

Little Zigzag Canyon, Mt. Hood Accident 3-17-14

Date: 3-17-14

Location: Little Zigzag Canyon, near PCT crossing, Mt. Hood

Number in Party: 2

Number caught: 1, completely buried

Number hurt: 0

Number killed: 0

Start Zone Elevation: around 5800'

Start Zone Aspect: SE

Average Track Slope Angle: 30-35 deg

Location of subject relative to Start Zone: middle track, ascending

Avalanche type: Soft wind slab

Sliding surface: new/old

Size: unknown, but at least D2

Avalanche Track: Gully

Trigger: Skier (AS)

Width of fracture: est 300'-400'

Height of Crown Face: 1' to 2.5' (30 cm to 75 cm)

Vertical Fall: 100', skier carried 25'

Injuries: None

Rescue: Partner and self rescue

Avalanche safety gear carried by subject (transceiver, shovel, probe, etc): Both skiers carried transceivers, shovels, and probes

NWAC Forecast zone: Mt. Hood area

NWAC Avalanche Danger Rating in effect for start zone (near treeline): Considerable

Comments from NWAC (Dennis D'Amico)

Ron's first hand account of his avalanche accident is well documented below. His narrative tells the story of natural signs of instability leading to being caught in an avalanche when his party decided to cross a small but wind loaded terrain trap. The NWAC weather station data shows that heavy snowfall with a cooling trend had occurred Sunday night into Monday...with 21 inches at the Timberline base station through Monday afternoon along with strong northwest to west transport winds (note the Magic Mile wind direction in unreliable). We are glad this story had a happy ending and thank Ron for taking the time to write up and photograph his story so others can learn and stay safe in avalanche terrain.

Narrative from Ron Gillilan (skier caught in slide)

I partnered up with Stoudema for what looked to be a nice shot at some late season Mt Hood powder. We toured west from Timberline starting at 8:45am. Temperatures were in the low 20's with a strong west wind, thin cloud cover and continuing snow fall. The forecast overnight had been for 10-12" with a daytime forecast of less <1", but in reality there had been 16-18" in 10 hours, with continuing accumulation. On the tour we noticed frequent compression cracks and the occasional shooting crack on low angle slopes. Hasty pits revealed a weak sun crust from the previous 2 days of warm weather covered by 5" of low density with the upper portion of the new snow being higher density due to the effects of the wind. We crossed Sand canyon in the vicinity of the PCT and once again did a couple hasty pits on the west side (E/SE aspect) of the canyon and found the lower unconsolidated layer to be reactive and our concerns were heightened but not to the point of a turnaround as there were plenty of options ahead in avalanche safe areas. Our next crossing was the Little Zigzag canyon also on the PCT

