

# Stevens Pass Avalanche Accident 2-14-14

Friday, February 14, 2014  
11:57 AM

**Notes from NWAC:** On Tuesday, Feb 11<sup>th</sup> two skiers were involved in an avalanche not far outside the Stevens Pass Ski area on Big Chief Mt on a steep NW aspect around 5000 ft. High to Considerable Avalanche Danger was forecast in the Near and Below Treeline Zones respectively. Snow stopped by Tuesday morning but the Stevens Pass weather station at Schmidt Haus, elev 3950' had reported 13 inches of new snow through 5 am Tuesday with a strong warming trend since Monday afternoon. The soft storm slab avalanche failed on faceted crystals above the old Jan melt freeze crust. Storm slabs were reported to be sensitive on Tuesday with Stevens Pass DOT triggering 1-2.5 ft slides during Tue AM control work. NWAC observer Jeff Ward filmed [this video](#) the same day in the Stevens Pass area illustrating a sensitive snowpack, the potential to remotely trigger avalanches and clean shears between the slab and weak layer interface. An important takeaway from this accident is that the pair was not far outside the ski area boundary when the slide happened. This fact underscores the difference between regularly controlled slopes with skier compaction and true backcountry conditions just around the corner from the area rope line or gates. In post accident interviews with the victims, ski patrol reported that neither victim had avalanche rescue gear with them, had checked the avalanche forecast or had formal avalanche training.

No new information has been received about the transported skier's medical conditions as of 2-14-14. Photos, crown profile and NWAC forecast and weather conditions at the time of the accident are all listed below.

## **Detailed account from Stevens Pass Ski Patroller Dan Veenhuizen:**

**Location:** Big Chief Bowl high traverse out of ski area boundary

**Summary:** One skier and one snowboarder traversed out of ski area boundary and trigger a soft slab that carried both victims through steep trees.

**Slide and rescue details:** Group accessed area via Pro Chute after riding C-9/ Double Diamond chair. Group had taken that route many times to access Out of Bounds terrain. Group consisted of father and son; father was 48 yr old male on ski gear, The son was 23 yr old male was on snowboard gear. Both traversed on the same traverse to access the boundary. At the boundary the son dropped to lower traverse and the father stayed on upper traverse at the same time and about 100 ft vertical from each other. The father triggered the slab from the upper traverse and stated he saw no other people or snow sliding down from above before slab was triggered. He felt it pop under him and started rapidly accelerating thru the trees. The son was traversing when the slide hit. Both were swept through steep trees and described hitting trees before coming to a stop.

The father came to a stop and had lost both skis and poles. At this time he yelled for his son and received no response, he yelled a second time and received a response. One of the father's skis was next to him so he grabbed it and worked to free his legs that were buried in the debris. The father moved down slope and found his son approximately 100 ft below him wrapped around a tree. He dug down and removed his snowboard and helped free him from tree.

The son remembers being swept through the trees and hitting a tree with his chin. When he stopped he was around a tree, stomach against tree, with legs on one side and head on the other. He stated he had snow packed above him and could not move. The father arrived and dug snow out from around him with the help of a bystander (witness who reported incident to C4 op). They had no shovels and used hands to dig out snow. The son's helmet was ripped off in the slide and not found in debris.

