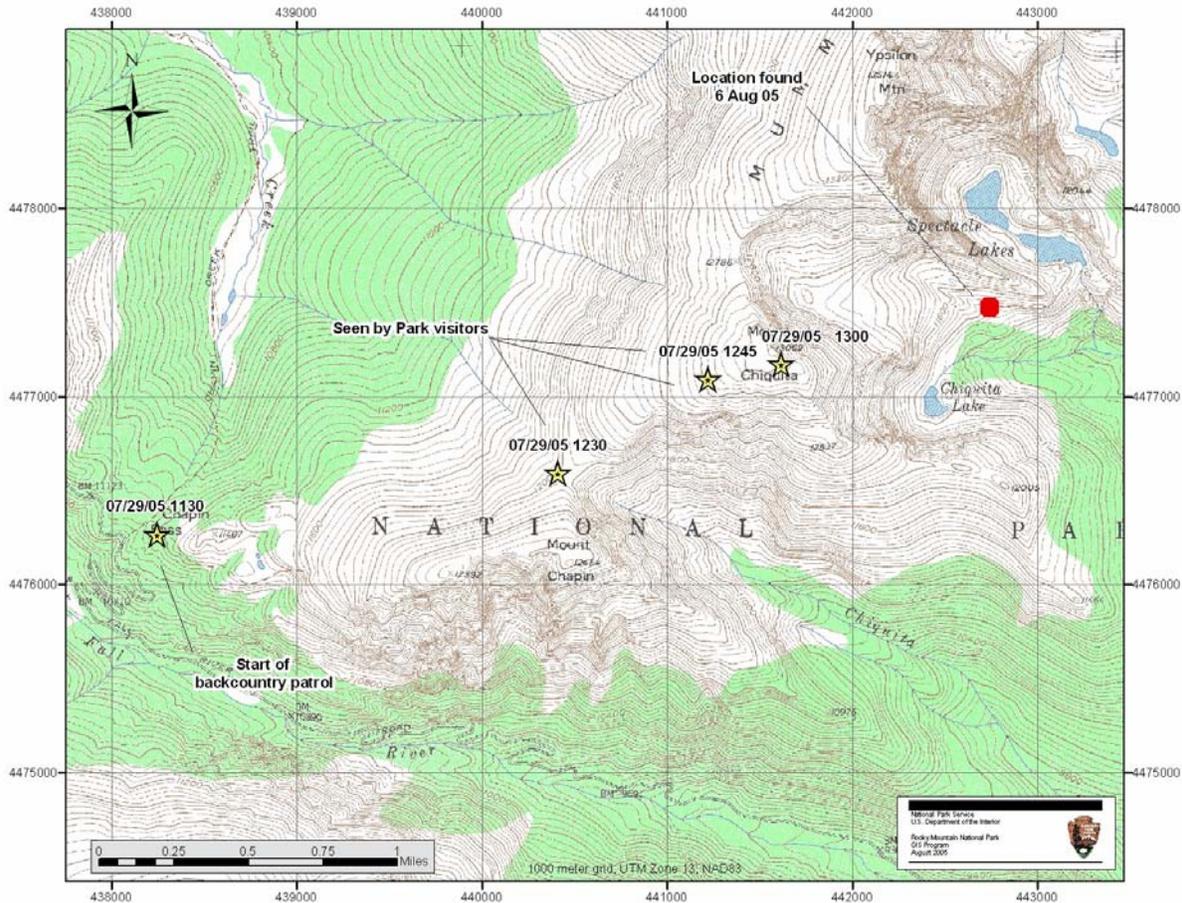
scheduled paid tour of duty. According to his co-worker, Christensen wanted to get off on time at the end of his shift in order to shop for a new vehicle. Christensen requested that the “F2” shift (late front country patrol shift *1430 – 2300 hours*) be advised that he would need a pick up at the Lawn Lake Trailhead later in the afternoon. His co-worker passed on the request to the late front country patrol (F2) shift.

His co-worker dropped Christensen off at the Chapin Pass Trailhead at approximately 1100 hours. At the trailhead he briefly spoke to an NPS employee (a park trail crew foreman) who was installing a sign. As Christensen departed, this employee reported watching Christensen hike up the trail.

It is known that Christensen hiked east towards Mt. Chapin and encountered two hikers from Oklahoma City, Oklahoma, in the saddle between Mt. Chapin and Mt. Chiquita between 1200 and 1230 hours. After speaking with this couple for a few minutes, Christensen proceeded to ascend Mt. Chiquita. Shortly after he departed, one of these hikers recalled looking back and being amazed that Christensen was already halfway up Mount Chiquita. Just short of the summit, Christensen encountered another group of hikers from Chanute, Kansas, between 1300 and 1330 hours and spoke briefly with them. Later, another visitor from Minneapolis, Minnesota, reported that he saw Christensen 1/3 mile below the saddle between Mount Chapin and Mount Chiquita at 1430 hours.

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No other witnesses have come forward to report seeing Christensen beyond this point. At approximately 1800 hours, the late (F2) shift patrol ranger attempted to contact Christensen on the radio, realizing that he had not called for a ride. No contact was made. At approximately 2300 hours, this co-worker noticed Christensen's automobile still at the ROC and contacted Rocky Mountain National Park dispatch and inquired whether Christensen had called for a pickup and was advised that he had not. This ranger then attempted to call Christensen directly at 2305, and with the assistance of a fellow ranger, checked Christensen's residence, with no result. Both of these rangers then checked the Lawn Lake Trailhead. Supervisors were immediately notified and initiated another check of Christensen's residence, located near the Fall River entrance adjacent to the Big Horn Ranger Station. His vehicle, which was located at the Ranger Operations Center at park headquarters, was also checked for signs that he had returned.

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Attempts to contact Christensen via park radio and his cellular telephone were unsuccessful.

It is a common practice in any investigation involving an employee fatality to examine the employee's activities during the previous 24 to 48 hours to evaluate potential contributing factors.

