

Navajo Peak Snowmobiler Accident—17 December 2003

- * **Date:** Avalanche occurred on 17 December 2003; recovery on 18 December 2003
- * **Location:** Navajo Peak to W-NW of Blewett Pass (~13 miles W-SW of Wenatchee, WA)
- * **Who:** 1 snowmobiler caught, buried and killed
- * **State:** WA
- * **Activity:** Snowmobile

Preliminary Accident Report

On the late morning of Wednesday, December 17, 2003, a group of four very experienced snowmobilers were out high marking on the southeast flanks of Navajo Peak near the Alpine Lakes Wilderness in central Washington State. This particular slope is known among the local snowmobile community as one that slides frequently. In any case, the victim was reported as riding "very well" that day, and was near the top of the slope and in the midst of making his turn back down hill when he triggered and was caught by a relatively large slab avalanche (approximately 19 inch deep fracture line by 120 ft wide) that released from the 36 degree slope. The victim turned, or was guided by the moving snow back uphill and "gunned it", attempting to ride uphill off the slab. The effort was unsuccessful and despite his proximity to the crown, the victim was carried down slope with his machine. The slide apparently initiated around the 6600 ft level, descended about 1100 vertical feet, swept the victim through a narrow terrain trap slot, and buried both rider and snow machine. At the time of the incident, the victim's three companions were watching from the bottom of the slope in a safe spot, and reported a last seen point only about 100 feet below the crown saying "there was a big cloud of snow and we couldn't see anything." When the avalanche had settled and the victim's companions could again see the snow surface there were no signs of either the sled or the victim. While the three companions all were wearing avalanche transceivers and had shovels and probes, the victim was not wearing a beacon, though it is unclear whether or not he had a shovel or probe. One of the reporting party then called 911 while the remaining members initiated a rescue and probe search. Unfortunately, initial efforts yielded no surface clues and no contact through probing. Chelan County Sheriff's Department responded and coordinated the search response. Logistical problems prevented use of a local rescue helicopter and Snohomish County was subsequently contacted to provide helicopter support with their UH-1 ship and crew. Meanwhile the victim's companions continued to probe and search though it is not clear how (organization, probe lines, etc) the search was conducted.

Figure 1. This picture shows the location of the accident, including the originally triggered slide, approximate position of the victim as the slide released, the last seen area (point), and the final location of the victim when found. Also shown is the location of the slab released by explosives to help ensure safety of the search and rescue operation.



[click to enlarge](#)

Photo courtesy Chelan County Sheriff's Department

As the organized search got underway, local mountain rescue and Ski Patrol from Mission Ridge Ski Area were mobilized and told to rendezvous at the Chelan County helipad. Although exact times remain unclear, the helicopter from Snohomish County then departed the helipad with 6 crew, one Sheriff's Deputy two Mission Ridge Patrollers and an avalanche dog. They arrived on scene later in the afternoon and worked the dog briefly. Although the dog alerted (cued) on a spot near where the victim was eventually found, darkening skies and continuing avalanche danger prevented a more thorough search of that area at that time, and the search was called off for the night before

any digging or probing could be done.

