

# Avalanche Fatality at Crystal Mountain Ski Area, WA, January 16, 2000

**Location of incident**—Snag Chutes (Exterminator), Crystal Mountain Ski Area (upper part of resort was closed at the time of the accident)

**Number in party**—2; 1 caught, totally buried and killed. Found by search dogs and probing after approximately 2+ hours. Victim was buried with head downslope, with his head about 3.5 feet beneath the snow surface and the feet about two feet down.

**Type of activity**—ski

**Elevation**—~6200 ft

**Aspect**—E-NE

**Slope angle**—38 degrees

**Preliminary Avalanche classification**—HS-AS-R3

**Other avalanche information:** 1-4 ft hard slab, approximately 75-100 feet width and 1000 ft vertical fall with numerous treed areas in the path.

## Preliminary Summary and Detailed Reports--

News media incident report courtesy Crystal Mountain Resort:

*Accident Summary--At 1:30 PM on Sunday, January 16, 2000, the Crystal Mountain Ski Patrol was notified that an avalanche occurred and that two skiers had been sighted in the area just prior to the slide. Patrol responded with a search team just to the right of an area known as Snag Chutes. This area was controlled for avalanches in the morning. It is located off a lift that was closed the entire day due to high winds. The two skiers had climbed about 1000 vertical feet up to ski the steep powder run. The first skier witnessed his friend getting caught in the avalanche. He immediately began searching for his friend.*

*At approximately 1:40 PM the initial search team arrived at the site. They noticed the fracture line of a large avalanche and conducted a probe and beacon search. Over the next 30 minutes, 40 additional rescue personnel and three avalanche dogs began searching the large site. At 3:25 PM, a Crystal Mountain avalanche dog located the missing skier. The skier was not wearing an avalanche beacon.*

*The search and rescue team recovered the body and began advanced life support. A Ski Patrol physician pronounced the skier dead at the scene. Trauma is a suspected cause of death but is not confirmed at this time.*

## Detailed Accident Report--Preliminary

Report prepared by Paul Baugher, Professional Ski Patrol Director and Mark Moore, NWAC

Weather conditions at Crystal Mountain on Sunday morning, January 16, 2000, could best be described as horrible on the upper mountain and very stormy and windy on the lower mountain. In fact, high winds had prevented opening of all upper mountain lifts to the public, including the Rainier Express Chair, Green Valley and High Campbell. Only High Campbell had been run very early in the morning for avalanche control; other area avalanche control had been conducted by snow cat. However weather conditions had deteriorated significantly by the expected time of ski area opening and no upper lifts were opened. At approximately noon, the wind holds for all upper lifts were continuing and a ski patroller stationed near the top of Chair 1 (Miner's Basin Lift) noticed several skiers climbing up the Iceberg Gulch run to access higher terrain which was normally serviced by the closed Rainier Express Chair. The patroller yelled at the party, warning of avalanche danger and trying to turn the party around, but the party of two failed to descend. Later witness interviews indicated that both members were experienced skiers and back-country skiers. One member of the party had also been a ski patroller at an eastern US ski area and both members

of the party owned avalanche beacons but were not wearing them at the time. Upon reaching the knob summit above the Snag Chutes (also known as Exterminator), the skiers apparently discussed the avalanche danger and decided to descend the slope one at a time.

The survivor skied a short way down the northern flank of what was soon to become the slide path and stopped after losing sight of his partner. Trying to re-establish contact with his partner, he started to ski downhill again when he saw his partner come by him caught in a slide. From the survivor's description and reconstruction of the configuration of the actual avalanche, it is probable that the victim triggered the slide which caught him, with the initial fracture releasing about 200 vertical feet above him. Following the avalanche which descended quickly downslope, the surviving party member stayed on site to search for his friend.