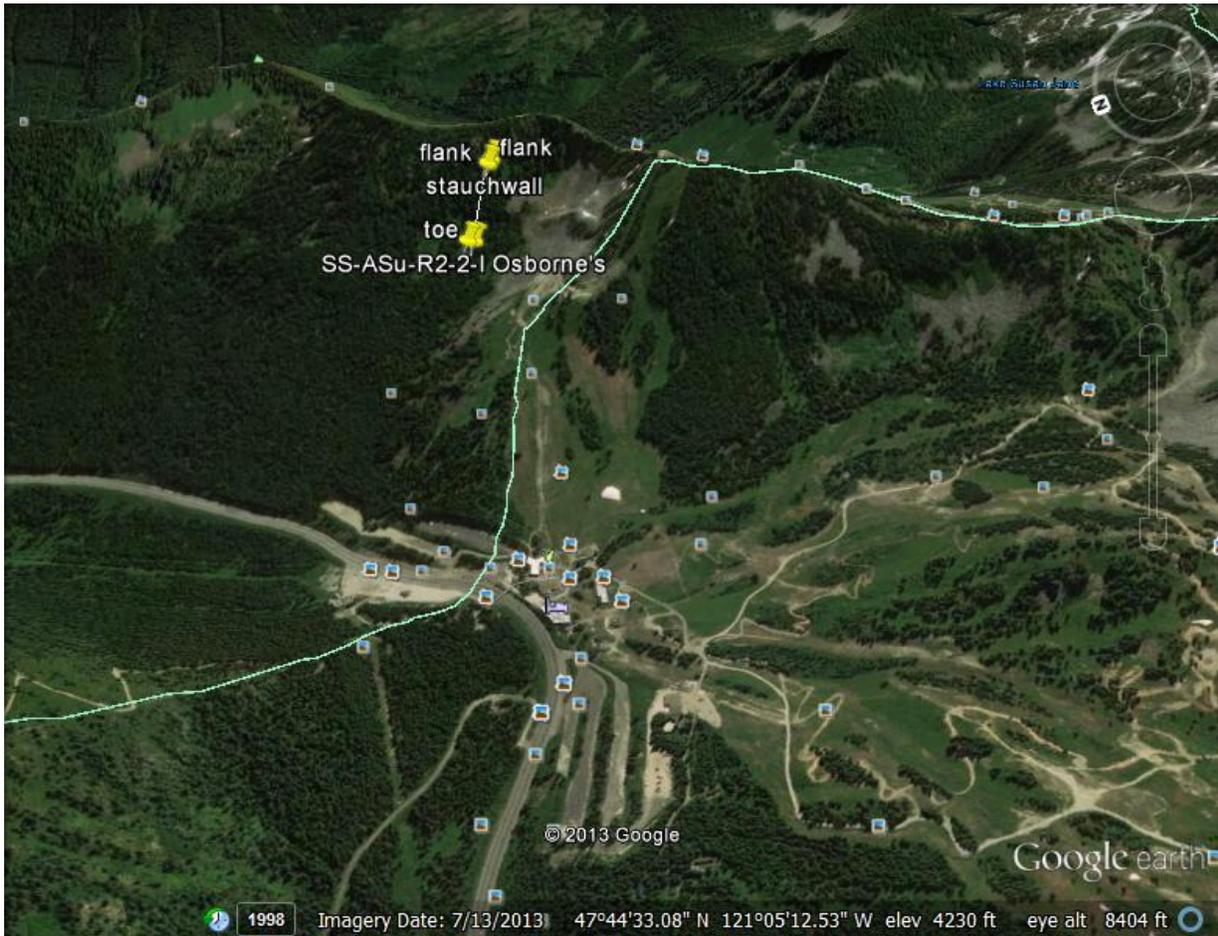
After freeing the son they moved down slope approximately 100ft then started traversing toward Big Chief Bowl. The father was using the snowboard to help pack a trail for the son to try and walk on. They made to Big Chief trails entrance where they were assisted by other skiers and friends they contacted. Patrol made contact with them at this location and provided BLS care.

While the patient care was taking place, 6 patrollers searched the slide path and debris. Adjacent runs

and access points were closed with a guard posted to ensure no one would trigger additional hangfire in the area. A Stevens Pass avalanche dog was run through the slide path and debris field first. Then 4 patrollers searched the area with transceivers, also probing likely burial spots. Another patroller followed behind doing a Recco search. No additional signals or alerts were noted, and there were no additional clues that anyone else was caught in the slide. The incident was closed at 12:26 pm.