That night Chelan County Sheriff's Office developed a plan of action for the following day, and mobilized the appropriate resources and personnel. On Thursday, the 18th at 0600 a briefing was held with all officially involved personnel. Six passengers and a rescue dog in the first load left via helicopters from Chelan and Snohomish Counties shortly thereafter. Remaining resources and personnel relocated to the Valley High Fire Station on Highway 97, closer to the scene. While low ceiling at the incident site prevented immediate landing of the initial morning search crew(s), subsequent clearing allowed for the helicopter(s) to approach the scene. However, overnight friends of the buried victim had ridden into the scene and were present in the slide path. The first flight(s) had plans of controlling the moderate amount of hangfire with explosives but first had to ensure the safety of those other snowmobilers present in the avalanche area. One person was dropped off the lead ship to make contact with the group and get them to a safe location while the explosive control was accomplished. A small slab was released during control and the scene deemed safe before the first load of personnel was inserted at the scene. When load two arrived at the accident site later that morning, a probe line as started at the top of the debris and began working down while other personnel probed the debris in likely areas. A second probe line was formed at the base working up, though this was short-lived due to the necessity of moving this group off the debris to a safe area when the helicopter returned with load three. The lower probe line never reformed as load three arrived after a lengthy flight around lowering clouds. Late that afternoon a dog and its handler with probe from the Mission Ridge Ski Patrol had a strike near where the dog had alerted the previous evening. Shovels were called for and the focus of the rescue scene shifted and intensified. The victim and sled were subsequently recovered with both victim and snowmobile found about 5 feet beneath the snow surface and within about 10 feet of each other. The victim's helmet was reported as being packed with snow and there may have been trauma injuries. However, the exact cause of death is unknown at this time. After relocating the victim to the snow surface, the Snohomish County helicopter removed the victim from the scene, and all personnel and equipment returned to the valley high fire station that evening. It is unknown whether any of the group had received avalanche training.

Snow pack

Preliminary reports indicate that the slide that released was a SS-AO-4 (American avalanche classification—soft slab, artificial release by other-snowmobiler, size 4), with the fracture about ½ meter (19 inches) deep by 40 m(120 ft) wide. The slide descended on the 36-degree slope about 1100 ft vertical distance (from 6600 ft elevation to 5500 ft). From a fracture line profile done at the site, the slab apparently failed on either a very thin old surface hoar or thin faceted snow layer above a 1F hard slab, presumably the rain crust that had formed in early December

Ancillary Snowpack and Weather Information

As indicated below, the NWAC avalanche forecast for the day prior to the incident called for a significant increase in the danger, and the avalanche forecast issued on the morning of the incident (excerpt shown below) still called for considerable danger above 6000 feet along the Cascade east slopes early Wednesday, gradually decreasing during the day.

NWAC Tuesday Morning Forecast, December 16, 2003

9 AM PST Tuesday, December 16, 2003

ZONE AVALANCHE FORECASTS...

OLYMPICS... WASHINGTON CASCADES NEAR AND WEST OF THE CREST...

Locally high avalanche danger developing Tuesday on wind loaded slopes above about 4 to

5000 feet and from 3 to 4000 feet Tuesday afternoon otherwise a considerable avalanche danger is expected Tuesday. Danger gradually decreasing Tuesday night. Further decreasing avalanche danger Wednesday becoming considerable above 5000 feet and moderate below. Avalanche danger remaining considerable above about 5000 feet in the Olympics and northwest Washington Cascades Wednesday night, otherwise danger decreasing and becoming considerable above about 6000 feet and moderate below.

WASHINGTON CASCADES EAST OF THE CREST...

Slowly increasing avalanche danger Tuesday becoming considerable above 5 to 6000 feet and moderate below. Slowly decreasing danger Tuesday night through Wednesday becoming moderate below 7000 feet.

SNOWPACK SYNOPSIS....

Most areas of the Cascades received a trace to 1 inch of new snow over the past 24 hours with the exception of the Olympics and northwest Washington Cascades where Mt Baker received about 10 inches overnight and early Tuesday morning. However over most west slope areas significant recent snow has accumulated over the past three to four days. Some 2 to 4 feet of snow has accumulated along the west slope areas of the Cascades and Olympics. Significantly less recent snow has fallen along the east slopes where some 6 to 12 inches have accumulated over the past four days. Heavy wet snow or rain Saturday caused an extensive avalanche cycle and helped to mitigate the earlier avalanche danger through slide releases and settlement. In general, the current snow pack over most west slope areas consists of most recently deposited deep unconsolidated snow with wind affected higher density snow on lee slopes and open exposures. While the overall snow pack along the west slopes areas has undergone settlement of some 3 to 6 inches over the past few days, unstable slabs remain probable on many lee slopes above about 4 to 5000 feet. The greatest current danger is expected on steep open lee slopes at higher elevations, mainly north through northeast facing, especially in areas that have received the greatest recent snowfall such as the Mt Baker area. Periods of shifting winds in the lower Cascade passes may have deposited unstable slabs on a variety of aspects on slopes receiving wind-transported snow. Along the east slopes less recent snowfall is maintaining a lower danger, however shallow areas of unstable wind slabs remain probable at higher elevations, especially on north to northeast facing slopes below ridges.