July 27, 2005 was Ranger Christensen's lieu day (LD) but he was scheduled to attend defensive tactics training at Eagle Rock (*a school/camp with gymnasium facilities outside the park*) from 0800 to 1630 hours. The next day, July 28, 2005, was normally Jeff Christensen's second lieu day; however he was assigned the F1 shift, Front Country patrol 0700-1600 hours, by a pen and ink change on the schedule to backfill on overtime for another employee who was assigned a wildland fire detail. It is not known how Ranger Christensen spent his off duty time during the 48 hours preceding 0800 hours on July 29.

### ANALYSIS

Based on the available evidence, it appears that Ranger Christensen hiked the Mummy Ridge from Chapin Pass trailhead, bypassing Mount Chapin on the west, but ascending Mount Chiquita. Based on a sighting at 1430 hours in the Chiquita/Chapin pass area, it is possible that he then hiked back to the pass, however both the time and location of this sighting does not match the other witnesses who actually spoke with Christensen. His exact descent route is unknown, but photos he took that day pinpoint his location at several spots on Mount Chiquita. It appears that he descended one of the northern gullies on Mount Chiquita where he took two photographs of bighorn sheep.



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Discovery of the route Christensen took as he descended from the mountain has been unsuccessful and the location where he fell and received his fatal injury is unknown and may never be known. At some point he took an unintentional tumbling fall, possibly on a snow field, over a short rock/cliff section, or over other unstable terrain and sustained the injury to his head that ultimately proved to be fatal. In addition he bruised his hip, cut his wrist, had numerous scrapes and lacerations and tore his clothing in several places. It may also be possible that he was struck by rock fall, and then as a result, fell. It is believed however, that after falling and receiving a left temporal skull fracture that began the subdural hematoma, which eventually would prove fatal, Christensen reached into his backpack (as supported by blood evidence found inside of the backpack), and removed a tee shirt and wrapped it around his head to control the bleeding. Christensen may also have entered his backpack to retrieve his NPS uniform Gore-Tex jacket which was on his body when he was discovered. It is believed that Christensen then walked, not crawled, to the location in which he would later be discovered. This is supported by the lack of dirt and damage to the front of his uniform pants at the knees, shins and thighs; and to his uniform shirt and jacket at the elbows. A narrow path discovered in the brush directly above his final location could have been made by Christensen or by animal activity. At least two (2) heavy rains were documented during the search and rescue operation, from the time of Christensen's death until his body's subsequent discovery, and as such evidence such as tracks in snow banks may have been washed away or melted. Based on his injuries, the Coroner placed the time of injury at mid-PM, 1600-2000 hours with the time of death to be late-PM, 1800-2400 hours, on 29 July, 2005.

#### **WEATHER**

On Friday July 29, 2005

Temperature:

@HQ                      low 46                      high 87

@12,000 ft (est.)      low 33                      high 75

Relative Humidity

@HQ                      low 8%                      high 42%

Sunrise                5:58

Sunset                 8:21

Skies were clear for the day with light winds. No rain, thunderstorms or lightning was reported.

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## LOCATION FOUND/TOPOGRAPHY/ACCIDENT SCENE

The exact location of the fall is not known, because Christensen had apparently moved to the location where he was found after he was injured. The terrain immediately above the site where he was found is at a very high elevation (around 12,000') above tree line, and is steep and rocky. There are large areas of scree and talus, and these alternately consist of loose gravel and large boulders, as well as snow fields and steep cliff bands, which could make travel difficult. There are few designated trails above tree line, and hikers must navigate over these steep slopes utilizing line of sight and choosing their own cross-country route. During the period following Christensen's disappearance on the 29<sup>th</sup> and his body being found on the 6<sup>th</sup>, several heavy rain storms moved through the area, effectively eradicating any obvious evidence indicative of the exact location of the accident or route of travel. His uniform baseball cap and possibly his sunglasses were not located.

Christensen's body was recovered at the following GPS coordinates:

North 40 degrees, 26 minutes, 756 seconds  
West 105 degrees, 40 minutes, 509 seconds  
11434 foot elevation

The location is just north of and slightly above the stream in the middle of the drainage between Mount Chiquita and Ypsilon Mountain, among large talus and bushes, above Chiquita Lake. Looking directly up this drainage to the west, there are a number of snow fields and snow-filled couloirs. Donner Ridge forms the north skyline. Descending directly from the summit, it is composed of steep granite, and in places requires technical climbing ability to descend; depending on the location, from 3<sup>rd</sup> class to 5<sup>th</sup> class climbing is encountered. However there are numerous breaks, including one couloir which is an obvious descent gully down to into the drainage. From the bottom of this couloir, two wide ramps, several hundred feet wide descend at an easy angle down into the drainage. The top ramp is separated from the lower ramp by intermittent cliff bands. Directly above where Ranger Christensen was found, a 20'-30' high band of cliffs separates the two ramps.

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On the north side of Mount Chiquita large cliffs, boulders, and steep walls are separated by steep, often snow-filled gullies. The obvious descent from the saddle traverses easy ground directly into the canyon, either down a snow or scree slope.

Although this unmarked route is regularly ascended and descended countless times by both park visitors and backcountry rangers, it is nonetheless rugged and dangerous. There have been many search and rescue operations on these peaks. The trail-less terrain was one of the more influencing factors in the many variables that contributed to this fall and injury.



Looking up slope (west) from the location found

**CHRISTENSEN ACCIDENT INVESTIGATION**

**Incident Overview**



**Aerial overview of location where Christensen was found**

## CHRISTENSEN ACCIDENT INVESTIGATION

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## COMMUNICATIONS

Ranger Christensen was equipped with a ROMO handheld portable radio (Bendix King), 5 watt output, which was with him when he was located. The radio appeared to have outward damage of a cosmetic nature (scrapes/scratches and a cracked display window) when it was recovered along with all other items by the Larimer County S.O. evidence collection team on behalf of the Coroner. The radio was evaluated by the Larimer County S.O. radio shop for functionality, including “transmit” and” receive” capability, battery condition and capacity, frequencies, etc. The radio was functional with all tests indicating performance within normal limits/tolerances, however the exact battery charge and hence the capability at the time of the accident is unknown for certain.