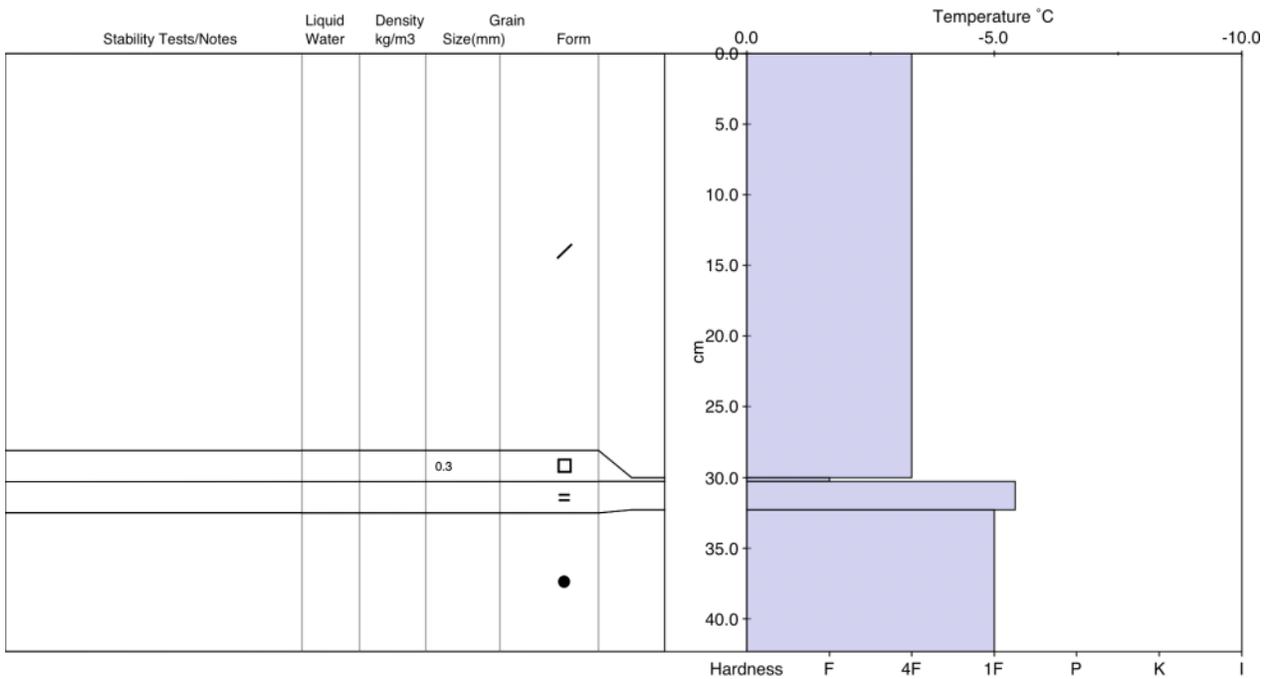
*All photos courtesy of Stevens Pass Ski Patrol*







Full Investigation  
 Observer: Dan  
 Feb 11, 2014 12:23 PM  
 Osborne's  
 Lat/Lon: 47.7434, -121.0774  
 North Central Cascades, WA  
 Elevation: 1468 m  
 Aspect: NW Angle: 43°



# Stevens Pass

**Issued: 3:21 AM Tuesday, February 11, 2014** by Garth Ferber

NWAC avalanche forecasts apply to backcountry avalanche terrain in the Olympics, Washington Cascades and Mt Hood area. These forecasts do not apply to developed ski areas, avalanche terrain affecting highways and higher terrain on the volcanic peaks above the Cascade crest level.

Forecast updated for high avalanche danger near and above treeline in the Olympics, the Cascades near and west of the crest and the Mt Hood area at 3 am Tuesday morning.

## Detailed Forecast for Tuesday:

West south west winds and light snow showers should temporarily decrease on Tuesday at lower snow levels.

The main concerns should be new storm slab on a variety of slope aspects and wind slab mainly on lee aspects from Monday and Monday night. Initial lower density snow, weak or low density snow from last week and faceted snow near crusts in the upper snowpack may continue to make these new layers reactive on Tuesday. Slabs may also be more reactive where they slide on the January crust or scoured surfaces.

