

of three who had witnessed the slide joined them at the site. These three—Art, Sherry, and Shawn Foster—were also equipped with beacons, probes, and shovels. The rescuers performed a beacon search, and within minutes they had pinpointed the burial site and started digging. They also called 911, and the sheriff dispatch logged the call at 16:48.

It took some time to dig down to the victims, who were buried five to six feet deep and almost touching each other. They had been buried about 15 to 20 minutes. Rory Buckallew was wearing a full-face helmet, and he was breathing when uncovered. Byron Cameron was not wearing his helmet at the time and was not breathing. The rescuers immediately began CPR on Cameron.

The ALERT helicopter arrived fairly quickly, at about 17:30. It could not land at the site on the steep terrain, but did drop off its paramedic to take over resuscitation efforts on Cameron. After an hour of resuscitation, the paramedic made contact with the ER via cell phone, and the doctor on duty advised him to cease efforts.

AVALANCHE DATA

The avalanche ran on a south-facing slope at an elevation of 5,200 feet. The crown was about 300 feet wide and was two to three feet deep. The avalanche fell 520 feet vertical, and was classified as SS-AFu-R3-O.

**Persistent Slab
avalanche**

Sometime in the past, a hard ice crust had formed due to melt and re-freeze on this south-facing slope. Additional snow then fell and covered the crust, and this layer of snow, in time, metamorphosed into facets. Further storms put two to three feet of soft-slab snow on top of the faceted layer. Now, all the necessary ingredients for an avalanche were in place—slope, slab, and weak layer. The snowmobilers provided the trigger.

COMMENTS

A safety rule in highmarking is to not come to the aid of a stuck rider, because it increases the chance of triggering an avalanche and increases the number of potential victims. These men were not highmarking, but the scenario was the same—a second rider came up to help the first. This, coming to help a stuck rider, is a common scenario for snowmobile accidents. The snowpack couldn't handle it, and it cost a life.

On the positive side, the group was prepared for an avalanche rescue, and that paid off by saving one young man's life. Perhaps a full-face helmet would have provided the necessary air space for Cameron as well.

DOG LAKE, WEST OF BRIGHTON SKI RESORT, UTAH

20020316b

March 16, 2002

Two sidecountry snowboarders caught, buried, and killed

WEATHER AND SNOWPACK CONDITIONS

A major storm hit the Wasatch Mountains from March 12 to 15. Some of the resorts in the Cottonwood Canyons received over five feet of snow. The Utah Avalanche Center posted a High backcountry avalanche danger rating, and a fairly widespread cycle of deep, large avalanches occurred. By March 16, the cycle of natural avalanches had ended, and the avalanche danger was lowered a notch to Considerable. Weather on the day of the accident was foggy with light snow showers.

ACCIDENT SUMMARY

On Saturday, March 16, 12 young snowboarders rode the Crest Lift at Brighton Ski Resort and headed into the backcountry by hiking west along Pioneer Ridge. The group intended to build a jump in the Dog Lake area, so six members of the group were carrying shovels. They passed the signs at the resort boundary, which indicated that there was no avalanche control or ski patrol services beyond the sign and that the backcountry avalanche danger was rated Considerable by the Utah Avalanche Center.

After traveling along the ridge, they rode from the top of the peak marked as 10,354 feet down a steep north-facing chute to an elevation of around 10,000 feet and regrouped.

Inadequate
rescue
equipment

Two of the men, Richard Jones (19) and Allen Chatwin (18), said that they preferred to hike up higher so that they could more easily traverse to the jump site. After hiking up, they strapped on their boards again and began traversing a very steep slope, heading west, while the others either waited off to the side or descended the rider's right side of the slope. While the two men above were on a very steep part of the slope near a shallow rocky area (estimated at 50 degrees), they triggered the avalanche. It fractured above them, taking them quickly down the slope. No other party members were caught, and none had avalanche transceivers or probes.

