

March 12th, 2023 - Idaho - Observation Peak, Sawtooth Mountains

Published by the USFS Sawtooth Avalanche Center

Location:

Place	Observation Peak, Stanley Lake Creek Drainage, Sawtooth Mountains
State	Idaho
Date	3/12/23
Time	12:22 PM
Summary	1 snowmobiler caught, fully buried, and killed

Numbers:

Caught	1
Fully Buried	1
Injured	0
Killed	1

Avalanche Details:

Type	HS
Trigger	AM
Subcode	u
Size - R	R4
Size - D	D2
Weak Layer	Likely small facets, possibly above a crust
Sliding Surface	O - Within Old Snow
Description	HS-AM-R4-D2-O
Aspect	N
Elevation	8800 feet
Slope Angle	Estimated 35 degree starting zone
Width	500 feet
Depth	3-4 feet
Vertical	150 feet
Terrain	Small opening sparse trees, short path

Note:

USFS Sawtooth Avalanche Center (SAC) staff were unable to visit the accident site due to a major storm and increased avalanche hazard following the accident. Details are based on interviews with members of the involved parties, digital mapping tools, and observations from nearby locations.

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Incident Summary:

Two separate groups of three riders unintentionally met at a small trailhead 5 miles northwest of Stanley, ID (Fig. 1). Both groups had planned to ride into the same area. They decided to break trail as one group, switching their family band radios to a common channel before leaving the trailhead. Some group members previously knew each other, but they were not frequent riding partners. The new group consisted of five males and one female. All were advanced to expert riders. The members of the victim's group will be referred to as Riders 1 (age 35), 2 (age 43), and 3 (age 29). The members of the other group will be referred to as Riders 4 (age 29), 5 (age 29), and 6 (age 27).

The group's route initially followed the path of a summer road and then a summer trail. After approximately 8 miles, they left the summer trail and followed ridges and gullies leading up to the large, gently-sloping basin on the NE side of Observation Peak (9,151'). The riders took turns breaking trail, occasionally getting stuck and stopping to get unstuck while other riders leapfrogged ahead.

As the group climbed toward the lake, Rider 6 got stuck and Riders 4 and 5 stopped to assist. Riders 1, 2, and 3 continued up toward the small lake 500 feet below the summit of the peak. At this point in the day, the group had not seen any recent avalanches or experienced any obvious signs of instability.

Once at the lake, Riders 1, 2, and 3 stopped below the final climb that leads to the east ridge of Observation Peak (Figs 2, 3, and 5). Rider 1 executed a climbing sidehill to gain the ridge, crossing the slope that would eventually avalanche. Rider 1 stopped on the ridge and watched as Rider 2 successfully made the same climb, stopping near Rider 1. Rider 3 followed roughly the same route as Riders 1 and 2 watched. Rider 3 had almost completed the climb when the avalanche released. Simultaneously, Riders 1 and 2 turned to continue riding toward the summit above, thinking that Rider 3 had made it across the climb safely.

At the same time, Riders 4, 5, and 6 successfully got Rider 6 unstuck. Riders 2 and 4 both had GPS systems equipped on their snowmobiles which allowed them to see each other's location. Rider 4 used this to navigate towards Rider 2, with Riders 5 and 6 following behind. As they approached the location indicated by the onboard GPS, Rider 4 noticed a large, fresh avalanche. The debris from the avalanche was still moving when Rider 4 arrived.

Rider 4 rode to the toe of the debris and immediately got on the radio, indicating that there was a "big slide, big slide", and asking if Riders 1, 2, and 3 were clear. At this point, Riders 1 and 2 thought that their group was clear, and they reported that over the radio to Rider 4. A photo taken at this point is timestamped 12:22 PM.

Rider 4 could only see two tracks exiting the crown. He turned his transceiver to search and immediately got a signal of 60 meters, leading towards the debris. He instructed everyone to turn their transceivers to search mode and began following the signal, calling out the numbers reported by his transceiver as they did. Riders 5 and 6 followed. On the surface, there was no evidence of Rider 3 or his snowmobile. Concurrently, Riders 1 and 2 realized that they were missing Rider 3, and they turned around and rode down to the bench above the crown. They were uncertain how to proceed down to the debris without possibly endangering Riders 4, 5, and 6 below, so they initially stayed in their position above the avalanche crown.

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Riders 4, 5, and 6 quickly honed in on Rider 3's transceiver signal, getting a minimum signal of 1.8 m. They were probing to pinpoint the buried victim a few minutes after the avalanche released. They had several probe strikes on the buried snowmobile before successfully striking Rider 3's body. They began digging, initially finding portions of the snowmobile before finding Rider 3's helmet. Rider 3 was found face down, with his head below his feet. His head was buried an estimated 6-7 feet deep.