TUESDAY...

Increasing rain or snow and very strong winds Tuesday at gradually rising freezing levels should lead to an increasing danger, especially in the Mt Baker area where the heaviest new snowfall is expected. A locally high danger is expected to develop on lee slopes at higher elevations, mainly north through northeast facing where triggered slide releases are probable. Below about 4000 feet, snow may change to rain or heavy wet snow late Tuesday and this should lead to a locally high danger where natural or triggered avalanches are likely. Less snow is expected along the east slopes and this should limit the increase in the danger in that area. Decreasing snow showers Tuesday night and diminishing winds should begin to cause a decreasing danger.

WEDNESDAY...

High clouds with generally light winds Wednesday should lead to a further decreasing danger as recently formed unstable layers consolidate and stabilize, specially at mid and lower elevations. Light rain or snow in the Olympics and northwest Washington Cascades late Wednesday and Wednesday night should maintain a considerable danger above about 5000 feet. Elsewhere, significant warming late Wednesday and Wednesday night should allow for further snow pack settlement and an overall decreasing danger.

NWAC Wednesday Morning Forecast, December 17,2003

 8 AM PST Wednesday, December 17, 2003

 ZONE AVALANCHE FORECASTS...

OLYMPICS...

WASHINGTON CASCADES NEAR AND WEST OF THE CREST...

Considerable avalanche danger above 5 to 6000 feet and moderate below Wednesday and gradually decreasing. Further decreasing danger Thursday becoming moderate below 7000 feet.

WASHINGTON CASCADES EAST OF THE CREST...

Considerable avalanche danger above 6000 feet and moderate below Wednesday and gradually decreasing. Further decreasing danger Thursday becoming moderate below 7000 feet.

SNOWPACK SYNOPSIS....

Most Mountain areas of the Olympics and Washington Cascades received 4 to 10 inches of new snow over the past 24 hours. The most recent snow fell with warming temperatures and very strong ridge top winds late Tuesday. This new snow was deposited over the significant amounts of some 2 to 4 feet of snow that has accumulated over the past week along the west slope areas and up to a foot over the east slopes. The heavier dense snow or wind deposited snow on lee slopes has likely built unstable wind slab or unstable stiff layers over lower density snow, especially at higher elevations where strongest winds occurred. The greatest danger is expected above about 5 to 6000 feet on open lee slopes that have received wind deposited snow, mainly north through east facing slopes. At lower elevations the warming and rain or heavy wet snow has likely helped to settle and stabilize previously deposited weak layers in the upper snow pack, either through some natural avalanches or settlement pressures of the new snow. Backcountry travelers should continue to use caution, especially in steeper terrain and on slopes suspected of having received recent wind deposited layers such as open slopes near ridges.

WEDNESDAY...

High clouds with generally light winds Wednesday should lead to a further decreasing danger as recently formed unstable layers consolidate and stabilize, especially at mid and lower elevations. Gradual warming late Wednesday and Wednesday night should allow for further snow pack settlement and an overall decreasing danger.

Report compiled by Mark Moore from several sources, including Taylor Everett (Professional Ski Patroller from Mission Ridge Ski Area who assisted with some of the SAR efforts)

Northwest Weather and Avalanche Center
 Friday, January 23, 2004