

SCOTCH BONNET MOUNTAIN AVALANCHE FATALITY
Gallatin National Forest
3 January 2010

SYNOPSIS

Two snowmobilers were riding on the south face of Scotch Bonnet Mountain, near Lulu Pass outside Cooke City when one of the riders triggered an avalanche. He was caught and fatally buried. The avalanche released on a south facing slope in a narrow opening bordered by thick trees. The slope angle was approximately 35 degrees at its steepest and the runout angle was 30 degrees. The crown face was 2 feet deep and the slide was 100 feet wide and ran 500 feet vertical. US Classification of the avalanche is HS-AMu-D2-R3-O.

GPS Coordinates

Crown: N 45.07115, W 109.94463

Victim Location: N 45.06956, W 109.94456

Toe of Debris: N 45.06866, W 109.94560

Elevation of crown is 10,054 feet.

PHOTOS

<http://www.mtavalanche.com/photo>

VIDEO CLIP

<http://www.youtube.com/watch?v=J8EvzVVBWs>

WEATHER

The snowfall and temperature data for this incident are from the Fisher Creek Snotel site less than ½ mile away. Wind data is from the GNFAAC weather station at Lulu Pass 1 mile to the north.

No snow fell on Sunday, winds were 5-10 mph out of the west and temperatures the time of the accident were 21F. Since Thursday morning, 31 December, Fisher Creek SNOTEL measured 1.1 inches of SWE and temperatures fluctuated between lows of 10F to highs of 25F. On Friday westerly winds blew 20-50 mph and on Saturday they dropped to 15-30 mph also out of the west.

AVALANCHE

The victim, A1, was riding with his friend B2. They frequently rode the mountains surrounding Cooke City and were familiar with the terrain. They had been in the area since Friday (January 1) which is when they last read the avalanche advisory. They knew the danger was rated HIGH. They were both expert riders and had avalanche gear. They both attended a one hour avalanche awareness talk two years ago in Billings and had practiced avalanche rescue techniques regularly. They had talked to local riders who

triggered small slides on Saturday. B2 described themselves as riders who like to boondock (play in low angled-trees) and not necessarily highmark.

Around noon on Sunday, January 3rd, B2 and A1 were at the cabin on the Lulu Pass groomed trail. A1 went up to play on a hill that they frequent. After a few minutes B2 went up too. The terrain is thick trees at the bottom opening up to a narrow, 75-100 foot wide run extending up the slope for approximately 1,500 feet. A few mature trees are on the slope with dense trees bordering the avalanche path.

B2 saw A1 about half way up the hill standing in the snow at a spot where the opening narrows and the terrain gets steeper. There were many old snowmobile tracks on the hill, all turning back downhill where A1 was standing. To B2 it looked like A1 hit an old snowmobile rut which bucked him off the sled. A1 had his helmet off and was getting his sled unstuck from the old track. B2 was about 120 feet away when he turned his sled around and started to ride back down the slope. A few seconds later he saw snow going by him and then he felt his sled getting lifted up. He was being pushed toward trees, but hit the throttle and accelerated for 60 feet to get out of the avalanche. He turned around, determined that A1 was buried, rode up to the toe of the debris and started his rescue.

B2 pulled his helmet off, started yelling A1's name and began his beacon search. B2 was walking/crawling up the debris to get a signal. He watched the numbers go down, but at 18 they went back up again to read 22. He knew A1 was behind him. He backed up, did a grid search and when it was reading 4.5 he did a fine search. He took his pack off, assembled his probe and immediately struck A1. He left the probe in, began digging and uncovered his limp hand within 5 minutes of searching. He yelled for help.

Two other riders were at the cabin and heard B2's cries. They went to the scene and immediately helped dig. A1's abdomen was wrapped around a small tree. The digging was slow because there were many tree branches entangling him. Some had to be cut away. They extricated his head and most of his body and began CPR with A1 still on his side. They were unable to lay him flat because his arm was still buried, and they couldn't get his pack off. After 40 minutes A1 was completely free of the snow. He was never revived and the cause of death was trauma.

SEARCH AND RESCUE

Cooke City Search and Rescue was notified of the avalanche and buried rider at 12:30pm. They immediately responded and brought the body to town.

SNOWPACK

Mark Staples and I dug a snowpit in the crown of the avalanche. There was 130 cm of snow. The avalanche released 58 cm off the ground on a 6 cm thick layer of 2 mm faceted grains. Above this weak layer was 40 cm of 1-finger to Pencil hardness slab capped by 15 cm of new snow. The weak layer of

facets is prominent on all aspects and elevations around Cooke City. I had dug two snowpits seven days earlier on both sides of this slope. Stability test results showed clean fractures on this layer with scores of ECTP17, Q1; ECTP24, Q1; CT18, Q1x2.

The GNFAC issued an Avalanche Warning for the Cooke City area the two days prior to the avalanche. Without new snowfall the warning was removed Sunday morning. For Sunday, 3 January, I rated the avalanche danger HIGH on all wind-loaded slopes and on any slope steeper than 35 degrees. Lower angled slopes had a CONSIDERABLE danger.

Avalanche Advisory: <http://www.mtavalanche.com/advisory/10/01/03>

Snowpit Profile: <http://www.mtavalanche.com/images/10/snow-pit-profile-scotch-bonnet-avalanche-fatality>

Direct any questions regarding this report to dchabot@fs.fed.us or 406-587-6984.

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