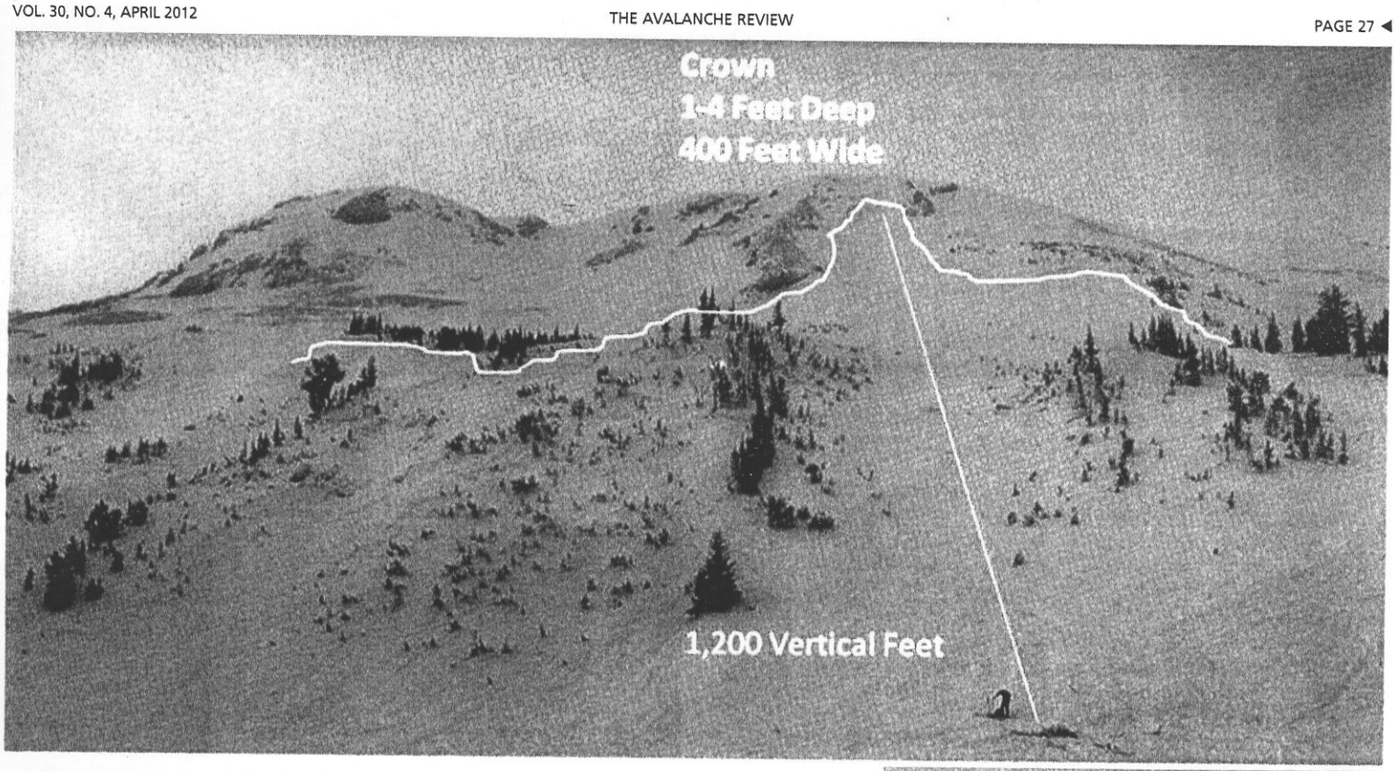


COOKE CITY:

A New Year's Eve Tragedy In Two Parts

Story by Eric Knoff and Doug Chabot

PART 1 by Eric Knoff

On December 31, 2011, two people were killed in separate avalanches in the mountains outside of Cooke City, Montana. One victim was a skier, the other a snowmobiler, both Montana residents. During the three days before the accidents the mountains around Cooke City received over 3' of dense snow totaling 4" of SWE. Consistent northwest winds blew 30-40mph with gusts in the 60s during the storm. The new snow was deposited on a layer of facets formed during an unseasonably dry December. This rapid load produced unstable conditions, prompting the Gallatin National Forest Avalanche Center (GNFAC) to issue a backcountry Avalanche Warning for the area.