The hikers who discovered Christensen contacted the NPS utilizing their personal cell phone from that location.

On August 11, 2005, a Rocky Mountain NP ranger tested a similar NPS radio from a supine horizontal position next to the ground in the approximate location where Ranger Christensen’s radio was found. The radio both transmitted and received clearly on Channel 1 (line of sight) to ROMO Dispatch. The Twin Sisters (Mtn.) repeater is also within range for radio transmit and receive from that location.

## EMERGENCY RESPONSE

Plans were made by park staff the evening of July 29 to initiate a hasty search for Christensen, beginning at 0630 on Saturday July 30. Several hasty search teams hiked the trails and terrain above tree line across the Mummy Range (his intended route) and the drainages between Old Fall River Road and the Lawn Lake trail from Fairchild Mountain to the Lawn Lake trail head on Old Fall River Road.

The Intermountain Regional Office (Regional Chief Ranger) was notified on Saturday evening that a search was underway for Ranger Christensen. Search efforts continued on Sunday without Christensen being located and a request to activate the Type II Central Incident Management Team was made to the Intermountain Region Chief Ranger on Sunday evening. The park continued to manage the expanded search under the incident command system, with extended operational periods conducted again on Monday and Tuesday August 1<sup>st</sup> and 2<sup>nd</sup>. The Type II IMT arrived late Monday evening and transitioned throughout the day on Tuesday. Key members of the park staff continued to work with the IMT in managing the search efforts, which included the coordination of over 100 ground searchers in each operational period, several search dog teams and up

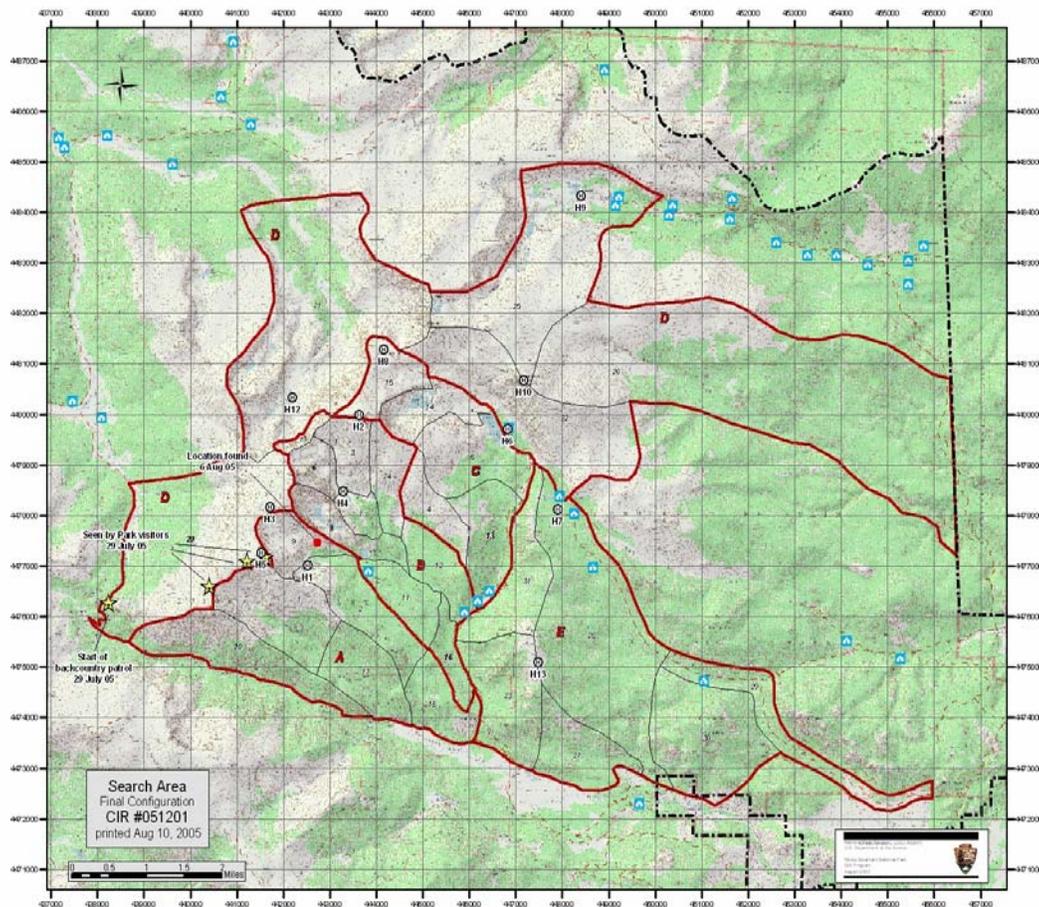
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to five helicopters at the height of the operation. Operational periods continued Wednesday through Saturday, August 6, whereupon the search was discontinued when Christensen was discovered, unresponsive, by three hikers at approximately 1300 hours.

Rescue personnel and investigators from the park and the Larimer County Sheriff's Office were flown to the scene. The scene was documented and Christensen was flown from the site at approximately 1900 hours and transferred to the Larimer County Coroner where he was officially pronounced deceased.



Map of Christensen search area

## CHRISTENSEN ACCIDENT INVESTIGATION

### Incident Timeline



1. July 27 and 28, 2005, Christensen was scheduled for his lieu days (LD), however he attended defensive tactics training on the 27<sup>th</sup> and worked 8 hours on the F1 shift for an employee deployed on a wildland fire on the 28<sup>th</sup>.
2. July 29, 2005, Christensen was scheduled for a Backcountry (B/C) patrol from 0800 hours to 1600 hours.
3. Christensen arrived at work at 0800 and did paperwork and then used the office computer to access the internet.
4. A co-worker from the Thompson River Sub-District drove Christensen to the Chapin Pass trailhead by 1100 hours. Christensen discussed his patrol route with this co-worker, originally planned for a 22 mile route to Lost Lake, but discarded this route as too long.
5. At 1105 July 29, 2005, a ROMO Trail Crew Foreman, spoke with Christensen at the Chapin Pass Trailhead.
6. At approximately 1230 hours a visiting Oklahoma City, OK couple observed Christensen at the trail junction for the high route and low route near the base of Mount Chiquita. Christensen may have told them that he intended to summit Mount Chiquita and Ypsilon Mountain. The couple also thought Christensen may have mentioned something about Lawn Lake.
7. At approximately 1330 hours another couple of visiting hikers observed Christensen just below the summit of Mount Chiquita and engaged him in a brief conversation.
8. At approximately 1430 hours another hiker observed Christensen at the saddle between Mount Chiquita and Mount Chapin.
9. No reports of visitors observing Christensen north of the summit of Mt. Chiquita, on Ypsilon Mountain or beyond, were received.

