

AVALANCHE! Yell it out!

by Dave Galvin

We live and recreate in the corner of the globe (do globes really have corners?) with the largest snowfall on record (world record is held by Mt. Baker Ski Area @1,140 inches or 95 feet in 1998-'99, followed by Mt. Rainier - Paradise@1,120 inches or 93 feet in 1971-'72). Such snow accumulation, especially in big dumps such as happened over the weekend of February 17-19, 2012, often leads to snow sliding downhill unexpectedly. With often deadly results.

Click on this link:



[Big Avalanches - YouTube](#)

www.youtube.com/watch?v=B0RWLxOFGLY

▶ 1:54

and watch the 2-minute clip. Turn off the annoying music that accompanies the hair-raising video (the music implies a “yee-ha, ride-‘em” attitude that is disrespectful of those who have died). If your palms don’t sweat by the ending, you don’t have a pulse.

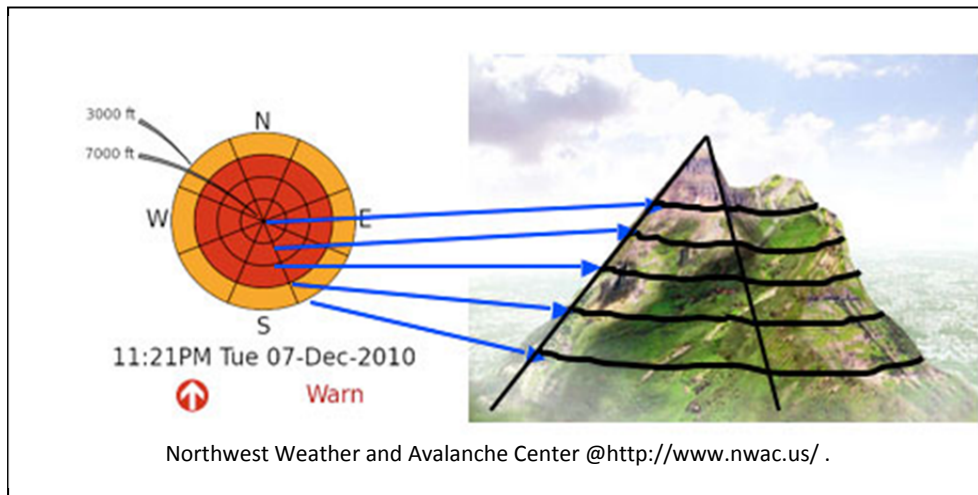
Note one thing in the film clip above: how fast that snow was moving. You cannot out-ski or out-board the downhill momentum of an avalanche – one’s only hope, once caught, is to get off to the side, or to ride it out while staying near the surface and hope you have helpers nearby. The goal is to not get caught. More about hope below.

An **avalanche** is “a sudden, drastic flow of snow down a slope, occurring when either natural triggers, such as loading from new snow or rain, or artificial triggers, such as snowmobilers, explosives or backcountry skiers, overload the snowpack.”¹ Here in the Northwest, we typically have what are called “slab avalanches,” which react to a stress point and result in a whole section of snow (a slab) to break free and start to move downhill. Cornices (a type of slab) are also common here – accumulations of wind-blown snow that hang over the top of ridge-lines, waiting for the right conditions to break free. Avalanches, once initiated, follow drainage patterns downhill. They often go all the way to the valley floor and even wash part way up the other side carrying debris (trees and rocks) along.

Avalanche experts look at snow-pack structure, crystals, hoarfrost, layering, loading factors, history, weather and a variety of other characteristics to predict the potential for movement. There is a lot of physics and math involved. Plus some art. In-bounds in nearby ski areas, we have pros who know what they are doing and take their lives in their hands to control avalanches by ski-cut or explosive. If we

have any plans to go out-of-bounds into the Pass' backcountry, we, luckily, in the Snoqualmie Pass area of the central Cascades, can rely on the **Northwest Weather and Avalanche Center** ("NWAC") to crunch the numbers. We check NWAC's website early and often during the snow months, at <http://www.nwac.us/>.