By this point, Riders 1 and 2 had descended the crown of the avalanche onto the slick, firm bed surface. The group worked to extricate Rider 3 from the debris. They removed his helmet and noted his skin was blue. Snow was densely packed into his helmet and airway. Rider 3 needed to be mostly uncovered before he could be pulled from the snow. Rider 3 was placed on a flat surface, and Riders 1, 4, and 5 took turns performing CPR. They continued resuscitation efforts for an estimated 5-10 minutes but were unable to revive him. Resuscitation efforts stopped at 12:41, 19 minutes after the avalanche occurred. The coroner later concluded that Rider 3 died from traumatic injuries that were sustained in the accident.

Avalanche and Terrain:

The avalanche failed on a north-facing slope at 8,800' near the summit of Observation Peak (9,151') in the Sawtooth Mountains of central Idaho (Fig. 2). The slope is short and sparsely treed with a convex rollover at the top. Members of the party estimated the maximum slope angle at the crown was around 35 degrees; this aligns with estimates of the slope angle from digital mapping tools.

The avalanche crown was about 500 feet wide and 3-4 feet tall (Fig. 3). The avalanche ran a maximum of 150 vertical feet. Much of the debris stopped a short distance down the bed surface where the slope angle decreased. Large blocks of the slab remained intact. All evidence indicates this was a hard slab avalanche. Sparse tree cover appeared to arrest or inhibit the flowing debris downslope of the trees, and the avalanche entrained snow where the slope was free of trees. The victim appeared to be buried in one of the deeper fingers of the debris (Fig. 4). The bed surface of the avalanche was described as slick and icy by the members of the party.

Weather and Snowpack Summary:

This area experienced an extended dry period from early January to mid February. Multiple layers of small facets—associated with sun, rain, or rime crusts on many slopes—formed throughout the forecast area. Evidence indicates a layer of near surface facets or a crust and facet combination buried in mid-February contributed to this avalanche.

A prolonged snowy period began on February 18th. Between February 18th and the time of the accident, 4.9-5.2" of snow water equivalent (SWE) was recorded at the Banner Summit remote weather stations 12 miles to the NW and 1700' below the accident site. In the two weeks prior to the accident, 4" of SWE was recorded at Banner Summit, and 1.5-1.7" of SWE (17" of snow) fell in the preceding 48 hours. The February and March snowfall had settled into a dense slab by the time of the accident, even in sheltered terrain.

Temperatures were cool throughout most of the Feb-March snowy period, with daytime highs in the teens F and overnight lows in the single digits F. In the 48 hours before the accident, temperatures were in the teens and 20s F.

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The slope that avalanched is exposed to wind-loading, and ridgetops winds blew at moderate speeds during the storm preceding the accident (data from Canyon Creek remote weather station 8 miles NW at a similar elevation). The group reported that the snow did not feel obviously wind affected on this slope, but they did encounter wind-stiffened snow in places earlier that day.

On the day of the accident, skies began as partly cloudy and became mostly cloudy by evening. Temperatures reached the mid to upper 20s F, and winds were light.

Discussion:

Avalanche accidents are traumatic events that have lasting consequences for all involved. Our deepest condolences go out to everyone who has been affected by this event. We offer these thoughts with the hope of helping to avoid future accidents. We in no way intend to place blame on any of the involved parties.

- **Gear and Rescue:** This group was equipped with the recommended safety and rescue gear, including transceivers, probes, shovels, and airbags. The victim was wearing an airbag, had the trigger out, but did not deploy it. The sub-group (Riders 4, 5, and 6) saw the avalanche as it stopped moving and called riders 1, 2, and 3 via radio immediately. The rescuers were trained. They quickly located and uncovered the victim, but they could not resuscitate him. Despite sound communication and a quick rescue, the rescue was not successful.
- **Avalanche Forecast:** On the day of the accident, The Sawtooth Avalanche Center rated the Avalanche Danger for this area as CONSIDERABLE on all aspects and elevations due to Wind Slab and Persistent Slab avalanche problems. The Bottom Line read: *“Dangerous avalanche conditions exist. Human-triggered avalanches involving dense, 1-4 foot thick slabs of snow are likely. Avalanches may be very large and destructive and can be triggered from long distances away from steeper slopes. Conservative terrain selection is encouraged today.”* The Problem section read: *“Managing persistent slab problems is difficult. If you want to completely eliminate the risk of triggering one of these beasts, you’ll have to avoid avalanche terrain. You can reduce (but not eliminate) your risk by choosing gentler slopes that are sheltered from the effects of the wind.”* This group did not read the forecast that day, but they were familiar with the conditions. They did not experience any signs of instability (recent avalanches, snowpack collapsing, snowpack cracking) until the fatal avalanche. They rode in a nearby area the day before the accident and did not see any recent avalanches or signs of instability. When facing Persistent Slab avalanche problems, riders may not receive clues that a slope may be unstable, especially when dense, 3+ foot thick slabs overlie the persistent weak layer.
- **Consequences:** The slope that avalanched was short and appeared relatively benign. This tragedy highlights how the consequences of being caught in an avalanche can be catastrophic on relatively small, innocent-looking slopes.