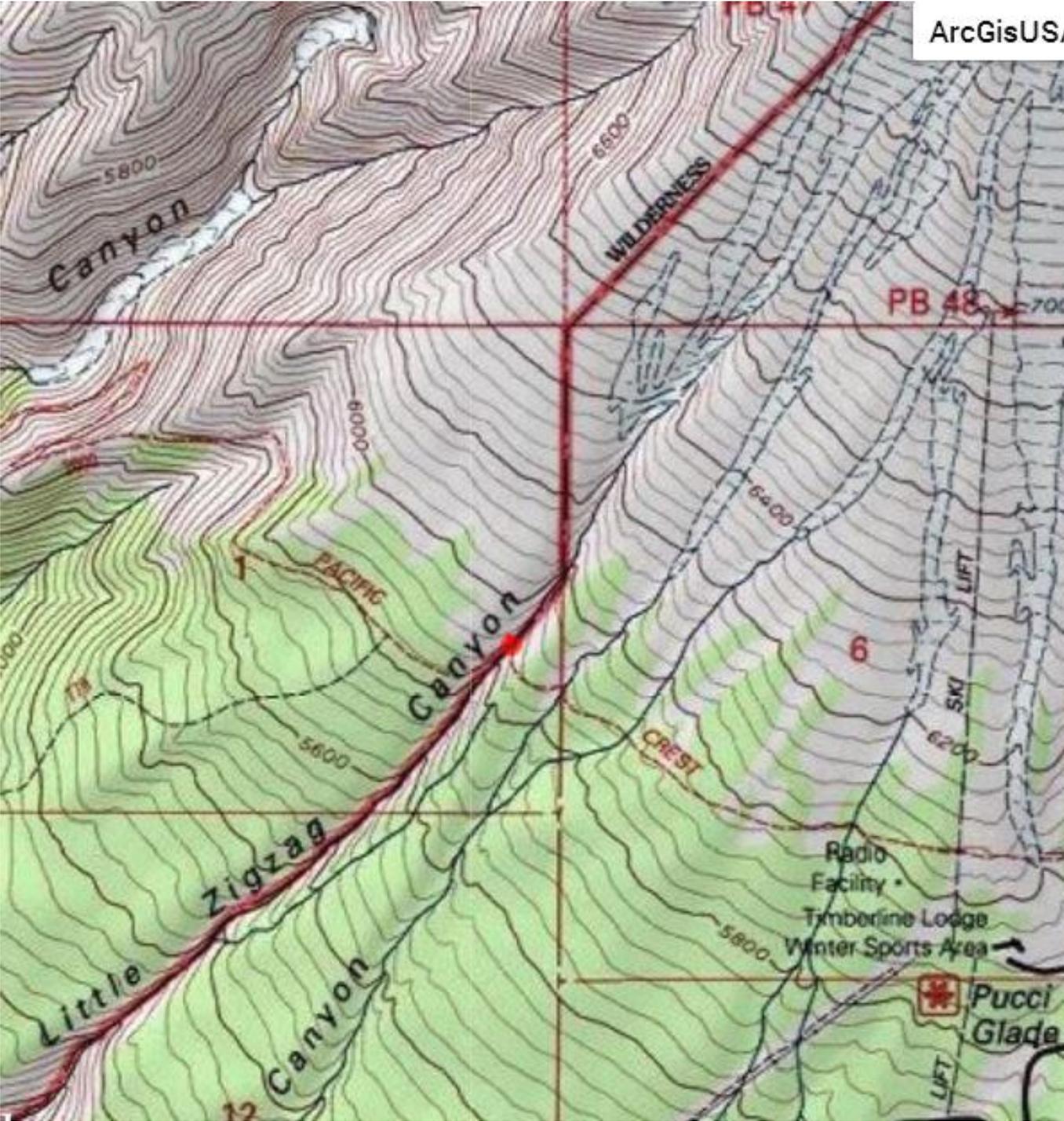
track. When we reached the rim of the canyon we were in single travel mode, and I descended first to the bottom of the canyon, about a 100' drop. Stoudema followed after my go ahead signal, and we regrouped for a moment to discuss our climb out strategy. Once again it was one at a time protocol, and I took the lead again. I started up the west wall (SE aspect). I had traveled about 20', and decided to put my Dynafits in ski mode as a precaution, but leaving my leashes with breakaways connected. My plan was to move a little further and perform another hasty.

Traversing another 50 or so feet which put me about 20' up the wall a large shooting crack projected out and slightly down in front of me, and I realized instantly that the slope was going. I looked up and Yelled "slide". At this point I had about 2 seconds before the first wave over ran me, and thought I could brace and withstand it, but it crested right above me about chest height, and knocked me downhill on my left side. I was carried down hill under the pile for a couple seconds, fighting to gain the surface, but it continued to get darker. I was able to keep my right hand clear as things slowed, and try to clear snow away from my mouth, but was aspirating small amounts, and choking. Right as the pile came to a rest for me what appeared from my view as another wave passed over me thinning the coverage to where I could see light. With my free right arm I was able to punch through the 18" of pile above me and clear a small hole, get out a short wave, and a choking yell. My mouth and upper throat were filled with snow, but I was still able to get air through my nose, and with my free hand was able to dislodge most of what was in my mouth and continue to clear a breathing area. I heard nothing back from Stoudema, and at this point was starting to believe the run out had overtaken him as well, creating a much heightened fear in me. I only had the mobility of my right hand, as my head torso and so forth were encased. I will be the first to admit I have visualized this scenario, but never expected to play it out. As I continued with my assumed attempt at self rescue, a face peered down through my hole.

