

GOLD CREEK AVALANCHE INCIDENT

January 27, 2002

Narrative provided by John Stimberis—

WSDOT Avalanche Technician, Snoqualmie Pass

Accident Narrative

On January 27, 2002, a 21-year-old Snoqualmie Pass resident was out for an evening snowshoe trip. The woman had been snowshoeing before, but did not have any prior avalanche awareness training. She and her dog, Scarlet, left in the evening to enjoy the full moon while hiking up the Gold Creek valley. Gold Creek is a steep and wide north to south oriented valley with numerous avalanche paths on the east and west faces that run to the valley floor. The five mile long valley is nearly a mile wide near the mouth, but narrows considerably towards the upper end. Typical vertical relief throughout the valley is 2500-3000 ft.

About 2.5 miles up the west side of the valley the woman entered a section of open slopes intermixed with tree patches. While crossing one of the clearings, she heard a rumble from above, which was followed by a blast of snow. She states that she was lifted up and then slammed down by the rush of snow. She tried to take a deep breath, but mostly inhaled snow. The slide carried her about 25 yards down slope and buried her in a semi prone position with her right arm about one foot under the surface, her head about two to three feet down and her feet about four to five feet under. She lay there trying to make an air space and yet conserve what air she had. After about two minutes, she heard digging sounds and then felt the claws of her dog. Her dog unburied her arm and head, and even tore through the shoulder of her jacket during the process. The woman was then able to begin freeing herself. The dog continued digging even after the woman had freed herself. The woman estimated that the debris was about 200 feet wide and up to five feet deep. Her resting position was about thirty feet from the toe of the debris. The dog, which is a Shepard/wolf/collie mix, had not had any rescue training, but should be considered a hero (see a picture of the hero below). All of us should be so lucky to have such a companion when traveling in potential avalanche terrain. A picture of the dog, Scarlet, is shown below. The woman and her dog left the valley after the incident and did not plan to return anytime soon.

Figure 1...Scarlet, the hero--"just doing my job!"



Weather and Terrain Summary

This incident occurred after nine days of snowfall in the Snoqualmie Pass area, which brought 71 inches of new snow containing 7.71 inches of water. On the 23rd through the 24th 2.22" of rain fell at the 3000' level. This was followed by 17" of snow at rapidly cooling temperatures. It is not known how the avalanche was triggered, or at what elevation it started. The path is likely an easterly aspect, and the elevation where the woman was caught is estimated at 3000 ft. The valley floor is mostly hazard free, although both flanks have numerous paths that reach the valley floor. It should also be noted that some of the openings further up the valley could be starting zones themselves. This was the second narrow escape in less than a week on Snoqualmie Pass, and equally as remarkable as the avalanche incident on January 24 at Source Lake—see this report at http://www.nwac.noaa.gov/Close_call_at_Source_Lake.htm.

Compiled by John Stimberis, Avalanche Control Technician-WSDOT, by personal interview.

Ancillary Avalanche and Snowpack Information

—Provided by Mark Moore, NWAC

It is interesting to note that the time of this incident was near the close of the first annual Washington State Avalanche Awareness Week—so proclaimed by Governor Gary Locke on the 3rd of January. As it turned out the week was a period that during which it really helped to be avalanche aware, as significantly increased danger developed during the week with avalanche warnings issued on the 24th, 25th and 26th. Several other accidents had already occurred earlier in the week—in addition to the Source Lake incident on 3/24/02 referenced above, several others occurred on the 21st near Stevens Pass—see http://www.nwac.noaa.gov/Tunnel_Ck_01_24_02.htm, and http://www.nwac.noaa.gov/Skyline_Ridge--

01-21-02.htm for details). Also numerous natural and controlled avalanches had been reported throughout the preceding week.. As described by the avalanche forecast below, general avalanche conditions had only improved slightly from previously generally high danger at all elevations the day before, and a considerable danger still existed in the vicinity of the incident when it occurred, with avalanches probable at the 4 to 5000 ft elevation.

NWAC Forecast issued on Sunday morning, 1/27/02

BACKCOUNTRY AVALANCHE FORECAST FOR THE OLYMPICS, WASHINGTON CASCADES AND MT HOOD AREA

These forecasts apply to back country avalanche terrain below 7000 feet. They do not apply to highways or operating ski areas.

Learn about Avalanches and Be Avalanche Aware!!

January 21st-27th 2002 is Washington Avalanche Awareness Week

0815 AM PST Sunday, January 27, 2002

ZONE AVALANCHE FORECASTS.....