Travel in avalanche terrain is not recommended above tree-line Tuesday. If you travel near tree-line or below tree-line watch for signs of wind transport and loading on lee slopes. Shooting cracks are always a sign of instability. Even a small wind or storm slab in the wrong terrain such as above cliffs or above steep slopes can have unintended consequences.

Limited snow at the lowest elevations will limit the avalanche danger especially on solar aspects. The mid and base pack should still consist of mostly stable crust and melt form layers from periods of warm weather earlier this winter.

The next front should begin to arrive Tuesday afternoon and evening. The avalanche danger should significantly increase Tuesday night.

# Snowpack Analysis:

Very cold temperatures last week produced strong temperature gradients in the upper snowpack. This produced a variety of weak surface snow conditions including surface hoar, near surface faceting and preserved the generally light amounts of low density snow that fell last week. Faceting near crusts has also been seen in the upper snowpack. These layers should cause the avalanche danger to significantly increase this week as vigorous fronts move across the Northwest and load these layers.

Late last week a period of strong east winds transported surface snow and built wind slabs mainly but not exclusively on lee NW to SW facing slopes. Several skier triggered wind slab avalanches were reported last week including in the Stevens Pass Ski Area, Alpentel and in the back country in the Tatoosh at Mt Rainier.

Dallas Glass was in the Tatoosh Range on 7 February and produced this video regarding the windslab over lower density snow: <http://www.youtube.com/watch?v=NfGHCXM97kl> (<http://www.youtube.com/watch?v=NfGHCXM97kl>)

Due to less wind Jeff Hambelton did not find a slab at his particular location at Mt Baker on 6 February. But he did find that low density surface upper snow was easily scraped off a slick crust: [http://www.youtube.com/watch?v=N\\_uMXEKsyvM](http://www.youtube.com/watch?v=N_uMXEKsyvM) ([http://www.youtube.com/watch?v=N\\_uMXEKsyvM](http://www.youtube.com/watch?v=N_uMXEKsyvM))

Vigorous frontal systems will be moving across the Northwest pretty much every day this week. The first front is moving across the area Monday causing increasing west southwest winds, moderate to heavy snow, and a warming trend. This flow will erode the cold air mass that has been over the area and cause a shift to west winds in the Cascade passes. The warming trend will generally build upside down heavier snow over initial lower density snow and low density snow from last week. A few inches at lower elevations to a foot or more of snow at higher elevations should be seen by Tuesday morning.

Already today the Mt Baker ski patrol reports widespread natural and ski triggered storm slab of 6-12 inches. NWAC observer Jeff Hambelton in the nearby Mt Baker back country reports 10-40 cm storm slab layers of lower density snow, snow pack cracking and the warmer weather giving cohesion to new surface snow layers.

**The Bottom Line:** High avalanche danger will be seen at times this week as strong fronts finally begin to roll across the Northwest.

Elevation

Tuesday

Wednesday



Above Treeline



High

Very dangerous avalanche conditions. Travel in avalanche terrain not recommended.



Near Treeline



High

Very dangerous avalanche conditions. Travel in avalanche terrain not recommended.



Below Treeline



Considerable

Dangerous avalanche conditions. Careful snowpack evaluation, cautious route-finding and conservative decision-making essential.

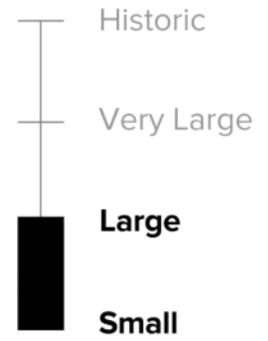
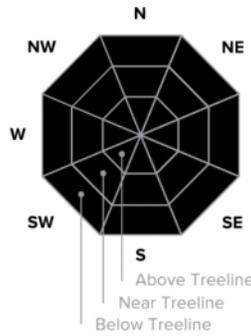


Danger Scale



# Avalanche Concerns

**Storm Slabs** Storm slabs usually stabilize within a few days, and release at or below the trigger point. They exist throughout the terrain, and can be avoided by waiting for the storm snow to stabilize.