Instant calmness overwhelmed me, and now I could see the impact the event was having on Matt. The run out had indeed passed him by a few feet, but didn't knock him down. He was able to get clear in a few seconds, and did notice my hand poking out, and hear a muffled yell. He had to survey the slope above for continuing danger, and after a determination that the entire slope had released, move towards my position, and dig me out. As he started to my position he lost track of the exact spot, as my hand was back under, and took a moment to pull out his transceiver. By his recollection I was only under about 2 minutes until he arrived, but it seemed like forever to me. He was able to dig me out in 5 minutes, my skis were still leashed to my boots, as this had been a non-violent episode, but they were strained. I was uninjured. My poles were gone, and required over an hour of excavating to find. One was below and behind me, and the other was about 6 feet ahead of me, I assume where it had been ejected when the wave hit me. As stated earlier my head was about 1.5' under and my feet were ~3-4' down. I had been carried 25'. The debris pile at it's deepest which appeared to coincide with my burial location was 5'. The length of the slide path was ~150' with ~100' of vertical fall. The width of the slide is indeterminate as we could not see the upper flank in the continuing storm, but the lower flank was about 150' down from our position. At this time we guess the width to be 300-400'. Slope angle is 30 to 35 degrees, steepening at the crown. The crown was variable from 1' to 2.5', and the bed surface was a Q1. I was the trigger. This was the only place we noticed this low a Q value throughout the day. Other locations revealed the weak structure in the storm snow, but not the bonding weakness.

We did continue our trip, and encountered nothing more, besides powdery bliss. The options for skiing were limited to trees, and under their shelter there was none of the slabiness encountered earlier. 4 hours of continued touring and skiing brought us back to the same place of the slide, only from the top side now, at which time we did extensive stability testing in the form of hasties, cutting, and stomping. No instability was noticed, and the judgment was that 4 hours was the cure. The lower density snow near the crust was now non-reactive. We continued our tour home with no further incident. This extended time beyond the incident allowed for discussion on how we had fallen into this trap, and how further incidents can be avoided. Also, discussed were how to improve travel and ski protocols. Over the years of no incidents we get sloppy. I believe it is human nature, and what happened on this trip revealed it. We did enough to survive; we could have done more. As to how we fell into this trap, I am not going there specifically. All the information is embedded in the story above. I think there is some things in this event that will help others, and it has been interesting for me to write. I thank Matt for saving my butt, and owe him many beers in the future.

Account originally posted at http://www.turns-all-year.com/skiing_snowboarding/trip_reports/index.php?topic=31167.0



● = location of avalanche



Ron traversing up the slope seconds before the slope failed



The debris pile, bed surface and crown at the top of the photo

Mt Hood area

Issued: 6:00 PM Sunday, March 16, 2014 by Kenny Kramer

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.

The Bottom Line: Watch for areas of newly forming wind slab on lee easterly aspects near and above treeline. Watch for unstable storm slabs formed Sunday. Dangerous avalanche conditions are expected so make careful snowpack evaluations and choose more conservation terrain.

Elevation

Monday

Tuesday



Above Treeline



Considerable

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



Near Treeline



Considerable

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



Below Treeline



Moderate

Heightened avalanche conditions on specific terrain features. Evaluate snow and terrain carefully; identify features of concern.



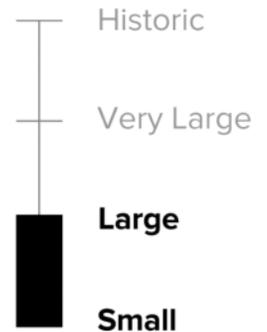
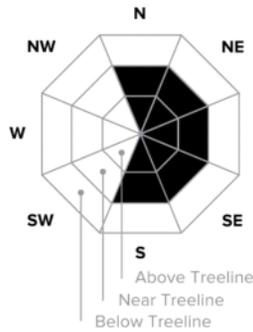
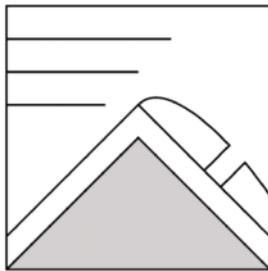
Danger Scale



Avalanche Concerns

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

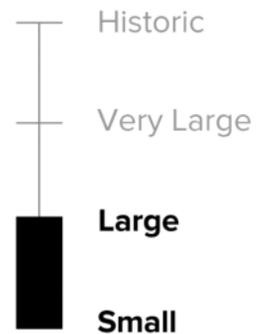
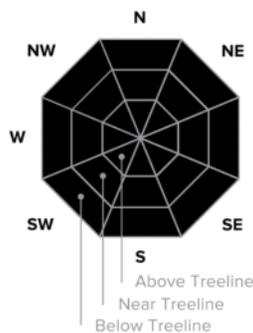
Aspect/Elevation