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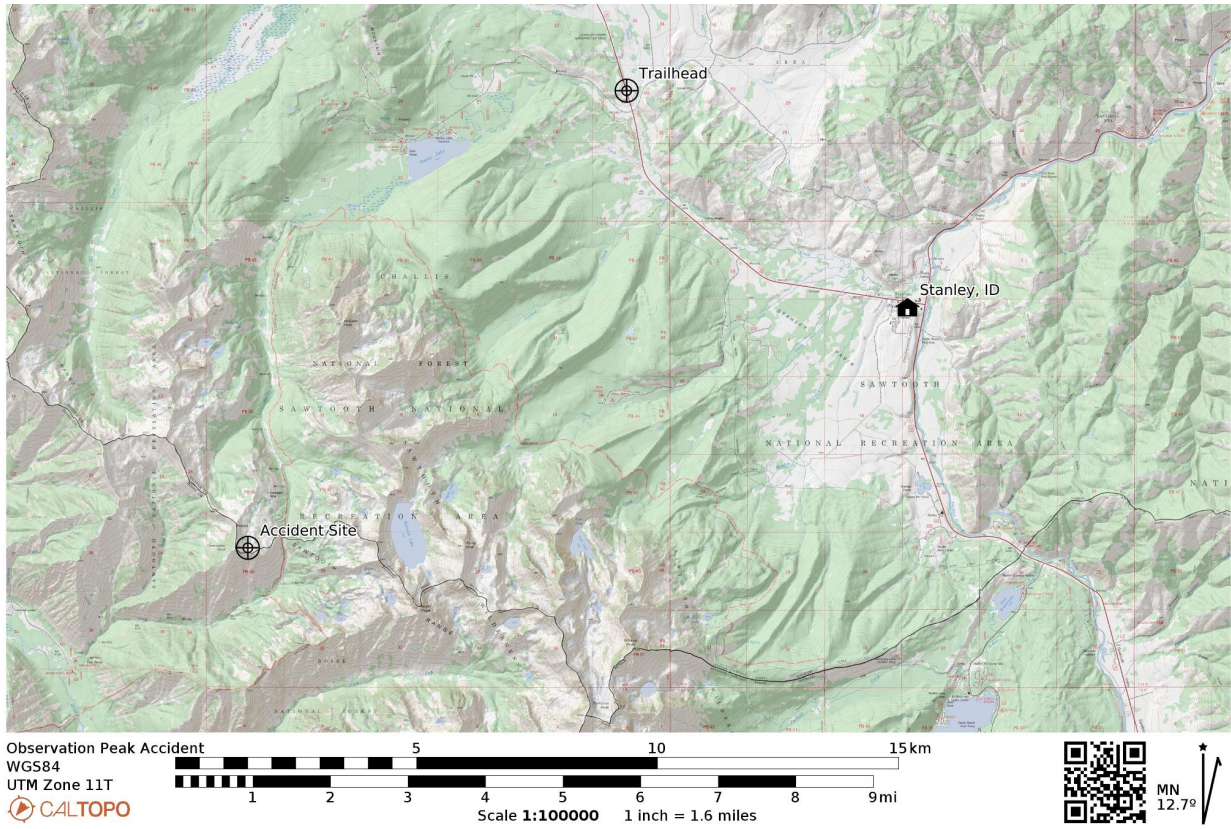


Figure 1: The location of the accident site and trailhead relative to the town of Stanley, ID.