## CHRISTENSEN ACCIDENT INVESTIGATION

### Incident Timeline



10. Mid-afternoon, Christensen's photographs from his digital camera place him descending between Mount Chiquita and Ypsilon Mountain.
11. Mid-afternoon - It is believed that Christensen received his fatal injuries approximately four (4) to six (6) hours after he began his tour of duty.
12. The ROMO Law Enforcement Specialist (LES) advised that when reviewing the recorded radio transmission tapes, on July 29, 2005, at approximately 1600 hours, he heard several quick open and closed transmissions ("clicks") from an unidentified Park radio over ROMO radio frequency net. These quick transmissions were clicks with no voice transmissions. The (LES) advised that he could never be sure that these clicks were from Christensen, but they apparently coincide with the Coroner's time estimations for when the fatal injury was received by Christensen according to autopsy findings.
13. On July 29, 2005, at approximately 1800 hours, the front country late patrol (F2) shift ranger attempted a couple of times to call Christensen directly over the radio, but inadvertently used the wrong radio call sign of 234 instead of 233. No response was received using call sign 234.
14. The Coroner, after postmortem examination, estimates that Christensen could have been in an unconscious state two (2) to three (3) hours sometime after he received the fatal injury. Death is believed to have occurred between 1800 and 2400 hours.
15. On July 29, 2005, at approximately 2300 hours, when returning to the ROC at the end of their shifts, two fellow rangers on duty observed Christensen's vehicle parked at the Ranger Operations Center (ROC) and then checked his residence. Supervisory personnel were notified that evening that Christensen was missing and the decision was made to begin search and rescue operations starting at first light the following day.
16. July 29, 2005, 2300 hours, Ranger 232, working the F2 shift calls ROMO dispatch to ask "Where is 233?"
17. 2305 hours, Ranger 232 attempts to contact Christensen at home by cell phone.

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18. 2356 hours, ROMO Dispatch attempted to call 233 over all channels with no response.
19. Sometime after 2305, Rangers check the Lawn Lake Trailhead.
20. Saturday, July 30, 2005, 0630 hours. - Plans were made to initiate a hasty search for Christensen, Several hasty search teams hiked the trails and terrain above tree line across the Mummy Range (intended route) and the drainages between Old Fall River Road and the Lawn Lake trail from Fairchild Mountain to the Lawn Lake trail head on Old Fall River Road.
21. Saturday evening - The Intermountain Regional Office (Regional Chief Ranger) was notified that a search was underway for Ranger Christensen. Search efforts continued on Sunday without Christensen being located.
22. Sunday evening - A request to activate the Type II Central Incident Management Team was made to the IMR Chief Ranger.
23. Late Monday evening - The Type II IMT arrived and transitioned throughout the day on Tuesday.
24. Monday and Tuesday, August 1 and 2, 2005. The park continued to manage the expanded search under the incident command system, with extended operational periods conducted.
25. August 3, 4, 5, 6, 2005. The Type II Team manages the search effort over a 26 square mile area. Key members of the park staff continued to work with the IMT in managing the search efforts, which included the coordination of over

## CHRISTENSEN ACCIDENT INVESTIGATION

### Incident Timeline

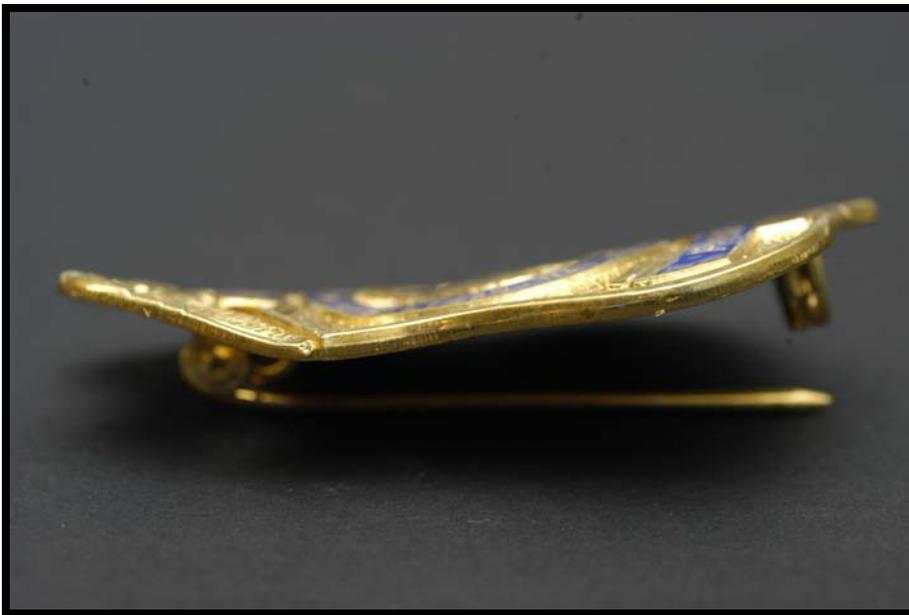


100 ground searchers in each operational period, several search dog teams and up to five helicopters at the height of the operation.

26. Saturday, August 6, 1300 hours, Christensen was discovered, unresponsive, by three hikers.

27. The search is suspended.

28. The scene was documented and Christensen was flown from the site at approximately 1900 hours and transferred to the Larimer County Coroner where he was officially pronounced deceased.