Likelihood

Size

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

Snowpack Analysis:

Recent Weather Summary

A front Friday deposited about 1-1.5 inches of water over the Mt Hood areas with much of it as rain below 5500 feet with heavy wet snow and strong winds above 6000 feet. A very warm and sunny day Saturday caused significant surface snow melt with clearing overnight leaving a hard and shiny crust as of Sunday morning on most slopes.

Very mild temperatures again Sunday have softened surface snow conditions once again. The last few days of melt and refreeze are limiting current and near term avalanche concerns to new storm instabilities.

A stalled moist frontal boundary has been draped over mainly the North WA Cascades since Saturday afternoon with the recent active weather confined to the north Cascades and Olympics while Mt Hood has remained well south of the activity, but not for long.

Earlier weather conditions

The active weather pattern from much of February continued through the first 10 days of March depositing 10-13 inches of water over the Mt Hood area amounting to 2-4 feet of snow. Mostly warm dry weather this past week was dotted with a brief warm and wet system Friday giving way to sunshine and warm weather again Saturday.

Field reports from the Mt Hood Meadows ski patrol earlier this week indicated deep wet snow with the potential for deeper wet snow avalanches. The upper part of the ski area was closed Wednesday due to wet snow concerns, but explosive avalanche control did not produce avalanches. By Thursday there had been a couple days of daytime warming and night time cooling in all areas.

Detailed Forecast for Monday:

The strong front across the WA Cascades Sunday should shift south over the Mt Hood area overnight bringing a period of moderate to heavy snow and strong winds. This should build new wind slab on lee terrain near and especially above treeline. The bonds of new snow to a refreezing crust should be good given the slow cooling trend.

A cool upper trough should pass the Cascades early Monday with cool but drying northwesterly flow expected through the day Monday. A few light snow showers early Monday should give way to partly to mostly cloudy conditions with increasing and strong northwest winds lasting through the day.

This weather should allow for the older wet snow to form a more solid underlying crust which may act as a sliding surface. The strong winds should transport recent snow, mainly above treeline but look for transported snow near tree line as well. Winds should shift to more northwesterly Monday so watch for wind slab formation on east to south facing slopes.

Storm slabs should begin to slowly stabilize Monday but should remain a concern and expect triggered slides to remain likely on steeper open terrain where cautious route-finding and conservative decision making will be essential.