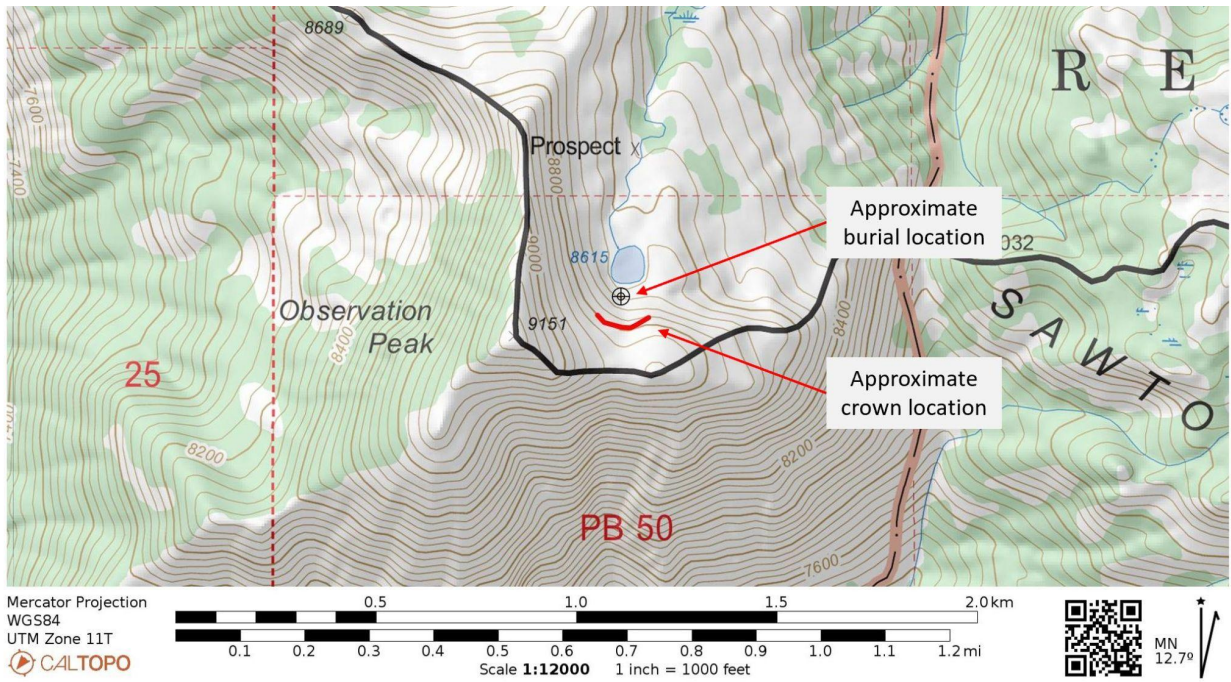


Figure 2: The accident site and approximate locations of the crown and the victim.

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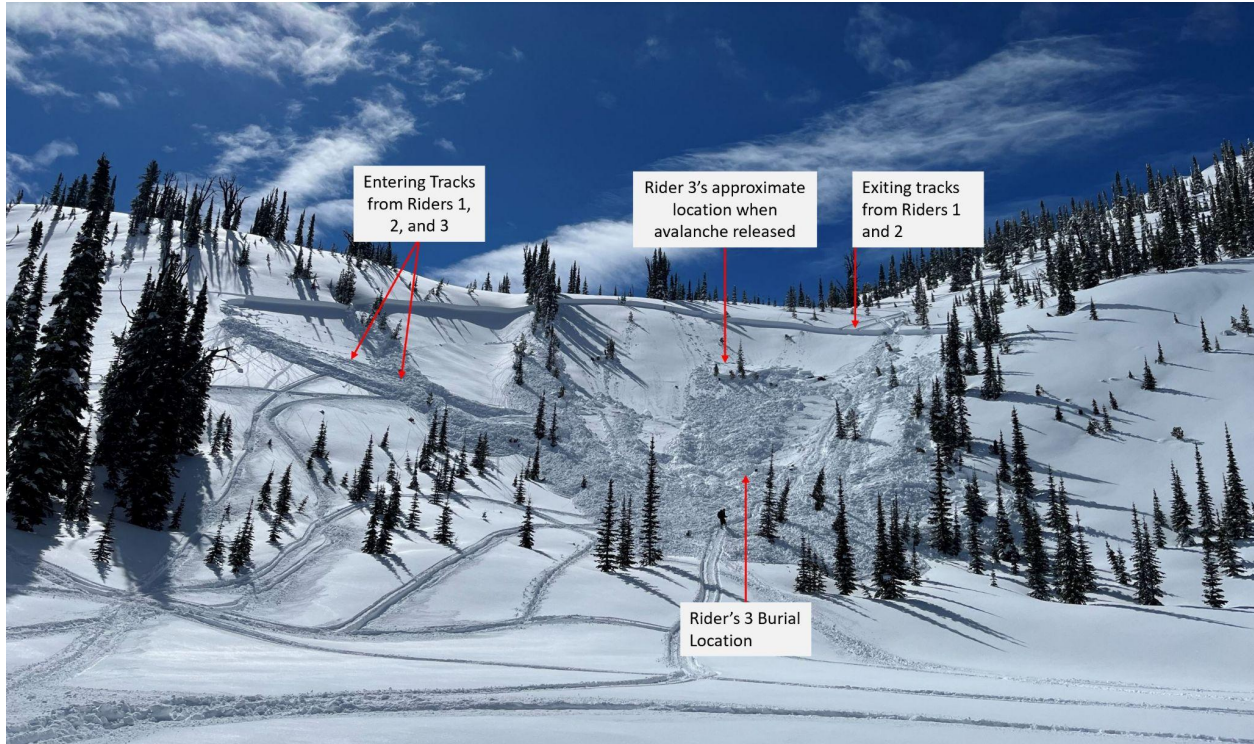