Ranger Jeff Christensen's uniform badge, damaged during the accident

**CHRISTENSEN ACCIDENT INVESTIGATION**

**Investigation**



On Saturday, August 6, the Associate Regional Director for Operations, Intermountain Region, contacted the Associate Regional Director for Operations, Alaska Region, to begin the formation of a Serious Accident Investigation Team (SAIT). Both are trained Team Leaders for a SAIT. Shortly thereafter, Ranger Christensen was found, and a team was activated, consisting of four members and a team liaison:

Ralph Tingey, Team Leader  
Clyde Yee, Chief Investigator  
Louis Rowe, Investigation Advisor/Safety Manager  
Jennifer Sahmel, Investigation Advisor/Industrial Hygienist  
Kevin FitzGerald, Management Liaison, Intermountain Region

Additional Support was provided by:

Superintendent, Rocky Mountain National Park  
Deputy Superintendent, Rocky Mountain National Park  
Associate Director Visitor and Resource Protection, Office of the Director  
Associate Regional Director of Operations, Intermountain Region  
Chief Ranger, Rocky Mountain National Park  
Law Enforcement Specialist, Rocky Mountain National Park  
Law Enforcement Specialist, Intermountain Region  
Telecommunications Specialist, Rocky Mountain National Park  
Management Specialist, Rocky Mountain National Park  
Supervisory Park Ranger, Type II Operations Section Chief, Central IMT  
East District Ranger, Rocky Mountain National Park  
Thompson River Sub-District Ranger, Rocky Mountain NP  
North Fork Area Ranger, Rocky Mountain National Park  
Seasonal Law Enforcement Ranger, Thompson River Sub-District, Rocky Mountain National Park  
Seasonal Law Enforcement Ranger, Thompson River Sub-District, Rocky Mountain National Park  
Seasonal Law Enforcement Ranger, Thompson River Sub-District, Rocky Mountain National Park  
Fall River Area Ranger, Rocky Mountain National Park  
Seasonal Law Enforcement Ranger, Fall River Sub-District, Rocky Mountain National Park

## CHRISTENSEN ACCIDENT INVESTIGATION

### Investigation



Seasonal Law Enforcement Ranger, Fall River Sub-District, Rocky Mountain National Park  
Seasonal Law Enforcement Ranger, St. Vrain Sub-District, Rocky Mountain National Park  
North Fork Intern, Volunteer-In-the-Park (VIP), Fall River Sub-District, Rocky Mountain National Park  
Other employees and support staff at Rocky Mountain National Park  
Safety and Health Officer, Colorado Region 8, OSHA, Denver  
Public Affairs Specialist, Intermountain Regional Office  
Apollo Associated Services, Ltd (Root Cause Analysis Facilitator).

The team was given a Delegation of Authority to conduct the investigation and determine the direct and indirect causes of the accident so that similar accidents might possibly be prevented in the future. The following reports were required: a 24-Hour Report, a 72-Hour Report, and a Final Report within 30 days.

### **NARRATIVE OF TEAM'S ACTIONS**

#### Saturday, August 6

Shortly before Jeff Christensen was located, the Chief of Risk Management for the National Park Service, and the Associate Regional Director for the Intermountain Region, began discussing the need to prepare for a Serious Accident Investigation Team to look into the Christensen incident. The Assoc. Regional Director, IMR began assembling a Serious Accident Investigation Team. Ralph Tingey, Associate Regional Director for Operations, Alaska Region was selected as Team Leader. Clyde Yee, Special Agent in the Intermountain Regional Office was selected as Lead Investigator. Louis Rowe, CSP, CHMM, Deputy Chief of Risk Management in the Washington Office, and Jennifer Sahmel, CIH, CSP, Occupational Health Manager, Intermountain Region were selected as investigators and risk management advisors on the team. Kevin FitzGerald, Chief Ranger for the Intermountain Region was selected as the liaison for the team to interface with park management and the Intermountain Regional Office.

#### Sunday, August 7

Team members departed and arrived in Rocky Mountain National Park. OSHA had been notified by WASO Risk Management of the employee fatality, and OSHA was asked to

## CHRISTENSEN ACCIDENT INVESTIGATION

### Investigation



send a Compliance Officer who was sensitive to grief and other strong emotions Christensen's coworkers and friends might be experiencing.

#### Monday, August 8

The team members assembled at Park Headquarters with the Chief Ranger and Deputy Superintendent, Rocky Mountain NP, the Associate Director for Visitor and Resource Protection, and other key staff. The OSHA Safety and Health Officer, Colorado Region 8, from the Denver Office met with the SAIT members and he agreed to conduct simultaneous employee interviews when possible to lessen the impact on park staff because of duplicate investigations. The OSHA representative attended most of the subsequent interviews with the team and conducted independent interviews. Briefings commenced on the recovery operation and a plan was made to conduct interviews of witnesses, supervisors, and fellow employees. The team interviewed the Central IMT Operations Chief and received an overview of the search effort. The Law Enforcement Specialist at Rocky Mountain National Park, and the Intermountain Region Law Enforcement Specialist had begun an accident scene investigation. They explained the current findings of their investigation which set the stage for much of the team's later efforts from the initial information. The team produced the "24-Hour Report."

#### Tuesday, August 9

The team interviewed the Chief Ranger at Rocky Mountain National Park who described the ranger division, supervisory chain of authority and park policies. The new East District Ranger was interviewed, as was the Thompson River Sub-District Ranger. The park radio technician described radio procedures, coverage, and Ranger Christensen's radio. Due to the circumstances that virtually the entire park staff had been working around the clock since July 30, the fatal accident was un-witnessed, CISM debriefings with park staff were ongoing and the memorial service and other events needed be coordinated, the team decided to conduct additional interviews with those coworkers closest to Ranger Christensen the following week.

#### Wednesday, August 10

Memorial service conducted. Team member Rowe drove to the Chapin Trailhead and walked the terrain above the tree line, but did not go to site where Christensen was found. The team met in afternoon to discuss interviews and other SAIT follow-on actions.

