

Avalanche prevention program minimizes risk for motorists travelling mountain highways

BY KELLY SINOSKI, VANCOUVER SUN FEBRUARY 9, 2011



Scotty Aitken, avalanche technician with the Provincial Avalanche Program, atop a mountain overlooking Hwy 99 near Duffy Lake, where the avalanche team detonated explosives to minimize avalanche danger on the road below.

The helicopter circles the snow-covered mountains in Lost Valley. A radio crackles: “two minutes.” An explosive drops on a cornice.

Boom.

Whoosh. Twin funnels of snow pour down the face of the mountain.

“There it goes,” said Mike Boissonneault, manager of the Provincial Avalanche Program.

“That was a good one.”

The avalanche was the second of three to be triggered Tuesday by the Provincial Avalanche Program, a team of B.C. technicians who are out seven days a week monitoring the peaks above Highway 99 near Duffey Lake to keep the roads open and safe from avalanches. The avalanche risk in the area right now is moderate.

Avalanche technician Scotty Aitken keeps his eyes peeled for fracture lines, unstable snowpacks and recent avalanches during a helicopter tour of the area.

Aitken, who has been on the job for 25 years, said all of these factors are important in determining

avalanche risk.

“We could look at a certain period and see how it affects the highway. Avalanches are the best guide we have.”

The first stop on the tour Tuesday was 7,500 feet on top of Blowdown Peak, where the team prepared to set off a “Gazex explosion control system.”

This consists of a large steel tube connected to pipelines of oxygen and propane. The explosive gas is sparked, sending 20 kilograms of TNT and a shock wave into the snowpack.

There are three Gazex systems in the Duffey Lake area. The Kootenay Pass and the Salmo-Creston area, where there has been a spate of road closures due to avalanches this year, has 20 Gazex systems, which can clear the pass in a little over half an hour.

The system can be operated from the road, using a laptop and radio modem, if needed.

Aitken noted while the snowpack is above average near Duffey Lake, the season so far has been “busy, not extraordinary, but certainly active avalanche-wise.”

Natural avalanches are triggered when the bonds that hold the snowpack together break from stresses created by rain, wind, rising temperatures or the weight of new snow. They can be caused by anything from a large cornice drop to a snowmobiler to a skier, Aitken said.

The team focuses on the fracture lines, snowpack data, stability tests and weather station data to determine risk before starting avalanche control. If the situation is severe, they will close the highway in question, usually for about two hours.

“There’s a lot of information gathering; the current weather, information on the snowpack conditions ... in a significant avalanche we would close the highway,” said Boissonneault.

“We can’t have the highways open when avalanches are threatening safety.”

One way to test the stability of the snowpack is by shovelling a column out of the side of a mountain.

After digging about three feet down, Aitken uses a thermometer to measure the temperature every 10 centimetres and hand resistance to test the strength of the snow. Then, using a snow saw, he slices off chunks of the column to examine the different layers.

“This is called a tilt test to find weak layers,” he said. “We’re looking for a shear or snow failing ... It’s a way of finding a weakness.”

The bottom layer is similar to granulated sugar because of its coarseness and the glinting “facets” that sparkle in the sunshine. The top surface was more powdery and sticky.

The bottom layer of snow is starting to stick together, Aitken noted, but if it wasn’t, the combination would put it at high risk of an avalanche because of a solid layer on top of a weaker one.

"We're not too worried about this particular snowpack," Boissonneault said.

The Ministry of Transportation and Highways spent about \$4 million last year for the avalanche program.

So far this year, there have been several road closures along Highway 1 due to avalanche risks, including a particularly lengthy shutdown of the highway near Golden.

There have also been backcountry deaths.

A man in his 20s died earlier this week after getting caught in an avalanche near Smithers, while an Alberta man died in January after an avalanche hit a group of skiers in B.C.'s Kokanee Glacier Provincial Park.

Aitken said it's rare for drivers on B.C.'s highways to be caught in an avalanche. On the Duffey Lake Road, for instance, signs remind drivers not to stop on the road because of the avalanche risk.

And the team is working feverishly to make sure none of them get caught unaware. Although they sometimes take a helicopter, usually they use a snowmobile and skis to get to the top of the mountain. "Ready to go," Aitken said.

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