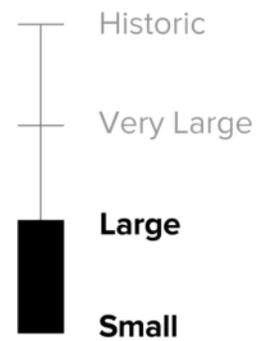
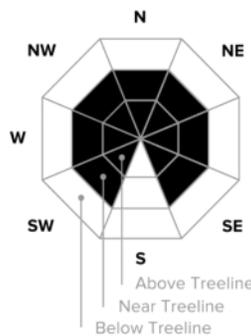
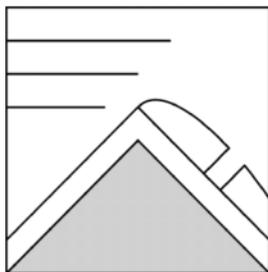
Avalanche Concern

Aspect/Elevation

Likelihood

Size

**Wind Slab** Wind slabs can take up to a week to stabilize. They are confined to lee and cross-loaded terrain features and can be avoided by sticking to sheltered or wind scoured areas.



Avalanche Concern

Aspect/Elevation

Likelihood

Size

Northwest Avalanche Center

Stevens Pass Ski Area Brooks Chair (4850')

Washington Department of Transportation Schmidt Haus (3950')

Stevens Pass, Washington

MM/DD	Hour	Temp	Temp	RH	RH	Wind	Wind	Wind	Hour	Total	24 Hr	Total	Press
	PST	F	F	%	%	Avg	Max	Dir	Prec.	Prec.	Snow	Snow	mb
		4850'	3950'	4850'	3950'	4850'	4850'	4850'	3950'	3950'	3950'	3950'	3950'
2 12	400	32	28	100	94	3	17	118	.16	.7	5	73	998
2 12	300	28	28	100	94	6	13	56	.14	.54	4	73	999
2 12	200	25	28	100	94	8	14	55	.11	.4	4	73	999
2 12	100	25	28	100	94	7	13	53	.11	.29	4	73	1001
2 12	0	25	28	100	93	7	12	56	.03	.18	3	72	1003
2 11	2300	25	28	100	92	9	16	51	.02	.15	3	71	1004
2 11	2200	25	28	100	92	9	16	49	.01	.13	2	72	1006
2 11	2100	25	29	100	92	11	17	49	.01	.12	2	71	1008
2 11	2000	25	29	100	92	10	16	45	.01	.11	2	71	1009
2 11	1900	25	29	100	91	9	15	43	.03	.1	2	71	1011
2 11	1800	26	30	100	91	8	13	46	.04	.07	0	70	1011
2 11	1700	27	31	100	89	6	12	48	0	.03	0	70	1012
2 11	1600	29	33	100	88	2	10	61	0	.03	0	70	1013
2 11	1500	30	35	100	85	1	3	48	0	.03	0	70	1013
2 11	1400	30	34	100	85	3	12	252	0	.03	0	70	1013
2 11	1300	27	34	100	82	5	12	249	0	.03	0	70	1015
2 11	1200	27	33	100	77	7	16	231	0	.03	0	70	1015
2 11	1100	26	32	100	82	7	17	226	0	.03	0	71	1016
2 11	1000	26	31	100	90	4	12	229	0	.03	0	71	1016
2 11	900	26	30	100	91	3	9	237	0	.03	0	71	1015
2 11	800	26	30	100	91	5	16	237	0	.03	0	71	1015
2 11	700	27	30	100	89	7	23	227	0	.03	0	72	1014
2 11	600	26	31	100	88	10	28	219	.01	.03	0	71	1014
2 11	500	27	31	100	86	13	28	219	.02	.02	13	72	1014