Pastoral – Near Miss Report
Turnagain Pass, Kenai Mountains, Alaska

**Location:** Northwest Face of Pastoral Peak
Lat/Long: 60.735677° -149.174836°

**Date:** December 20, 2017, **Time:** 11:40am
**Report by:** Chugach National Forest Avalanche Center Staff
**Contact:** staff@chugachavalanche.org, website: cnfaic.org

**Synopsis:** Two skiers remotely triggered a large avalanche while skinning below the NW face of Pastoral Peak. The skiers were in the direct path of the avalanche. Both skiers reversed their travel and ran/skied behind a small knoll to avoid being caught. At the same time this avalanche released, another avalanche was sympathetically triggered approximately 1500 ft. away to the NE, 900 ft. lower in elevation. This is considered a near miss due to the size, proximity to people and potential consequences of the avalanche triggered.

**Avalanche Details:**

*Photos of avalanche and snowpack profile are at the end of this report*

Avalanche Code: HS-ASr-R3-D3-G
Trigger – ASr (remote trigger from below)
Aspect – NW
Angle – 40+ degrees
Elevation - 4350'
Crown Depth – 5-12’, average 8'
Width – 1500'
Vertical Fall – 1100'
Length of Path Run – 3000’
Weak Layer – Basal facets in the bottom of the snowpack

Debris depth ~6’, only probed in middle section of debris

**Accident Summary:**
On Wednesday, December 20, 2017 a group of 2 skiers toured from the Sunburst Parking lot over Taylor Pass to the basin below Pastoral’s NW face. Both had avalanche rescue gear and were wearing avalanche airbags. They checked the CNFAIC forecast before touring that day. Description from one of the party members, Skier 1:

“We were both on skis, in touring mode. We had checked the report that morning and had extensive discussion about our plan. We were going to avoid skiing any steeper slopes at elevation, as there wasn’t a lot of info about the snowpack above 3000’. Further, we had spoken with multiple parties who had skied Pastoral in the days before the incident and it sounded like a safe alternative to skiing a
steeper line somewhere. The plan was to continue skinning up the route we were on and just ski the low angle slope over the glacier. We discussed the danger of triggering a big slide if we skied the face and neither of us felt comfortable with that.

We were traveling with about 100-150 yards between us, Skier 2 was breaking trail. There were older tracks but we were breaking trail for today. On the way in we didn't see any recent natural slides or other obvious signs of instability. We felt that we were a safe distance from the face while skinning up, but as soon as the avalanche released we knew we were in imminent danger based on the size of it. It sounded like a distant explosion when it went, then we heard and felt the snowpack below us drop several inches.

Skier 2 reversed direction and began to run/ski to the knoll and I unfortunately lost a ski as I was turning around and I felt my only option was to run (Skier 1 ditched his other ski)*. In the time it took for me to deal with my ski situation Skier 2 caught up to me. The avalanche missed us by 2-3 seconds and came down on either side of the knoll. We were both prepared to be swept, as we didn’t think the knoll would divert it.

* Skier 1 ditched his second ski after his first unintentionally released and ended up walking back to the car. CNFAIC staff recovered one of the skis the following day while investigating the avalanche.

**Snowpack and Weather History:**

The avalanche occurred on a sunny day with light to moderate Westerly winds. Temperatures were in the mid 20F’s along ridgetops and a trace of snow fell the day before with Moderate Westerly winds. The last significant snowfall occurred five days prior (Dec.15th) with 13” (1” SWE) recorded at Center Ridge Snotel. December 15th was the end of a continuous 2-week storm cycles that brought warm temperatures, heavy precipitation (rain and snow) and strong winds since November 26th.

In early December, an “Atmospheric River” was positioned over Southern Alaska with a South to North jet flow that lasted several weeks. During this period 9.4” of Snow Water Equivalent (SWE) was recorded at the Center Ridge Snotel at 1800’. Above freezing temperature caused heavy rain in the lower elevations and rain reached 3000’ at times. All this precipitation landed on thin, weak faceted snow on or near the ground that formed in November. A widespread natural avalanche cycle occurred over a five-day period from December 9th through the 12th with wet slabs releasing below 3000’.

Near the beginning of December when these facets were originally buried by 1-3’ of new snow, numerous remote triggered avalanches occurred including an event on Tincan where a group of skiers triggered two avalanches, one on each side of a ridge, 600+ ft away in a flat area. This facet layer was named the “Thanksgiving Facets” due to being buried shortly after the holiday. The snowpack in November was very thin, only a few inches covered the ground at lower elevations and a few inches sat on top of a thin melt/freeze crust in the mid elevations. In the upper elevations, facets formed both under and above a melt/freeze crust that formed in late October/early November.
Avalanche Danger:
The avalanche danger was rated MODERATE in the Alpine (above 2500’) and LOW at Treeline (1000’-2500’). The bottom line read: “A MODERATE avalanche danger exists in the Alpine. Fresh wind slabs are possible in leeward terrain. Additionally, on the high elevations slopes (above 3,000’) the possibility of a deep slab avalanche breaking near the ground remains a concern. Areas where the snowpack is shallower, such as on the South side of Turnagain Pass, towards Summit Lake and the Crow Pass region are the most suspect.”

The Primary Concern for Dec. 20th was Deep Slab.


*We appreciate the party involved in this near miss for sharing their story and experience for others to learn from. Thank you also to Mike Ausman for sharing some great photos post avalanche and to several other parties who took the time to submit avalanche observations at CNFAIC.org*
Pastoral Avalanche

Approximate Up-track and Escape Route, photo taken the day after on 12/21/17
Snow structure and snow pit information was gathered the following day 12/21/17 near the site where the avalanche was triggered.

One of two missing skis was found the following day near the spot where the party ran from the debris and exited the slide path.
Snow pit location adjacent to where the party exited the slide path & near where the avalanche was triggered

Remote triggered avalanche on Pastoral occurred Dec. 20, 2017

This is where the party of 2 escaped being caught by debris

Forecaster tracks and a test pit the day after avalanche (12/21/17)

Close-up of the sympathetic avalanche that released 1500’ away from the original crown
Looking at the crown from below the knoll where the party escaped the slide path

Close-up of bed surface
Final Forecaster Note: This incident had almost all of the characteristics associated with a Persistent Deep Slab avalanche problem. The slope had tracks on it and had been skinned and skied over earlier in the week, no signs of instability were observed prior to the avalanche. It had been a week since any natural avalanches occurred and 14 days since a human triggered avalanche. It was remotely triggered from below, in a thinner part of the snowpack. The avalanche was large and destructive enough that it could have buried and destroyed a car, damaged a truck, destroyed a wood frame house, or broken a few trees. It failed on a weak layer of facets (a persistent weak layer) that was buried around Thanksgiving. This weak layer was lurking below feet of snow resulting in the recipe for this type of avalanche. Once this poor snowpack structure sets up, avoidance is really the only way to manage this avalanche problem. Visualizing terrain as an avalanche path and then thinking about what the maximum slide size potential would be, especially on routes that are commonly used, can be hard to do. This event illustrates why Persistent Deep Slab is a very tricky and scary avalanche problem to manage and forecast for. We are so glad that the two skiers walked away from this and that we all as a community can learn from this close call.

Here is another image to help visualize avalanches on Pastoral.