

Bear Point Avalanche Accident Report

Location: Bear Point, Chugiak, Alaska

Date: Feb 2, 2021

Report compiled by: Alaska Mountain Rescue Group with assistance from the Chugach National Forest Avalanche Center

Synopsis: Three climbers ascending a 2,500 foot steep and narrow gully on the northwest face of Bear Point were caught, carried and partially buried in an avalanche that released near the top of the gully. All three climbers were killed.

AVALANCHE INFORMATION

Type: Hard slab

Problem/Character: Wind slab

Crown Depth: 3-10 inches

Crown Width: Between 200-500 feet

Vertical Run: 2,200 feet

Trigger: Boot penetration (climbers ascending)

Weak Layer: Advanced facets and depth hoar (1-4mm)

Aspect: NNW

Elevation of Crown: 3,000 feet

Slope Angle: 30-50 degrees

Avalanche Discussion:

The start zone was near the top of Bear Point. It was a highly wind affected small bowl with steep rocky ribs that funnel into a narrow chute (couloir) several hundred feet below. A cornice was present on top of this bowl. Due to 2" of new snow and wind post-accident, much of the crown face was filled in with new windblown snow and/or scoured. Many of the following dimensions are best estimates, including crown depth and weak layer thickness. Confidence is high that this was a shallow wind slab avalanche that was triggered by the climbers as they approached the top of the climb. However, it cannot be ruled out that this was a natural wind slab avalanche due to active wind loading on the afternoon/evening of the accident. The weak layer was a combination of depth hoar and smaller grained faceted snow that was highly variable in thickness. The slab propagated between 200-500' feet wide. There was enough debris generated to run almost the length of the narrow gully (2,200' vertical fall). At the toe of the avalanche, where the climbers came to rest, the debris was between 3 and 4 feet deep.

Accident summary:

Tuesday 02/02/2021 at 10:30am Climbers 1 (male, 50 yrs), 2 (male, 43 yrs) and 3 (male, 54 yrs) set out to climb Northwest Couloir of Bear Point in the Chugach State Park, Chugiak, Alaska. Route is a steep and narrow snow gully that finishes with a wider bowl. Their plan was to descend via the common Bear Point hiking trail and be picked up at a trailhead on the

southwest side of the mountain. Climber 3 lived in the area and was very familiar with the route. Climbers 1 and 2 were visiting out of state. Two of the climbers were experienced mountaineers; their avalanche training is unknown. All three were wearing harnesses, carried ice axes and had crampons on; they were not wearing helmets or avalanche transceivers. The group was climbing unroped.

There were no witnesses to the avalanche, but we suspect that the climbers were ascending in the gully when the avalanche initiated at the upper elevation starting zone (2400-3000'). The debris ran the whole length of the narrow gully. The climbers were located close to the toe of the debris.

Rescue summary:

When the climbers did not show up for planned pick up, the family got concerned. They reported them overdue to Alaska Rescue Coordination Center at 10:30pm. A good friend of Climber 3 checked the starting location and found their parked vehicle. He walked towards the base of the gully but turned around as he deemed it unsafe since it was dark and snowing lightly. He then hiked up Bear Point Trail to look into the gully from the top, but saw or heard no sign of them.

Wednesday, 02/03/2021 at 5am, Alaska Mountain Rescue Group(AMRG) was notified of three missing hikers on Bear Point. AMRG deployed and began the search using ground teams. One of the teams located the missing climbers at the base of the gully. The climbers were found partially buried on the top of debris. Climber 3 was located at the toe of the debris at the elevation of 830' and Climbers 1 and 2 in close proximity to each other 100' above Climber 3. Climbers 2 and 3 were found prone head downhill with the airway covered in snow, and Climber 1 was found supine head downhill with the airway covered in snow. All the climbers had signs of significant trauma possibly suggesting a long travel distance. AMRG extricated and transported the three subjects to the trailhead by 4pm.

Wednesday afternoon, Alaska State Troopers' AStar B3 Heli 3 provided aviation support for a fly over with two AMRG Avalanche Specialists to look for any information about the avalanche starting zone or other clues along the slide path, but the low cloud ceiling at 2400' prevented gaining the view of the upper gully. On Thursday 02/04/2021 AMRG Avalanche Specialists with the support of Chugach National Forest Avalanche Center staff hiked to the top of the gully to investigate the snowpack and gather information for the accident report. In addition, Alaska State Trooper Heli 3 was able to do another fly over with an AMRG Avalanche Specialist to get additional aerial photos of the starting zone.

Weather summary:

Weather data is retrieved from three weather stations nearest the site of the accident. The Alaska DOT Thunderbird Falls RWIS station is located roughly 1.5 miles north of the accident site at an elevation of approximately 200'. The Arctic Valley Friends of CNFAIC station is located approximately 12.5 miles southwest of the accident site at an elevation of 3900'. The NRCS Moraine SNOTEL station is located approximately 13 miles east of the site at an

elevation of 2100'. The Thunderbird Falls and Arctic Valley stations are the nearest stations with wind observations, and the Moraine station is the closest station with snowfall data.

