Snowmobiler Triggered Avalanche
Henderson Ridge, Beartooth Mountains, outside Cooke City, MT
Gallatin National Forest
One person triggered, another person caught and buried, no injuries.

On January 17, 2014 a snowmobiler triggered a slide outside Cooke City on a northeast facing slope at 9,700 feet at the northern end of Henderson Ridge near Chimney Rock. The slide was approximately 500 feet wide, 300 feet vertical and broke 4-12 feet deep. The slope angles at the crown measured 36-50 degrees and the runout angle was 22 degrees. It was a large avalanche for this slope (HS-AM-O-R4-D3). The rider was buried, dug up, given CPR, revived and he rode away on his own sled. He and his machine were located on the right edge of the debris.

GPS Coordinates at toe:
N45.06017 W109.95098

Photos:
http://www.mtavalanche.com/images/14/cooke-city-avalanche-henderson-ridge
http://www.mtavalanche.com/images/14/cooke-avalanche-looking-down-slope
http://www.mtavalanche.com/images/14/cooke-avalanche-hard-slab-debris
http://www.mtavalanche.com/images/14/mt-henderson-avalanche-outside-cooke-city-11714

Video:
http://youtu.be/jiJD5DZM1io

WEATHER

Friday, Jan 17 was the third day without snowfall. Skies were mostly sunny with daily temperature fluctuations of teens F to highs in the mid twenties F. Winds were light to moderate from the west northwest (15-30 mph) at the weather station on Lulu Pass the three days prior to the avalanche. At the time of the slide (about 2:30 p.m.) temperatures were 25F under sunny skies with 10-20 mph westerly winds.

SYNOPSIS

Six very experienced riders (males, late 30s to early 40s) from North Dakota were out for their bi-monthly Cooke City ride. All are familiar with Cooke City and ride together frequently. Although they lacked avalanche training, the riders had an intimate knowledge of the snowpack from their frequent rides this season. One of the riders occasionally reads the avalanche advisory, but had not this day. They rode up Miller drainage and across Daisy Pass to access the saddle between Fisher Peak and Henderson Ridge. The ridge has a cornice line at the saddle which allows riders to jump off onto a slope below. Four of the riders dropped off the saddle into a bowl above Fisher Creek. Two others stayed behind.

At the bottom of the bowl one of the riders jumped on another's sled to test out its turbo. He ascended the looker's right side of the untracked bowl near the future right flank of the avalanche. Two-thirds of the way up the slope released when he rode over thinly covered snow, which was a trigger point for

releasing a deep slab avalanche. He was unaware he had triggered an avalanche until he got to the ridge and looked below and saw the debris.

The three riders below watched him ascend and witnessed the slope fracture. At the same instant the slope fractured the two other riders had already launched off the cornice. One of them landed on the breaking slab. If he had been two seconds later he would have hit the bed surface instead of an avalanching slope. The second cornice rider was far enough to the side that he was not caught.

Seeing the slope fracture and buckle below his sled, the rider made a quick decision not to deploy his airbag. He was close to the flank so he decided to try and throttle out the side of the avalanche, but he was hit with two waves of snow. The second wave threw him off the sled, carried him approximately 100 yards downhill and completely buried him.

The victim remembers trying to swim, but he could not move his arms. He felt like he only slid 5-10 feet downhill. He tried to stay calm, control his breathing and called for help twice. The next thing he remembered was the feeling of lying in bed trying to sleep as people annoyingly shook him to wake him up. He did not feel pain but peacefulness.

The three riders below rode away from the approaching avalanche, but two had visual contact with the victim and both had a last seen point. When the slide stopped the three at the bottom were joined by the other cornice jumper and began searching. The rider who triggered the slide needed extra time to circle back to the bottom.

The four rescuers had avalanche gear (Tracker 2 beacons, shovels and probes), no formal avalanche training but they were well read and practiced. One rider put his beacon on receive while the others turned theirs off and assembled shovels and probes. They could see a small piece of ski from the buried sled sticking out of the snow which, together with the last seen point, gave them an accurate trajectory of the victim. When the beacon indicated closeness to the victim they began probing. On the 6th poke they hit his boot and began digging. The victim was approximately four feet under the surface, lying on his back, head downhill about 25 feet above his sled. They could not unbuckle his helmet so they cut the strap off. He was not breathing and “Smurf blue,” drooling and bleeding from the mouth. Five to seven minutes had elapsed.

One of the riders had CPR training from a Lamaze birthing class he took with his wife years prior. Without discernible breathing and his cold hands unable to feel for a pulse he laid the victim flat and began CPR compressions. One and a half to two minutes later the victim began breathing, but his eyes remained closed and he was unresponsive. A few minutes later he opened his eyes and said, “What took you guys so f***ing long!” The victim had no serious injury, just a blow to the chin, and rode back to town on his own sled. He was “ringy” overnight but had a clear head in the morning. His sore chest the next day was not enough to stop the group from riding again.

The debris was estimated to be 15 feet deep in the centerline of the toe. Near the flanks it was 4-6 feet deep.

SNOWPACK

The avalanche occurred on a mostly shaded northeast facing slope at 9,700 feet. The slope was heavily wind-loaded. The snowpack around Cooke City is consistently seven feet deep. The avalanche broke 50 cm off the ground on facets (1F-) with a 1F+ to P hardness wind slab over it. The site investigation determined a rocky, thinner area of the slope was the spot from which the avalanche was triggered.

Four things that made a difference:

1. Gear: They all had proper gear and knew how to use it.
2. Practice: They knew how to perform a rescue in real life/death circumstances. They worked together and kept their cool.
3. Mental and physical toughness: Doing whatever was needed to get the job done along with a survival attitude saved the day, and this includes the victim's fortitude.
4. Luck: The timing of his landing on the slope was so perfectly bad it's hard to believe this could even happen. Once he was swept off the machine luck played a role in his survival along with the quick work of his friends.

The slide was investigated by Doug Chabot, Brad Bolte and Kevin Freund on Sunday, January 19, 2014. Doug interviewed one of the rescuers. Brad Bolte interviewed the victim.

Any questions regarding this report should be directed to Doug Chabot.

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