

Truman Gulch Avalanche Accident

1 skier caught, partially buried and injured

Bridger Range, MT

Custer-Gallatin National Forest –December 29, 2017

Synopsis

On Friday, December 29th 2017, a group of 3 skiers exited the Bridger Bowl Ski Area west boundary to access the backcountry terrain in Truman Gulch. The group skied one run and climbed with skis and skins back to the ridge dividing backcountry and ski area. They skied a second run adjacent to their ascent route which they ascended again on the same track. Then the group split up. Skier 1 skied a gully north of their previous run. The other two skiers went further north towards the ridge between Truman Gulch and Jones Creek. The solo skier (1) dropped into a south-southwest facing slope and triggered an avalanche two turns into the run. He was caught and carried approximately 1200 vertical feet and partially buried and suffered a knee and wrist injury. He was able to remove himself from the debris and call the other two skiers on their cell phones. Skier 2 skied down to skier 1 while skier 3 skinned back up to the ridge to get help at the ski area. The ski patrol was informed of the accident at approximately 1530 hrs. Members of Bridger Bowl ski patrol mobilized and were on scene in just over an hour. The patient was packaged in a rescue litter and transported down Truman Gulch. Members of Gallatin County Search and Rescue skied and snowmobiled up the trail to meet the Bridger Bowl patrollers and assisted in the evacuation. The patient was brought down to the trailhead and loaded into an ambulance at 1900 hours. The avalanche is classified: AS-SS-O-R2.5-D3.

GPS Coordinates:

Location of victim/top of debris pile: 45°49.198'N, 110°56.243'W

Approximate location of crown: 45°49.334'N, 110°56.017'W

Photos:

<https://www.mtavalanche.com/images/17/truman-gulch-crown-skier-triggered>

<https://www.mtavalanche.com/images/17/truman-gulch-crown-skier-triggered-photo-2>

<https://www.mtavalanche.com/images/18/debris-skier-triggered-slide-truman-gulch>

Video:

<https://youtu.be/7ETCg89ANx0>

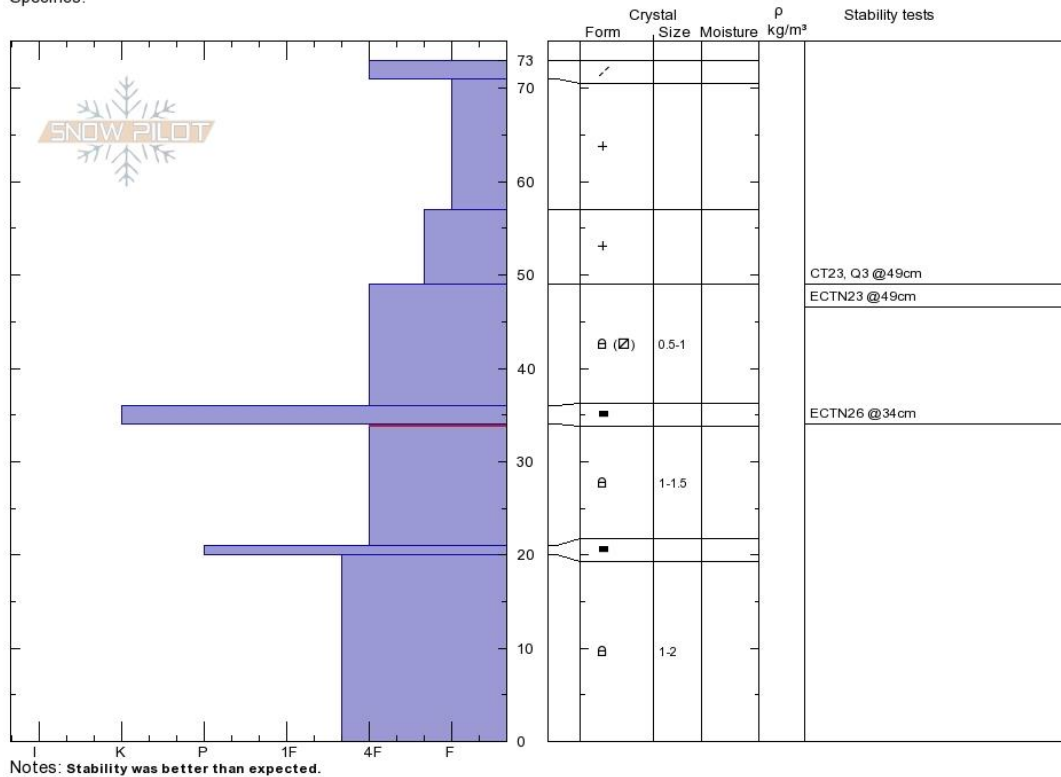
Weather

Weather data was collected from Bridger Bowl weather stations less than one mile from the accident site. The day of the accident, heavy snow impacted the area. By the time the accident, 10-12" of new snow had accumulated over a twelve hour period totaling over 1" of snow water equivalent (SWE), winds along the ridge were 20-30 mph out of the west and temperatures were in the 20's F.

Snowpack

The snowpack was rapidly loading during the time of the accident. Nearly one foot of new snow equal to 1" of SWE had accumulated in 12 hours, heavily stressing a layer of facets buried two feet under the surface. This layer formed during a high pressure period from December 6th to December 13th when no precipitation fell in the Bridger Range. This layer appeared to be gaining strength and was not producing unstable results in stability tests. However, this avalanche clearly indicated that a rapid and heavy load with a proper trigger was enough to push this weak layer past its breaking point.

West Side Bridgers	Eric Knoff	Stability: Good	HS73	Layer Notes
Bridger Range	Thu Dec 28 12:00 2017	Air Temperature: -6°C	Stability Test Notes	21-34: Problematic layer
MT	Co-ord: 45.82308N, -110.93535W	Sky Cover: OVC		
Elevation: 8000 ft	Slope Angle: 26°	Precipitation: S-1		
Aspect: 170°	Wind Loading: no	Wind: SW Light Breeze		
Specifics:				



The avalanche danger was rated Considerable on wind-loaded slopes in the Bridger Range:
<https://www.mtavalanche.com/advisory/17/12/29>

Avalanche

All three skiers were experienced backcountry skiers and familiar with the terrain. They accessed the backcountry in Truman Gulch by hiking the Ridge at Bridger Bowl and exiting the ski area boundary to the west off the ridge. After taking two runs together, skier 1 split off from the group to ski a different but adjacent area, a gully to the north of their previous run. The other two skiers went further north towards the ridge between Truman Gulch and Jones Creek. The solo skier took two turns off the ridge and triggered the slide. He was caught and carried approximately 1200 vertical feet and partially buried. The crown of the slide was on a south-southwest facing slope at approximately 8,000 ft. We were unable to get to the crown because of avalanche danger, so the exact dimensions of the avalanche are unknown. The crown is estimated at 2 feet deep and 300-400 feet wide. The avalanche likely failed on a layer of facets buried two feet deep. Skier 1 suffered a knee and wrist injury. The avalanche is classified: AS-SS-O-R2.5-D3.

Rescue

The skier caught in the avalanche was able to call and communicate via cell phone with the other two skiers. One skier descended to his location on the debris, while the other hiked back to the ridge to get help. The Bridger Bowl Ski Patrol was informed of the accident at approximately 1530 hrs. Members of the ski patrol participated in the rescue as Gallatin County Search and Rescue (GCSAR) members. They assembled a toboggan and headed to the scene at approximately 1615 hrs. During this time, other members of Gallatin County Search and Rescue gathered at the SAR cache in Bozeman. Two members of GCSAR attempted to reach the accident site via Life Flight Helicopter, but turned around due to poor visibility. The initial response team from Bridger Bowl arrived on scene at approximately 1645 hrs. The patient was packaged into the toboggan and transported down Truman Gulch towards the trailhead. Meanwhile, the GCSAR ground team ascended Truman Gulch from the trailhead approximately three miles from the accident site. The GCSAR ground team consisted of strong backcountry skiers and snowmobilers. At approximately 1800 hrs, rescuers from the ski area and the two skiers met the other GCSAR team less than two miles from the trailhead. The teams worked together to transport the patient the remaining distance to the trailhead where the patient was loaded into a waiting ambulance at 1700 hrs.

Investigation

Alex Marienthal and Doug Chabot of the Gallatin National Forest Avalanche Center went to the accident site the next day, December 30, 2017. Due to unstable conditions they were unable to

access the crown or debris. Details of the event were gathered from interviews with the skiers and rescuers.

Please contact Doug Chabot, Eric Knoff, or Alex Marienthal at the Gallatin National Forest Avalanche Center if you have questions:

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