RESCUE SUMMARY

The remaining 10 party members descended to try and find their friends, and at 12:36, one party member called 911 on his cell phone. There were no surface clues, so those with shovels dug some random holes, with no luck.

Patrollers from both Alta Ski Area and Brighton responded. The Alta patrollers arrived first, as they could easily traverse to the site from the top of Alta's Superior Lift. They arrived about an hour and a half after the accident. Eventually, avalanche search dogs from Alta located the victims. One victim was two to four feet deep, in a prone position, and had an ice mask around his face. The other was about two feet deep and was wrapped around a tree.

Neither of the victims responded to CPR and the coroner's report later indicated that they had died from asphyxiation.

AVALANCHE DATA

Persistent Slab
avalanche

The avalanche ran in an open bowl that faced east-northeast at an elevation of about 10,000 feet. It fell 500 feet vertical. The starting zone was very steep—between 40 and 50 degrees. The crown was 300 feet wide and averaged 2.5 feet deep, but it was eight feet deep at one point. The avalanche was classified as HS-ARu-R4-D3-O.

COMMENTS

Ski resorts on public land in the United States have open boundary policies, as the public has a right to access public land. Signs at resort boundaries clearly inform the public that there is neither avalanche control nor ski patrol services outside of their boundaries. The vast majority of people who leave ski area boundaries to recreate in the backcountry do it safely and without incident. The wise and educated ones carry avalanche rescue beacons, shovels, probes and use safe travel techniques to minimize their risk.

This party of young snowboarders did not carry any rescue gear, and from interviews after the accident, they had little, if any, avalanche education. They were simply trying to have fun but were unprepared for the seriousness of the backcountry

avalanche conditions. Lastly, it was clear from the victims' traverse of the avalanche starting zone that they did not know the dangerous path they were on.

PAGODA PEAK, SOUTHWEST OF STEAMBOAT SPRINGS, COLORADO | March 17, 2002

20020317

Three snowmobilers caught; one partly buried, one buried and killed

WEATHER AND SNOWPACK CONDITIONS

In March, the snowpack in the Colorado mountains remained shallow and weak—conditions more typical of mid-winter than spring.

(For the weather history of the winter of 2001-02 in Colorado that contributed to this avalanche, the reader should refer to the discussion in 20020201.)

ACCIDENT SUMMARY

Pagoda Peak, at 11,120 feet elevation, is a distinctive and solitary peak in the Flat Tops of northwest Colorado. It is located about 36 miles southwest of Steamboat Springs.

On Sunday, March 17, a group of seven riders was highmarking on a large, open slope on the east side of Pagoda Peak. At 13:30, three riders were on the slope, including Daniel James Ovenden (30). This group triggered an avalanche, which caught all three. One man was able to escape without being buried, another was partly buried, and Ovenden was carried down and completely buried. This party of seven had no avalanche rescue gear.

**No rescue
equipment**

RESCUE SUMMARY

The rest of the party and the two survivors began a search for Ovenden but saw no clues. They made a 911 call, and both Routt County Search and Rescue and Rio Blanco County Search and Rescue responded. Because of the remoteness of the area, however, it took several hours for search-and-rescue teams to arrive on site. Darkness was falling when rescuers located Ovenden's body under three to four feet of snow at 20:00. A searcher apparently located the victim with a probe. He was still on, or next to, his snowmobile when uncovered.

AVALANCHE DATA

The avalanche released on the east side of Pagoda Peak, with the fracture a little below 11,000 feet elevation. The avalanche was classified as SS-AMu-R3. The avalanche was 300 to 400 feet wide by 400 feet vertical. No fracture depth was recorded.

COMMENTS

This avalanche is another instance of snowmobilers highmarking but not being prepared for the consequences of an avalanche. As mentioned in the narratives of many other avalanches involving highmarking, riders must understand that they are playing on a slope that can slide when snow conditions are unstable. To give them a safety advantage, they should be riding the slope one at a time, and all riders should have—and know how to use—full rescue gear, which includes beacons, probes, and shovels. Airbags, once they came into common use, have added an extra safety margin.