**CHRISTENSEN ACCIDENT INVESTIGATION**

**Investigation**



Thursday, August 11

Team Leader Tingey accompanied several supervisory park rangers on a patrol to retrace Christensen's route to the accident site. The patrol went from Chapin Pass Trailhead up past Mount Chapin to the summit of Mount Chiquita, down the east slopes to Chapin Lake, thence northeast to the accident site. The rest of the team returned to their duty stations.

Wednesday, August 17

Team members Yee and Sahmel traveled to Rocky Mountain National Park to conduct in-person interviews at McLaren Hall. Tingey and Rowe participated by phone. Interviews were conducted with several additional co-workers of Jeff Christensen.

Thursday, August 18

Team members Yee, Sahmel and Rowe conducted interviews at Rocky Mountain National Park with two additional co-workers.

Wednesday, August, 24

Jennifer Sahmel contracted the services of Apollo Associated Services to facilitate a Root Cause Analysis of the accident. Louis Rowe procured specialized software to document root cause charts. The team decided to meet September 7-8 in Denver.

Tuesday, August 30

An Intermountain Region employee is assigned to the team as editor of the report document.

Wednesday, August 31

Team Members Yee, Rowe, and Sahmel interviewed a co-worker.

Tuesday, September 6

Clyde Yee interviewed another co-worker.

Wednesday and Thursday, September 7 and 8

The team convened at the Intermountain Regional Office in Denver to work through a Root Cause Analysis with a representative of Apollo Associated Services, Ltd. The team spent two days discussing and charting all causes and contributing factors of the

CHRISTENSEN ACCIDENT INVESTIGATION

Investigation



accident in an attempt to discover underlying causes which could lead to recommendations to the park for future prevention of such accidents.

From August 8 through September 16, 2005, numerous documents relating to this investigation were provided by the staff of Rocky Mountain National Park and reviewed.

## CHRISTENSEN ACCIDENT INVESTIGATION

### Findings



This section presents the Christensen Investigation Team’s findings. The Investigation Team utilized an established process for determining possible “root causes” for this accident with the assistance of the Apollo Associated Services, Ltd. Root cause analysis is a process by which the most rudimentary elements that contributed to the accident are identified. This analysis is utilized throughout the risk management community as a means to identify root causes and recommend mitigation efforts. These findings are supported by interviews of co-workers, supervisors, park investigators, and witnesses; physical evidence, photographs, and the autopsy report; radio logs, park operating procedures, and training schedules; and technical and subject matter experts. The final report and all electronic data are on file at the Risk Management Office of the National Park Service in Washington, D.C. All original investigation documents are on file at the Rocky Mountain National Park headquarters.

#### **DIRECT CAUSE**

The cause of the fatality was determined to be a head injury and insufficient medical treatment. Christensen suffered a direct blow to his head causing a crushing-type fracture to the left temporal area of his skull which caused a subdural hematoma.

Possible causes of the head injury included: (1) striking head on a rock or (2) falling rock and (3) no head protection.

Possible causes of insufficient medical treatment included: (1) the remote location, (2) the employee was alone, (3) there was no documented plan or route for the backcountry patrol, (4) the employee deviated from the informal route plan, (5) the employee was not required to report the deviation, (6) the injury was not reported, and (7) the injury wasn't known by the park.

#### **POSSIBLE ROOT CAUSES IDENTIFIED BY THE SAIT:**

##### **Backcountry Patrol Procedures**

- Ranger Christensen was not required to submit a written or documented route or patrol plan prior to his patrol, although he did discuss possible routes while being transported to the trailhead. Some rangers who were interviewed at Rocky Mountain NP indicated that they do regularly submit route plans to their supervisor or to dispatch prior to backcountry patrols. The park does not have any formal written

## CHRISTENSEN ACCIDENT INVESTIGATION

### Findings



procedures in place that require backcountry rangers to submit a route or patrol plan, although this practice is reportedly discussed during annual backcountry training.

- Ranger Christensen was not required to report any deviations from his proposed route of travel, and did not report his decision to head down the Mount Chiquita-Ypsilon Mountain drainage. Some of the rangers interviewed indicated that they do regularly report deviations from their planned route to dispatch. The park does not have any formal written procedures in place that require reporting of deviations in route or patrol plans, although this practice is reportedly discussed during annual backcountry training.
- The park has a number of backcountry operational practices that are required informally of rangers on patrols. There are written Ranger Operating Procedures specific to backcountry patrols at the park that have not been widely distributed in recent years. These documents are referenced during backcountry training. The park does have existing Ranger Operating Procedures that are extremely detailed for front country operations/patrols.
- The potential dangers of a late start on certain backcountry patrols in the park, especially those above tree line, were well known and understood by all of the employees interviewed. However, Ranger Christensen started his patrol at a time (11:30) that most consider to be quite late on July 29 because of other priorities such as paperwork. Weather observations on July 29 are reported on page 16. Park supervisors do not currently appear to require prioritization of backcountry patrol starts and timing over other job tasks.
- Many of the rangers interviewed indicated that they verbally share trail and route information with fellow rangers and other employees. For some specific trails and areas, the park provides detailed written route information through the backcountry office, brochures and books for sale to the public. However, the park has no formal written procedures in place for backcountry rangers to familiarize themselves with new patrol routes, such as detailed route logs, photos or maps.

## CHRISTENSEN ACCIDENT INVESTIGATION

### Findings



- The practice of solo ranger patrols is prevalent in almost all national parks. In certain specific situations this may place rangers at increased risk in the event of an injury. However, because of the severity of Ranger Christensen's injury, it is not known if a second individual traveling with him would have been able to influence the outcome. The rangers interviewed indicated that new or seasonal rangers sometimes conduct some patrols with a more experienced ranger initially, and that rangers are not required to conduct solo backcountry patrols in areas or over terrain where they do not feel comfortable doing so alone.

