

Tobacco Root Mountains Avalanche Accident Report 10.31.09

Halloween morning 3 skiers departed Bozeman to ski Granite Peak in the Tobacco Root Mountains. After parking at the snow line we skinned for 45 minutes to reach the base of the Granite peak area. We stopped on a 30 degree slope and dug multiple pits to determine the snow stability. We found the layers to be bonded and stable and we continued on.

Upon reaching the base of the peak above timberline we decided to climb the south shoulder of Granite to ski the far skier's right of the East Bowl. Our group was skinning up when we found it easier to boot pack up the wind buffed slope. We skied the wind buffed southern side of the East Bowl with no incident and then hit the lower treed section and found good powder turns with no signs of instability.

When we reached the skin track we decided to climb up and do a second run as the skiing was good on both the wind-buffed peak as well as the powder in the trees. We climbed to the flat area below the peak again and decided to boot up the skier's left side of the East Bowl to try and summit the peak. Based on the data collected from our snow pits and the successful first line we felt confident in the stability and continued up the bowl. We were spaced at 20-30 feet apart climbing up the same boot pack. When we reached three quarters of the way up the bowl we stopped to discuss the changing snow pack. We talked about the different feel of the snow pack we were encountering compared to the lower section. We decided to continue up to the exposed talus rocks 30 feet above us and decide our next move from that safe spot.

Upon reaching the talus we regrouped and decided that the area of concern we had just gone through was an isolated pocket of steeper terrain and decided to make a push for the summit. We set out again climbing on the same boot pack. When the lead climber was approximately 100 feet from the summit the entire slope whoomped and propagated 150+ feet wide, 20 feet above him leaving a 12-18 inch crown. The hard slab snow caught all three of us and dragged us over exposed talus for ~300 feet until we were strained out of the slide on top to the rocks. The entire slide took less than 10 seconds, the whoomp sounded like dropping a stack of plywood flat onto a hard surface and the slide sounded like a jet engine taking off. Luckily we were stopped by the talus and escaped the 1000+ foot slide that ran out on the flat area below the peak. None of us were buried however we all sustained massive bruising, scrapes and one skier cracked two ribs. We collectively lost three poles and broke one binding so that one skier had to ski all the way out on just one ski.

We retreated down the slide path to a safe place on flat area below the peak. From that vantage we saw that the slide had propagated to ~300 feet at its widest point and had crowns ranging from one to three feet deep. The debris zone was at least the size of two football fields with lots of loose boulders strewn in the mix. We also noticed that our first run had descended over a lower section of the slide path.

Summary:

1. **Complacency** - One member of the group successfully skied a similar line one week prior and after our first run we felt safe going for the peak.
2. **Snow data collection sites** - In retrospect we didn't take into account the different snow conditions possible from where we dug our pits to the top of the peak. We should have dug pits the entire way up the boot pack looking for changing conditions.
3. **Disregarding gut instincts** - We stopped to discuss changing snow conditions but failed to collect more data to make more scientific decisions.
4. **Group safety** - All three skiers hiking on the same slope netted all three skiers in same danger zone with no one in a safe zone in case of emergency.
5. **Peak fever** - We got caught up in the desire to reach the summit ignoring key indicators that would have helped us avoid the avalanche.

Photos:



Photo shows crown and debris run out.



Photo shows avalanche from lowest skier's position looking up after slide.



Photo shows avalanche from middle skier's position looking down.



Photo taken fifteen minutes before slide.



Photo shows crown and slide path.



Photo shows slide path from lowest skier's position.



Photo shows hard slab debris.



Photo taken one week prior. Illustration shows approximate locations of skiers and crown from 10.31.09.