Figure 3: Crown and debris of the avalanche with the relative locations and tracks of Riders 1, 2, and 3 marked.



Figure 4: Debris and the burial location of Rider 3.

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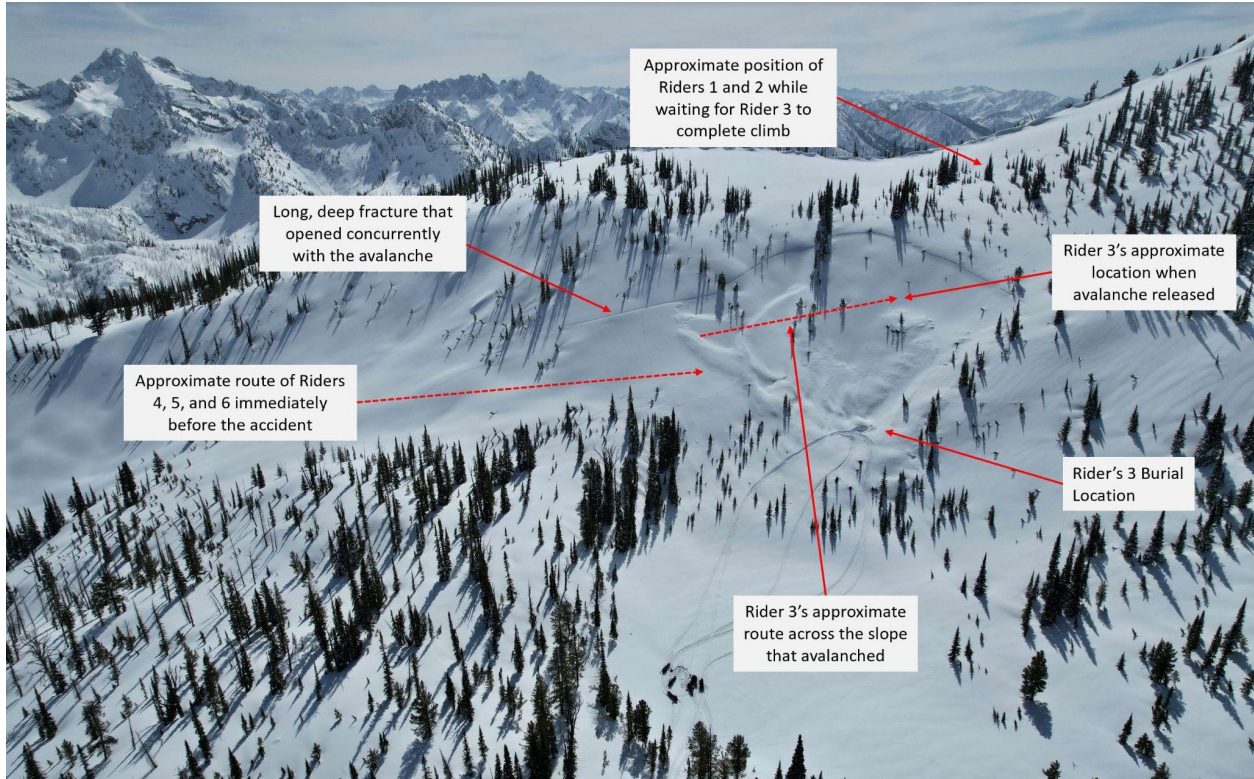


Figure 5: Photograph taken 6 days after the accident showing the locations and paths of the riders relative to the slope that avalanched.