NWAC uses the North American Avalanche Danger Scale for ratings 1 to 5 across both altitude and aspect (compass bearing). The "rose" diagram thus corresponds to both features:



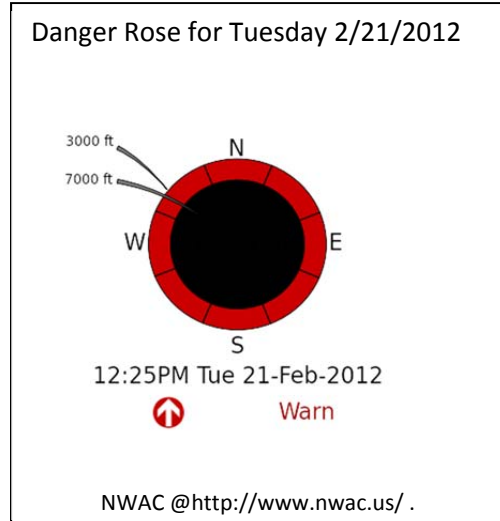
Danger Scale Legend

5	= Extreme avalanche danger
4	= High avalanche danger
3	= Considerable avalanche danger
2	= Moderate avalanche danger
1	= Low avalanche danger

Northwest Weather and Avalanche Center @<http://www.nwac.us/>.

The NWAC rose for February 21, 2012, was one of the scariest I have seen in a long time: red (level 4) in a complete circle at 3,000 feet, and all black (level 5) in a complete circle above 4,000 feet! Translation: stay out of the backcountry, everywhere.

How does this issue affect Sahalie skiers, snowboarders and snowshoerists? In-bounds, on the open slope of Sahalie's rope-tow hill, snow movement is a minimal problem, not to worry. On the edges of Sahalie's hill, such as skiers' left at



the top of rope two (what my snowshoe friends call “Dave’s delight”), there are some steep pitches off the side down toward Commonwealth Creek that could slide, although not very far. Caution is advised. Tree wells are a related concern there. Above our rope tows, for those (mostly snowshoers) who go up into Commonwealth Creek Basin, we should keep a wary eye out for the steep rocks on the south-facing slopes of Guye Peak (snowshoers’ left going in) – snow has been known to avalanche down through the open trees that we typically traverse, although rarely. Stay low (no higher than the top of the road to the avalanche fences) until one enters the trees in the Forest Service wilderness area boundary. Enjoy the Commonwealth Basin floor, but don’t venture too far up-hill or up-basin if conditions are extreme – avalanches have been known to come down Red Mountain and Kendall Peak all the way to the basin floor). Enjoy the Commonwealth Creek falls, then return safely to the lodge.

At nearby ski areas, you can rely on the pros. Stay in-bounds. If you do desire to go into the Alpentel backcountry, consult the Ski Patrol first at the top of Chair 2, and know where you are going. Do not venture out there if the area is closed or if you don’t know where you are going, even poaching a little bit past the “forever” ropes in the near backcountry. Play it safe. The recent fatality at Alpentel involved a group who went east from the top of Chair 1/Armstrong Express (skiers’ right) and ended up on cliffs on the northeast corner of the Alpentel area on WAC bluff, out-of-bounds. Very dangerous area. Three feet of new snow. Not a wise place to be.

When venturing into uncontrolled terrain, the following practices are advised (this is the “hope” section promised earlier):

- Check out the info and resources listed at Alpentel’s backcountry website at <http://www.summitatsnoqualmie.com/Mountains/Safety/859/Backcountry-Safety> .
- Use an avalanche transceiver(also called a beacon), which costs between \$200 and \$500 but could save your life. Transceivers send out a signal that can be picked up by the rest of the group in the event of an emergency and homed-in-on quickly. Practice using it! An inflatable pack device such as ABS (used by the survivor of the recent avalanche at Stevens Pass) raises one’s odds; cost is \$600 to \$1300. Probes and shovels should also be carried, since time is of the essence in the event of a burial of a buddy in the snow.
- Travel in a group, but minimize the number of people exposed to risk at any time. Have a leader whose decisions are final. Maintain separation. Buddy up. Watch the one person traversing a questionable slope, while the rest of the group is in a protected area.
- Plan escape routes and keep making plans as the group progresses. Communicate current conditions and plans regularly so that all group members understand.
- If an avalanche starts, all observers should yell “Avalanche” as loud as possible to warn those who might be able to ski out of danger. Those not involved should note carefully what happens to those swept up in the event, including likely final resting places once the snow stops moving.
- If swept up in moving snow, try to stay upright and try to ski or board off to the side if possible. Once caught in the moving snow, swim with the current, trying to keep head above the snow level (easier said than done: victims routinely describe the experience as being in a washing

machine). Grab for trees. A buddy of mine hugged a tree to keep from continuing downhill in a slide in B.C.; he went unconscious with the force of the avalanche, but he managed to live.