The area experienced strong winds the day prior to the avalanche, with sustained northerly ridgeline speeds of 30-50 mph and gusts up to 65 mph between 1:00 a.m. and 7:00 p.m. on February 1 at the Arctic Valley weather station. The same time frame corresponds with a spike in winds at the lower elevation Thunderbird Falls station, although wind speeds in the valley were quite a bit lower, with sustained speeds of 5-10 mph and gusts to 13 mph. This was the biggest wind event in the week prior to the accident. The most recent snowfall on record at the Moraine station was 3" of snow on the morning of January 24. Prior to that, 4" snowfall was recorded between Jan. 18 and Jan. 20. While these values are our best estimate for weather observations, there may have been slight differences at the site of the accident. The overall trends of snowfall and wind speeds should be fairly representative, but the exact wind direction and snowfall totals may vary from what was measured at the nearby weather stations due to effects of local topography.

Snowpack summary:

Avalanche specialists accessed the ridge above the start zone the day following to assess the snowpack. The start zone itself was deemed too dangerous to access, but they were able to dig a snow pit on a slope immediately adjacent to the start zone. The pit location was characterized by similar aspect, elevation, and vegetation coverage as the far north portion of the avalanche.

The snowpack consisted of a variably thick knife-hard wind slab sitting on top of a layer of weak, faceted grains and depth hoar at the base of the snowpack (see photo and pit profile). The strong winds on February 1 likely contributed to the formation of the wind slab. There was a degrading melt-freeze crust between the facets and depth hoar, which was approximately 2" thick in the snowpit. There was a large degree of variability in the depth of the snowpack across the rocky and wind-exposed start zone. We estimate the thickness of the wind slab to have varied between 3-10" across the start zone.

Comments:

Without survivors or witnesses, it is impossible to piece together the full picture of the events. Fatal avalanche accidents are tragic and touch communities far and wide. Condolences to the families and friends of the deceased climbers. Thank you to all the agencies that worked together during the rescue and accident investigation on Bear Point - Alaska State Troopers, AST Aviation Unit, the Chugach State Park staff, the volunteers of the Alaska Mountain Rescue Group, and the Chugach National Forest Avalanche Center staff. The National Weather Service Anchorage Office provided weather information for the SAR operations and the accident report.

Photos:



Avalanche path overlaid on Google Earth image.



All three subjects
recovered in this area

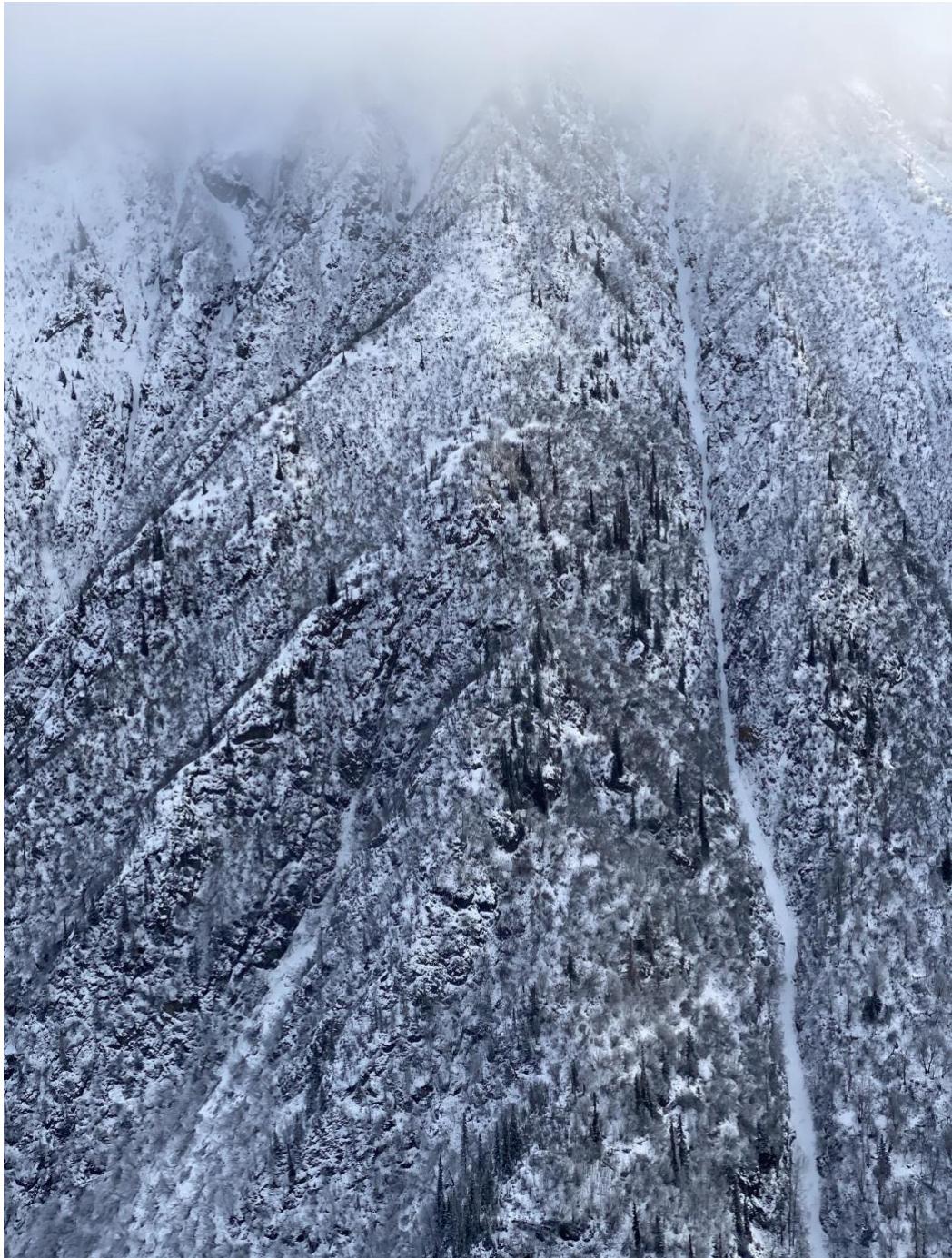
Image of Northwest Couloir taken on Heli3 fly over on 02/03/2021.