In the meantime, three ski area employees were sent down from mountain top due to expected continued closure of the mountain top summit house/restaurant. Due to the perceived avalanche danger, they were instructed to ski down an intermediate ski run—Lucky Shot. However, they instead skied and boarded toward Snag Chutes, and were in position to observe the avalanche from the extreme northern flank. Although they did not see anyone caught in the slide, they were aware of other skiers in the area. After the avalanche, they proceeded downhill toward the base of the ski area, rode the lift up to the midway area, thereupon informing a patroller stationed on top of the slide they had witnessed, as well as the fact that they had seen other skiers in the area. At this time, around 1:30 PM, the Patrol Director and Snow Safety Director were enroute to mountaintop via snowcat to re-evaluate the avalanche danger for further control work if the winds moderated and allowed for an afternoon opening. Upon receiving the radio report of an avalanche, two patrollers (including the Patrol Director) immediately departed for the Snag Chutes area, and requested the dispatch of additional avalanche rescue resources. Arriving at the site in poor visibility, blowing and drifting snow, and sustained high winds, they identified the fracture line and assessed remaining avalanche danger before proceeding downhill to begin an initial search. Upon skiing downhill, they encountered the surviving member of the ski party still looking for his friend.

Shortly thereafter, three avalanche dogs and approximately 40 other rescue personnel arrived on the scene and began working the large avalanche path, searching for surface clues, talking further with the eyewitness and probing likely burial sites of deposition. (It should be mentioned that at approximately this same time, another avalanche accident report was received by the Ski Patrol, with this incident apparently occurring across the valley on a slope which loads under similar wind patterns. As it turned out, this avalanche caught, injured and partially buried one skier, with the skier triggered slide running about 6-800 vertical. Further ski patrollers were dispensed to this site, with this skier brought back to the base after becoming hypothermic, alive but with a probable broken leg--more details to follow). The avalanche path and runout included many acres of potential burial locations, but the main search effort was concentrated in the deceleration zone of the avalanche within a dense band of cedar trees at about the 5200 ft level.

Meanwhile, several ski area personnel canvassed the base of the ski area to hopefully find that the potential victim had survived the avalanche and was waiting for his friend near the base. Also, during this time, the survivor was recycled to the top of the avalanche path to once again identify the last seen area, which could hopefully yield more specific information and quicken the search.

Finally, at about 3:25 PM, approximately the 8th dog alert yielded a probe strike and subsequent recovery of the victim. The victim was buried with head downslope, with his head about 3.5 feet beneath the snow surface and the feet about two feet down. There was no apparent ice mask of snow in the mouth or throat, and the victim was pulse-less. It was also readily apparent that the victim had suffered multiple blunt trauma injuries as he was carried through this heavily treed path. Life support procedures were immediately applied including airway ventilation and CPR. A ski patrol doctor subsequently pronounced the victim dead at the scene and a subsequent autopsy confirmed that blunt trauma injury was the cause of death.

Rescue efforts continued for another hour since it was unclear if anyone else had been caught. However, after finishing exhaustive search efforts with dogs and probers, and receiving no further reports of missing

recreationists in the ski area, the search and rescue effort was concluded in impending darkness at about 4:30 PM.

**Ancillary Site, Snowpack and Weather Information:**

It is estimated that the slide initially released at approximately the 6200 ft level on an east northeast facing slope, and traveled approximately 1000 vertical feet, and was classified as a HS-AS-3. Slope angles measured just above the fracture lines and on the bed surface were approximately 38 degrees. Fracture line depths ranged from less than a foot on the northern flanks of the slide up to 2-4 feet near the top and south flanks of the slide.

Increasingly strong winds were in evidence throughout the area from early morning up through the time of the incident. Mountain top winds measured near the top of the Rainier Express Chair (at about the 6800 ft level) increased from around 20-30 with gusts to 40 at 6 AM to 30-50 mph average and gusts to over 70 around mid-day. Wind gusts over 100 mph were also recorded at the breakover tower on Rainier Express around mid-day. At the top of the nearby White Pass ski area, wind gusts of over 110 mph were recorded between noon and 2 PM.

Temperatures were also rising during the morning and early afternoon, increasing from 26 deg F at 6 AM PST near the base of the ski area to 31 deg F at 1 PM PST.

In response to these weather conditions, the Northwest Weather and Avalanche Center had issued an Avalanche Warning for an increase in the avalanche danger Sunday, becoming high above 4000 feet and considerable below Sunday afternoon and evening—outside of developed ski areas and highways. Such a trend for increasing danger Sunday was also indicated in the avalanche danger forecast issued on Saturday.