- When the snow slows, kick around to try to break the surface and get your hands up in front of your face to create an airspace. Remain calm, breath slowly. Time is of the essence once avalanche victims are buried. Those not involved need to switch beacons to receive and locate the victims quickly. Shovels ready. People completely buried under the snow have been rescued, but time is measured in minutes for success; otherwise, the beacons only serve as useful locators for the bodies.

If the above list frightens you, the simple answer is to stay in-bounds. For those ready for the risk, courses are regularly offered in the area, which usually include a few lectures plus at least one field day. Cost is in the \$180-\$300 range, but well worth the price. A couple years ago, teenagers Austin Bogue, Troy Atwood and Nick Galvin from Sahalie took a local course offered at Alpentel. I would trust their judgment as a result more than most of the other un-trained club members. Check out offerings listed at NWAC (<http://www.nwac.us/education/providers/>) or at ProSki in North Bend (<http://www.proguiding.com/trip/view/aiare-avalanche-course-level-1>).

The Northwest has the distinction of having the largest fatal avalanche accident in the United States, back in 1910 at the western terminus of the Stevens Pass railroad tunnel. Ninety-six people were killed. For a riveting read of this tragedy, pick up a copy of Gary Krist's *The White Cascade*.

You can read the statistics and specific stories of nearby avalanche victims at NWAC (<http://www.nwac.us/accidents/>), from 1997 to 2012. This is a fascinating archive, with very detailed reports on file (pdf's online) for each incident, often recounting the accident from multiple perspectives and including photos and maps. The summary includes one pro patroller from Alpentel who survived a slide in early 2001 while doing control work in the near backcountry; two campers caught while in their tent at Source Lake, who survived in early 2002; one snowshoer in Gold Creek and two skiers on Granite Mountain, also in 2002; one skier seriously injured on Granite Mountain in 2003; a snowshoer on the Snow Lake trail killed in December 2003; two skiers caught, one died, on Lower International at Alpentel in early 2005; three hikers, two killed on the Snow Lake trail in December 2007; two skiers caught, one significantly injured on the west slope of Kendall Peak (the side we can see from Sahalie) in April 2010; solo skier killed by cornice failure on Red Mountain in February 2011; a skier caught but uninjured on Chair Peak near Snow Lake in March 2011; two skiers injured, one seriously, on Mt. Snoqualmie in April 2011; and two snowshoers caught but uninjured on Scout Patrol Peak just west of Snoqualmie Pass on January 1, 2012. Now we add to that list the tragedy of four snowboarders caught, one killed, off the NE side of Alpentel (WAC bluff) on February 19, 2012 (report yet to be filed). Sobering reading, well worth the time to check out these reports.

For more information, check out the links I've mentioned and download a copy of NWAC's booklet, *Basic Principles for Avoiding and Surviving Snow Avalanches*, at http://www.nwac.us/media/uploads/pdfs/USFS_Snow_Avalanche_Brochure.pdf.

This summary is not meant to scare you, but rather to explore the local experience and concerns related to avalanches at Snoqualmie Pass. Ski in-bounds on Sahalie's hill and local areas to feel perfectly safe. Follow patrolers' advice and open/closed postings at the local areas. Don't poach under Alpental's forever rope if the area is closed – conditions can go south quite close in the near backcountry. If you want to venture farther out into the uncontrolled deeps, do your homework, use proper equipment and protocols, check the NWAC forecasts, and BE SAFE. We want you to be a Sahalie member for years to come, not a statistic for the evening news. It's fun in the backcountry, when conditions are right to have fun.

¹ "Avalanche," Wikipedia at <http://en.wikipedia.org/wiki/Avalanche> , accessed 2/22/2012.