The initial Avalanche Warning for the mountains around Cooke City was posted at 5pm on Friday, December 30. At this time, 2" of SWE had been recorded over a 48-hour period at the Fisher Creek Snotel site (elev. 9100') near Lulu Pass, creating our official warning criteria of HIGH avalanche danger on all slopes. Issuing the Avalanche Warning in the evening allowed it to be picked up and disseminated by the media by early Saturday morning.

I was in Cooke City at the time and spent much of December 30 ski-touring around Lulu Pass. My partner and I experienced widespread cracking and collapsing and triggered a few small avalanches. Precipitation Intensity rates were high throughout the day, and the storm continued to rage as we reached town at 5pm. On Friday evening the weather forecast was for another 1-2' of snow to accumulate by the morning of Saturday the 31st accompanied by strong northwest winds.

As forecasted, an additional 2" of SWE totaling 1.5' of snow accumulated at the nearby Snotel site by Saturday morning. This new precipitation pushed the 72-hour storm total to 30" of snow equaling 3" of SWE. The GNFAC extended the avalanche warning through Saturday the 31st, New Year's Eve Day, which dawned clear and cold. Temperatures were in the single digits and winds were blowing 10-15mph out of the NW. By 11:30am the ambient air temperature had only warmed to 8°F, but sunshine and fresh powder had drawn a large number of skiers and snowmobilers to the slopes around Daisy Pass and Lulu Pass. By this time, my partner and I had remotely triggered a size-D2 avalanche and observed both natural and human-triggered avalanches in the surrounding terrain. We both felt uneasy about the conditions and agreed that an avalanche incident was a good possibility.

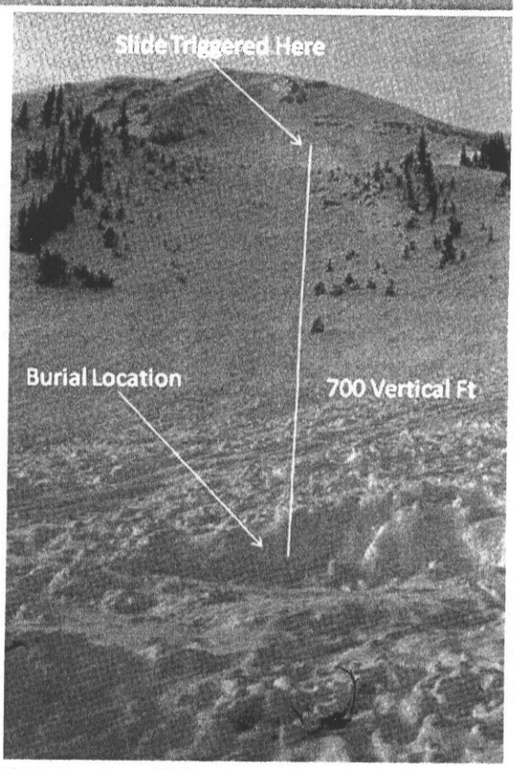
At approximately 11:45am my partner and I were finishing field observations near Lulu Pass. As we were loading our skis on the snowmobiles, I glanced across the valley just in time to watch a snowmobiler finish a turn midway up the northeast face of Mt Henderson. Suddenly, the slope broke around him, and he disappeared from my view in a wall of white. I couldn't tell if the snowmobiler who triggered the slide had been buried or if other riders were involved, but the sheer size of the avalanche made my partner and I both realize that the situation was serious.