Northwest weather and Avalanche Center
 Timberline Lodge, Oregon

MM/DD	Hour PST	Temp F 6000'	RH % 6000'	wind Min 6000'	wind Avg 6000'	wind Max 6000'	wind Dir 6000'	Hour Prec. 6000'	Total Prec. 6000'	24 Hr Snow 6000'	Total Snow 6000'
3 16	0	35	97	-0	10	24	293	0	0	1	131
3 16	100	35	98	1	11	24	297	0	0	1	131
3 16	200	33	86	0	12	21	300	0	0	1	132
3 16	300	33	77	5	13	22	301	0	0	1	132
3 16	400	33	78	1	14	23	304	0	0	1	131
3 16	500	33	77	9	17	27	309	0	0	1	131
3 16	600	31	87	6	15	31	304	0	0	1	131
3 16	700	31	81	-0	13	24	298	0	0	1	131
3 16	800	33	89	6	12	21	298	0	0	1	131
3 16	900	36	81	6	12	21	296	0	0	1	131
3 16	1000	37	86	6	12	22	294	0	0	1	130
3 16	1100	38	84	5	11	19	291	0	0	1	130
3 16	1200	39	83	6	11	22	287	0	0	1	130
3 16	1300	39	76	5	11	21	289	0	0	1	130
3 16	1400	39	64	5	10	20	277	0	0	1	129
3 16	1500	40	55	5	11	23	268	0	0	1	129
3 16	1600	36	70	6	12	24	271	0	0	1	130
3 16	1700	33	85	6	11	21	281	0	0	1	130
3 16	1800	31	99	6	11	20	272	0	0	1	129
3 16	1900	30	100	4	10	19	271	.1	.1	1	128
3 16	2000	29	100	5	9	18	283	.18	.28	3	128
3 16	2100	26	100	2	10	21	292	.26	.54	6	131
3 16	2200	23	100	4	11	24	303	.27	.81	10	133
3 16	2300	21	99	7	12	22	299	.19	1	11	135
3 17	0	20	99	6	13	25	297	.15	1.15	13	136
3 17	100	20	99	5	13	26	295	.14	1.29	14	137
3 17	200	21	99	5	13	26	287	.09	1.38	14	138
3 17	300	20	98	8	15	29	293	.12	1.5	16	139
3 17	400	19	98	5	14	32	295	.13	1.63	16	139
3 17	500	19	97	7	15	27	292	.11	1.74	1	140
3 17	600	19	97	8	15	27	294	.07	1.81	2	140
3 17	700	19	97	8	16	29	304	.12	1.93	3	141
3 17	800	20	98	7	15	24	310	.12	2.05	4	142
3 17	900	20	96	7	18	31	314	.09	2.14	4	142
3 17	1000	21	95	9	17	31	309	.06	2.2	5	142
3 17	1100	21	96	13	22	38	317	.03	2.23	4	142
3 17	1200	23	97	10	18	28	311	.08	2.31	5	143
3 17	1300	22	96	13	21	32	319	.03	2.34	5	143
3 17	1400	22	95	11	20	33	310	.03	2.37	5	143
3 17	1500	21	97	9	17	28	305	.03	2.4	5	143
3 17	1600	21	98	9	17	30	309	.06	2.46	6	143
3 17	1700	20	98	9	18	29	315	.01	2.47	6	143
3 17	1800	20	98	9	19	32	315	.05	2.52	6	143
3 17	1900	20	98	13	20	30	329	.01	2.53	6	143
3 17	2000	20	98	13	21	29	328	0	2.53	6	143

Total
Prec.
6000'

 2.53

Northwest weather and Avalanche Center
 Top of The Magic Mile chair, Timberline, Oregon

wind sensors not heating and may rime

MM/DD	Hour PST	Temp F 7000'	RH % 7000'	wind Min 7000'	wind Avg 7000'	wind Max 7000'	wind Dir 7000'
3 16	0	32	98	22	36	48	338
3 16	100	31	97	25	38	57	345
3 16	200	31	71	27	39	53	352
3 16	300	29	77	27	38	52	47
3 16	400	29	67	31	41	54	176
3 16	500	29	71	34	45	71	187
3 16	600	28	79	30	45	60	173
3 16	700	29	85	27	36	49	170
3 16	800	31	99	26	35	47	187
3 16	900	33	92	28	36	46	168
3 16	900	33	92	28	36	46	168
3 16	1000	35	90	25	36	47	130
3 16	1100	35	88	25	35	47	197
3 16	1200	35	89	25	36	49	151
3 16	1300	36	79	17	31	42	185
3 16	1400	34	72	17	30	45	207
3 16	1500	34	77	19	32	51	170
3 16	1600	31	84	21	39	51	173
3 16	1700	29	97	27	39	57	163
3 16	1800	28	100	27	38	54	170
3 16	1900	28	100	24	38	58	169
3 16	2000	26	99	24	35	51	171
3 16	2100	23	98	23	32	42	178
3 16	2200	21	97	29	35	43	178
3 16	2300	19	97	31	39	48	175
3 17	0	17	96	35	42	50	170
3 17	100	17	97	35	45	60	151
3 17	200	17	97	35	46	62	160
3 17	300	16	96	37	52	78	156
3 17	400	15	96	35	49	70	153
3 17	500	15	95	35	52	72	160
3 17	600	16	96	36	51	74	162
3 17	700	16	96	33	47	61	158
3 17	800	19	97	30	43	59	182
3 17	900	19	96	34	44	57	174
3 17	1000	21	97	33	43	54	165
3 17	1100	23	97	33	44	57	164
3 17	1200	25	97	31	41	52	162
3 17	1300	25	97	35	43	52	168
3 17	1400	23	97	36	44	56	152
3 17	1500	21	97	32	40	54	155
3 17	1600	20	96	31	41	51	160
3 17	1700	19	97	27	37	50	149
3 17	1800	18	97	27	35	44	175
3 17	1900	17	97	25	32	39	207