OLYMPICS AND WASHINGTON CASCADES NEAR AND WEST OF THE CASCADE CREST...MT HOOD AREA...

High avalanche danger above 5 to 6000 feet and considerable below Sunday slowly decreasing Sunday night and Monday and becoming considerable above 5 to 6000 feet and moderate below.

EAST SLOPES WASHINGTON CASCADES....

Considerable avalanche danger above 6000 feet and moderate below slowly decreasing Sunday and becoming moderate below 7000 feet Sunday night and Monday.

SNOWPACK ANALYSIS.....

Since the significant rain events and rain crust formed in early January, the Mt Hood area, the Olympics and most areas of the Washington Cascades near and west of the crest have received from 6 to 10 feet of snow, much of it arriving during the past week. Combined with some recent strong wind transport, this resulted in significant avalanche danger last Thursday through Saturday, with several buried weak layers helping to maintain high avalanche danger below 7000 feet in the Olympics and most areas near and west of the Cascade crest. Although generally lighter new snowfall and some settlement during the past 24 hours has helped to slowly decrease the avalanche danger from the recent avalanche warning conditions, many natural and human triggered slides were reported during the past several days and further avalanches remain likely at higher elevations and probable at lower elevations. In many areas, weak shear layers lie from 12 to over 30 inches below the snow surface, and other more deeply buried weak layers exist near old early January crust that now lies from 4 to 8 feet beneath the snow surface. These weak layers consist primarily of buried surface hoar, faceted snow or lower density low wind deposited snow received during brief clearing or breaks between storms. While lowering temperatures and gradually diminishing winds during the past few days have produced a slightly more stable density profile in the upper 6 to 12 inches of the snow pack, significant concern remains for slides releasing on one or more of the more deeply buried weak layers. Although most avalanches should involve only the most recently deposited new snow received Thursday through Saturday, such slabs may

still involve from 1 to 3 feet or more of snow, and these direct action slides may trigger isolated larger climax slides reaching through a thin melt freeze or wind crust and releasing down to the old early January crust...especially in areas not experiencing recent avalanche activity. The lure of fluffy champagne surface snow, an overall decrease in showers and some partial clearing Sunday with further clearing Monday should not blind travelers from the continuing avalanche danger that lurks beneath the placid snow surface. Travelers are strongly urged to perform normal safety and stability tests of the snow pack and continue to make safe route selections. Several skiers and boarders have been very lucky during the past week of high danger and these accidents illustrate the need for always applying safe travel techniques and for continually assessing snow pack stability.

Significantly less recent snowfall has been received along the Cascade east slopes during the past week, however a similar though shallower unstable snow structure exists over the old rain crust and this is helping to maintain a considerable danger at higher elevations and a moderate danger below, with greatest danger on steeper northeast and east exposures near the Cascade crest. Recent field reports near Blewett Pass indicate that generally small amounts of recent snow exist over either faceted snow or surface hoar above the old crust, however in steeper higher elevation wind affected terrain, slightly larger wind slabs may be easily triggered by back country travelers.

SUNDAY...SUNDAY NIGHT....

Light to moderate showers in the north and moderate to occasionally heavy showers in the south Sunday morning should gradually decrease Sunday afternoon with slow clearing and much colder weather spreading southward later Sunday night and early Monday. This weather should produce little change in the danger on Sunday but should allow for a slight decrease in the danger late Sunday. However, the large amounts of recent unconsolidated snow may take several days or more to settle, especially since the expected increasingly cold snow temperatures should limit grain bonding within the snow pack, and associated strong temperature gradients may help to gradually weaken snow layers near significant density variations within the upper part of the snow pack. As a result backcountry travelers should use considerable caution in avalanche terrain and should avoid steeper open lee slopes showing no evidence of recent avalanche activity, with greatest danger on steeper northeast through southeast facing slopes above about 5000 feet.

MONDAY...MONDAY NIGHT....

Scattered light showers in the south should decrease Monday morning with a clearing trend spreading southward and mostly fair and cold weather likely in most areas Monday afternoon and night. This should allow for a further slight decrease in the avalanche danger...however continuing low temperatures should make this a very slow process. The cold air temperatures should also allow for further faceting and recrystallization of the snow pack near and above buried crusts or high density snow layers, with a rather fragile bond probably continuing between the recent heavy snowfall and the old early January crust. Finally, some surface hoar that may form both Sunday and Monday nights should be closely monitored prior to the next snowfall.