### **Backcountry Communication Procedures**

- With the exception of the requirement to check in and check out by radio at the beginning and end of shifts, the park does not have a written radio communications plan in place for communications with dispatch that are specifically required during backcountry patrols (see the Ranger Operating Procedures, Appendix c-1-a, which addresses communications status checks).
- Although radio transmission capability appeared to be excellent in the area where Ranger Christensen was found, the park does not have a written protocol for backup communications planning when rangers are traveling in areas with known radio dead zones. Many rangers who were interviewed indicated they had a working knowledge of radio dead zones and informally shared information on these locations with each other. Additionally, the park Radio Technician indicated that it would be easy to produce a map which identifies good radio coverage as well as problem areas within the park. He also indicated that radio communications capabilities within the park have been steadily improving. The park does not have a formal method to report radio dead zones nor was it apparent that formal training on radio dead zones is conducted with new employees.



## **Injury Reporting Requirements**

- The 2005 Seasonal Employee and Volunteer Handbook Requirements on page 45 states a requirement for all employees and volunteers to immediately report injuries that occur while working. Ranger Christensen did not report his injury, but it is unknown if this was by choice. Most rangers indicated during interviews that the rule requiring the immediate reporting of injuries at the time of the occurrence is not enforced.

## **Backcountry Equipment Procedures**

- Ranger Christensen was carrying a minimum amount of equipment on July 29, and according to ranger interviews, he was not required to carry any additional specific equipment while on patrol. The park has written requirements and equipment lists for specific equipment that must be taken on backcountry patrols, including the “10 essentials” and additional equipment for multiple-day patrols. This includes information provided to visitors wishing to explore the backcountry who are given specific advice on recommended items to carry via park brochures and the website. While most rangers interviewed indicated that they would have been carrying more equipment, park supervisors do not appear to check or enforce the carrying of specific equipment for backcountry patrols. At the beginning of each season, the park does supply each ranger with a backpack of equipment routinely needed for backcountry patrols. The equipment in the pack must be documented on an equipment checkout log and turned back in to the immediate supervisor at the end of the season. According to the rangers interviewed, the park’s annual search and rescue (SAR) training discusses the need for backcountry survival equipment. The SAR training also discusses the need for specific equipment to assist in the event of injuries, whether to an employee or a member of the public.

## **Backcountry and SAR Training**

- While the park conducts SAR and backcountry patrol training each season (in addition to many other types of training for seasonal and permanent park rangers), it appears that these training sessions are not standardized with a detailed curriculum. However, the training is provided each year according to the same summary agenda and is generally felt by those interviewed to be good training, conducted by



experienced and capable instructors. Documented consistency in training would allow supervisors to know, for certain, that rangers are taught specific concepts and procedures necessary for safe and effective work in the backcountry. This is especially important when considering turnover in both seasonal and supervisory staff.

- Because of the lack of a detailed curriculum, backcountry patrol and seasonal LE ranger training curriculum may vary according to the trainer teaching the course, and the park cannot be assured that under the current system that all key topics are covered in the same manner every year.

#### **Park Uniform Serviceability Requirements**

- Park supervisors do not appear to routinely evaluate the condition and serviceability of uniform components worn by rangers, and perhaps particularly for rangers on backcountry patrol. The boots that Ranger Christensen wore on July 29 were especially worn on the soles, and many members of the SAIT felt that they might no longer meet the minimum serviceability requirements. Both DO-43 and RM 43 contain written minimum standards for the serviceability of uniform components that employees are expected to adhere to as a condition of employment and supervisors are expected to enforce.
- While written minimum standards for the serviceability of uniform components exist, the NPS seasonal employee uniform allowance may not be sufficient to purchase all of uniform components needed for both front and backcountry duties.

#### **Hazard Assessment and Personal Protective Equipment Needs**

- On certain surfaces such as wet rock, scree, or wet grass in certain environments, such as above tree line, the boot soles of the uniform issue boots may be too hard and therefore slippery, especially when they are excessively worn. Many of the rangers interviewed indicated that they currently purchase their own footwear to use in certain backcountry situations for comfort and safety.
- At the present time, the components of the NPS uniform are not considered personal protective equipment by purchasing authorities (according to DO-43, paragraph 2 and RM 43, Section III).

## CHRISTENSEN ACCIDENT INVESTIGATION

### Findings



- The rangers interviewed indicated that helmets are available to all employees who request them, and that there are many specific situations in which they will wear helmets. Examples include ice climbing, technical climbing, and high angle rescue. However, there are no formal procedures or guidelines in place outlining when helmets should be used by employees.



**CHRISTENSEN ACCIDENT INVESTIGATION**

**Appendix A**

**DELEGATION**

Y14 (9560)

August 7, 2005

Memorandum

To: Ralph Tingey, Associate Regional Director, Operations, Alaska Region

From: Associate Regional Director, Operations, Intermountain Region

Subject: Delegation of Authority – Serious Accident Investigation

This memorandum formalizes your appointment as Team Leader for the Serious Accident Investigation Team (SAIT) assigned to the fatal accident involving Park Ranger Jeff Christensen that occurred near Mt. Ypsilon in Rocky Mountain National Park on or about July 29, 2005. Your duties include but are not limited to:

1. Organizing, managing and conducting the accident investigation in accordance with Departmental Manual 485 Chapter 7 and National Park Service Reference Manual 50.
2. Providing for in-briefings and out-briefings with affected personnel and agency officials including the Park Superintendent.
3. Coordinating information exchange between team members, local law enforcement, the coroner's office and other entities involved with investigating the serious accident.
4. Maintaining liaison with the affected park and regional office.
5. Approving requests and allocating funding for resources to assist with the investigation.
6. Requesting technical, logistical or other support as required to conduct the investigation.
7. Providing briefings to myself and others. Initially, briefings will be conducted daily, however, the frequency may be reduced at a later time.
8. Coordinating the scheduling of interviews and other appropriate activities with other line of duty death entities such as critical incident stress management teams, funeral/memorial arrangements, etc.
9. Providing the following formal briefings/reports to me within the identified time frames:



**CHRISTENSEN ACCIDENT INVESTIGATION**

**Appendix A**

- a. Preliminary Report (24 hours)
  - b. Expanded Report (72 hours)
  - c. Factual Report (30 days)
10. Briefing the Board of Review (BOR) in regards to the investigation and findings.
  11. Conducting additional investigations and performing additional follow-up actions as requested by the BOR.

