Incident Summary by Robert Hahn, NWAC  
Date: 12/30/2018  
Location: Portly Basin, Hwy 20, Washington Pass Area

Narrative:

On a personal ski day, I joined a pre-existing group of 4 ski partners with a range of experiences. We took two sleds up Highway 20, noting debris from a small natural wet avalanche on shallow, steep, rocky terrain; evidence of strong warming and rainfall the previous day. We had questions about the snow stability shortly after the most recent storm, but believed that Portly Basin offered reasonable tree skiing options. We followed an existing skin track into Portly Basin and found an average of 12" of new storm snow at 6,000 ft. The 12/29 rain crust was present up to around 5500' elevation. We did not observe signs of instability prior to entering the basin.

As we entered the basin around 11:30, we observed a party on a 7000 ft ridgeline who had recently remotely triggered a large avalanche (blue outline in Image 1, Image 2). The avalanche broke widely across terrain features and exhibited dramatic lateral fractures. It was triggered just off the ridgeline on a leeward, E or E-SE aspect. On our second ascent of the day, around 13:30, our group decided we could avoid what we thought was a wind slab problem on the wind-loaded ridgeline, by traversing below on relatively low angle terrain (30-33 degrees). While traversing with skins on, a member of our party triggered a large avalanche (SS-ASu-R2-D2-I) at 6500 ft on an E aspect.

The avalanche broke near the ridge about 75 ft above him (see Images 3 and 4). It was around 75 ft wide and ran approximately 400 vertical feet (~1200 ft in length). The slide released on an identifiable layer of 5-6 mm buried surface hoar atop a 1F hard bed surface. The avalanche was triggered from a 30-33 degree slope, while the crown was 38-40 degrees.

The group member caught in the avalanche described a brief period of snow around his head. His downslope trajectory was arrested quickly when his ski caught on a small larch tree, but he would have gone further without the snag. He was superficially covered by debris and was able to get himself out; the hardest part being described as getting the ski free of the tree, since it was twisting his leg at a painful angle and he had nothing solid to work against.

The party safely returned to Blue Lake following the incident, noting reactive snow with shooting cracks and slope fractures on test slopes along the rib during the descent. This was just a few hundred feet west of our original descent where we had observed no instability.

Lessons:

1. In hindsight, the avalanche we saw upon entering the basin should have changed our mindset. It broke widely across terrain features and the near constant thickness of the crown was indicative of some sort of faceted weak layer, rather than a wind slab forming at the crest. Furthermore, going into the 12/28-12/29 storm, I knew that large surface hoar was widespread in the Cascades and I should have been looking for it. At this point, we should have identified and examined the layer the 1st avalanche failed on, then applied that knowledge to our terrain choices.

2. We thought that we could use moderate slope angles to effectively mitigate the avalanche problems. This strategy failed because of our buried surface hoar weak layer oversight. We also entered terrain on a similar wind-loaded aspect to the recently triggered large avalanche in the upper basin.
Image 1: Terrain Map depicting both avalanches in Portly Bowl on 12/30. Blue indicates the first avalanche described. Red indicates the avalanche triggered by my party.

Image 2: First avalanche described, triggered by another party from the ridge-line.
Image 3: Crown of the second avalanche described from the elevation of the trigger.

Image 4: Location of avalanche trigger. Ridgeline in the background.