I immediately radioed Cooke City Search and Rescue, and we headed to the scene. My partner and I both felt skiing to the scene was a safer option, and we arrived around the same time as search and rescue. Arriving on the scene, we were informed that a piece of the victim's boot had been visible on the surface, cutting down on search time. Members of the victim's party dug the rider out in approximately 12 minutes with his head buried 3' deep. The victim was pulseless, and party members initiated CPR. Upon arrival, search and rescue applied an AED without success. CPR was continued for approximately 45 minutes before a physician in Cooke City gave notification over the radio to end CPR. The rescue was concluded, and the scene was clear by 1:30pm.

The avalanche broke 500' above the rider, catching him while he was riding downhill. Due to the confined nature of the path, escaping the slide was nearly impossible. The slide ran a total of 1000 vertical feet. The crown of the avalanche ranged from 1-4' deep and propagated 300-400' wide. The slope angle at the trigger point was 35 degrees, but increased to 40 degrees near the upper portion of the crown. The debris ranged from 7-10' deep near the toe of the slide. US classification of the avalanche is SS-AM-D3-R4.

PART 2 by Doug Chabot

Two hours after this incident, skiers triggered a slide south of Cooke City in the Absaroka Beartooth Wilderness approximately five miles to the south of first incident. The accident occurred a mile inside Wyoming up the Hayden Creek drainage near the base of Pilot Peak. This story is very different, yet equally tragic. A husband and wife drove to Cooke City from Bozeman to ski together after a hectic holiday. They spent the night in Cooke City and the following morning left in their telemark gear to follow a set of freshly broken ski tracks. About an hour later they met two skiers returning to town. The two skiers who broke trail found dangerous conditions and even remotely triggered a slide, which prompted them to turn around. They conveyed their avalanche concerns to the couple, who were also aware of the Avalanche Warning.



The northeast face of Mt Henderson on December 31, 2011, on Lulu Pass, near Cooke City, Montana. Steep, leeward, and loaded from 4" of SWE in a 72-hour period, the snowpack was producing copious signs of instability, including natural and human-triggered avalanches.

The couple continued on their tour. At the Montana/Wyoming border the husband decided they should turn on their beacons. He had an Ortovox Patroller while she had his 20+ year-old Ortovox F2. After turning it on he commented that the rechargeable batteries were weak. They continued touring despite widespread cracking and collapsing and weak batteries.

After breaking trail up a broad valley for close to a mile, the two skiers turned up an adjacent drainage with very narrow, steep walls. Many avalanche paths funneled into this gully from far above. Around 2pm they decided to ski out of the drainage and seek a more comfortable spot for

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lunch. The husband left the drainage, and his wife followed a few minutes behind. The drainage opened into a 50'-wide avalanche path. A few hundred feet up the path he triggered a small slide and yelled for his wife to grab a tree. The avalanche propagated uphill, releasing a majority of the slide path. The slide completely buried the husband and the dog, but the wife was not caught.

She turned her avalanche transceiver to "receive," put her earpiece in, and started searching. She could only get a signal when the volume was on its highest setting, making it impossible to pinpoint. Weak batteries were likely the cause of this malfunction. She searched the debris for three hours and dug multiple holes in the snow, but was forced to abandon her effort to find her husband as it got dark. She skied back to town solo. That evening Search and Rescue went to the scene and retrieved the body.

Four days later, a canine miracle happened when the dog dug himself out of the debris and walked back to Cooke City. Looking for his owners, he sat outside the door of the hotel they had spent the night at.

The slope angle averaged 35 degrees in the starting zone with the steepest part measuring over 40 degrees. The crown face was 1-4' deep and 800' wide and ran 250' vertical. The starting zone averaged a northwest aspect. The debris was split between two paths with the one the skiers were in being 50' wide. The debris in the creek bottom was 10-12' deep. US Classification of the avalanche is SS-AS-D2.5-R3.

Eric Knoff and Doug Chabot are forecasters at Gallatin National Forest Avalanche Center. At press time they are investigating another snowmobiler avalanche fatality that occurred near Cooke City on February 21.