Requests for time extensions for report submittals must be made through me. Requests should be made in writing, include the rationale for the extension and be submitted at least five days prior to the due date. Final approval of all time extensions will be made by the NPS DASHO.

The Factual Report will be prepared in accordance with Departmental Manual 485 Chapter 7 and National Park Service Reference Manual 50B Chapter 5. The Report will be delivered to the Board of Review chairperson. Once the Factual Report is accepted by the delegating official, no changes will be made. However, addendums to the report may be necessary as a result of the BOR and any subsequent follow-up investigations, and will be reflected in the BOR Management Report. All reports (other than the Preliminary and Expanded Reports) will be considered draft until they are accepted by the NPS DASHO.

You will be provided a charge code to pay for all travel and associated costs.

cc: Associate Director, Visitor and Resource Protection (DASHO)  
Chief, Risk Management, WASO  
Park Superintendent, Rocky Mountain National Park



## CHRISTENSEN ACCIDENT INVESTIGATION

### Appendix B

#### TEAM BIOS

Clyde Yee  
Special Agent  
Office of Criminal Investigations, National Park Service  
Intermountain Regional Office – Denver

Clyde has twenty-five years of Federal law enforcement experience with two separate agencies. Clyde began his career in Northern Virginia and the Washington, D.C. Metropolitan Area as a police officer and criminal investigator before transferring to the National Park Service as a Law Enforcement Park Ranger. Clyde worked as a Park Ranger on the Natchez Trace Parkway in Ridgeland, Mississippi; Colonial NHP, in Yorktown, Virginia; Fredericksburg-Spotsylvania NMP, in Fredericksburg, Virginia; Shenandoah NP, in Luray, Virginia. Clyde also worked as a Detective at Colonial NHP and as a Special Agent at Shenandoah NP before transferring to the Denver Office as a Special Agent for the Intermountain Region where he is currently assigned. Clyde has conducted both front country and backcountry patrols, was an Emergency Medical Technician, Wildland Fire Fighter, both a team member and squad leader for a regional Special Events Team, and is an instructor in Firearms, Defensive Tactics, Impact Weapons and an Armorer.

Ralph Tingey  
Associate Regional Director, Operations  
Alaska Region – Anchorage

Ralph Tingey is the Associate Regional Director for Resources and Operations in the Alaska Region of the National Park Service. He joined the Service in 1965 and spent seven summers as a seasonal climbing ranger in Grand Teton National Park. In the 1980's he worked full time in the Tetons as the Gros Ventre Sub-District Ranger and later as the Jenny Lake Sub-District Ranger. Mr. Tingey transferred from Grand Teton to Denali National Park, Alaska in 1981, where he served as management assistant. Ralph has served as Park Superintendent of Cape Krusenstern N.M., Noatak National Preserve, and Kobuk Valley National Park, and of Lake Clark National Park, Alaska. He is currently on the board of directors of the American Alpine Club.



## CHRISTENSEN ACCIDENT INVESTIGATION

### Appendix B

Jennifer Sahmel, CIH, CSP  
Intermountain Regional Office – Denver

Jennifer currently works in the National Park Service's Intermountain Region as the Regional Safety and Health Manager. She guides regional policy and provides safety and health technical expertise for 89 regional park units and 5,300 employees and volunteers. Prior to the National Park Service she worked in the EPA's Office of Pollution Prevention and Toxics (OPPT) in their Chemical Engineering Branch providing exposure assessment expertise for numerous national programs and regulations. Prior to EPA, she worked at NASA's Goddard Space Flight Center and for FMC with their Agricultural Products Group. She served as Chair of the AIHA Exposure Assessment Strategies Committee's Dermal Subcommittee 2000-2005 and is currently the Vice Chair of the full committee. She is a Certified Industrial Hygienist and a Certified Safety Professional, and received a Master of Public Health degree in Environmental Health and Industrial Hygiene from the University of California at Berkeley in May of 1996.

Louis Rowe, CSP, MBA  
Deputy Director of Risk Management Division  
Directorate of Resource and Visitor Protection  
National Park Service.

Mr. Rowe came from Yosemite National Park, where, he was the Safety and Occupational Health Manager. Previously, Mr. Rowe worked in the National headquarters of the Occupational Safety and Health Administration. Before working for OSHA, Mr. Rowe spent six years in Hawaii with the Department of Defense as the Deputy Director for Safety at Marine Corps Bases. From 1994-1998, Mr. Rowe was an adjunct instructor at the University of Hawaii, and taught safety and health courses in the University's outreach program, and as an adjunct instructor at Hawaii Pacific University, where he taught organizational development and business courses. During this period of time, he also consulted for several large companies on Oahu. He is a professional member of the American Society of Safety Engineers, the Academy of Certified Hazardous Material Managers, and American Industrial Hygiene Association.



**CHRISTENSEN ACCIDENT INVESTIGATION**

**Appendix B**

Kevin FitzGerald  
Chief Ranger, Intermountain Region  
National Park Service

Kevin FitzGerald has been a park ranger with the National Park Service since 1978, and is currently the Chief Ranger for the Intermountain Region in Lakewood Colorado. He has current oversight of regional programs relating to law enforcement, emergency services (SAR, EMS), structural fire, wildland fire and aviation, special park uses, health and fitness and mineral oil and gas. Previous assignments with the NPS include: Cape Cod National Seashore (Chief Ranger), Massachusetts; Chesapeake and Ohio Canal National Historic Park (Chief, Branch of Visitor and Resource Protection), MD/WVA/DC; Everglades National Park (District Ranger), Florida; Great Smoky Mountains National Park (Asst. Sub-District Ranger), NC/TN; and Blue Ridge Parkway (Park Ranger), NC.. Kevin also served as the acting Chief Ranger for the National Park Service from April to August, 2002. Kevin has supervised and/or participated in a wide variety of protection programs including front and backcountry patrol and investigations, structural and wildland fire, emergency medical services (EMT), open and flat water boat and airboat operations, technical search and rescue and ocean lifeguard. He has instructed on a wide variety of program management, law enforcement and emergency services subjects throughout his career.

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