View of upper starting zone, photo from the flyover 02/04/2021.



View of upper complex starting zone, photo from the flyover 02/04/2021.



Another look at the Northwest Couloir taken on Heli3 fly over, 02/03/2021.



Looking up the avalanche path at ~1400'. This is the first significant gully.



View from 1050' looking down the narrow gully to burial location. Debris covered with 2" of new snow, total snowpack depth 35".



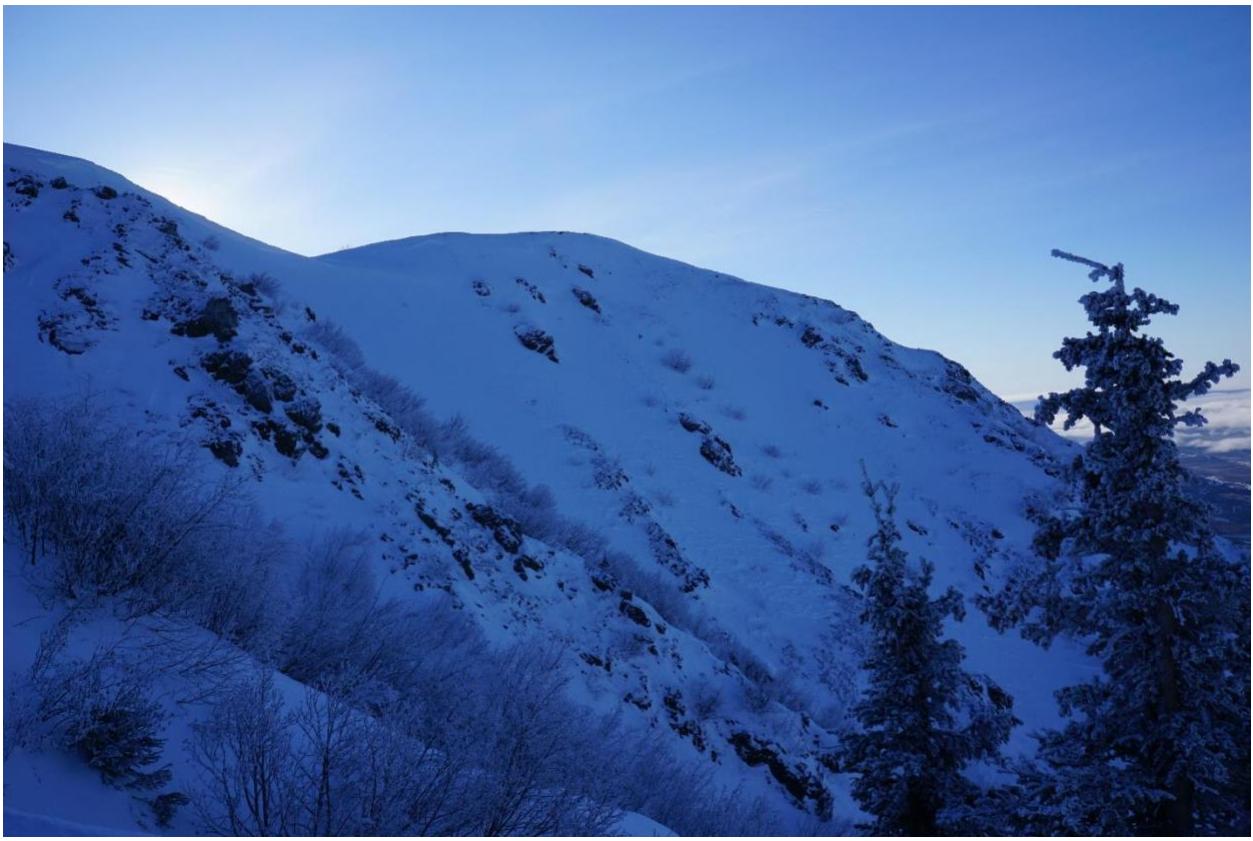
View of the highest portion of the start zone. The dotted line highlights one of the few remaining sections of the crown still visible, 2/04/2021.



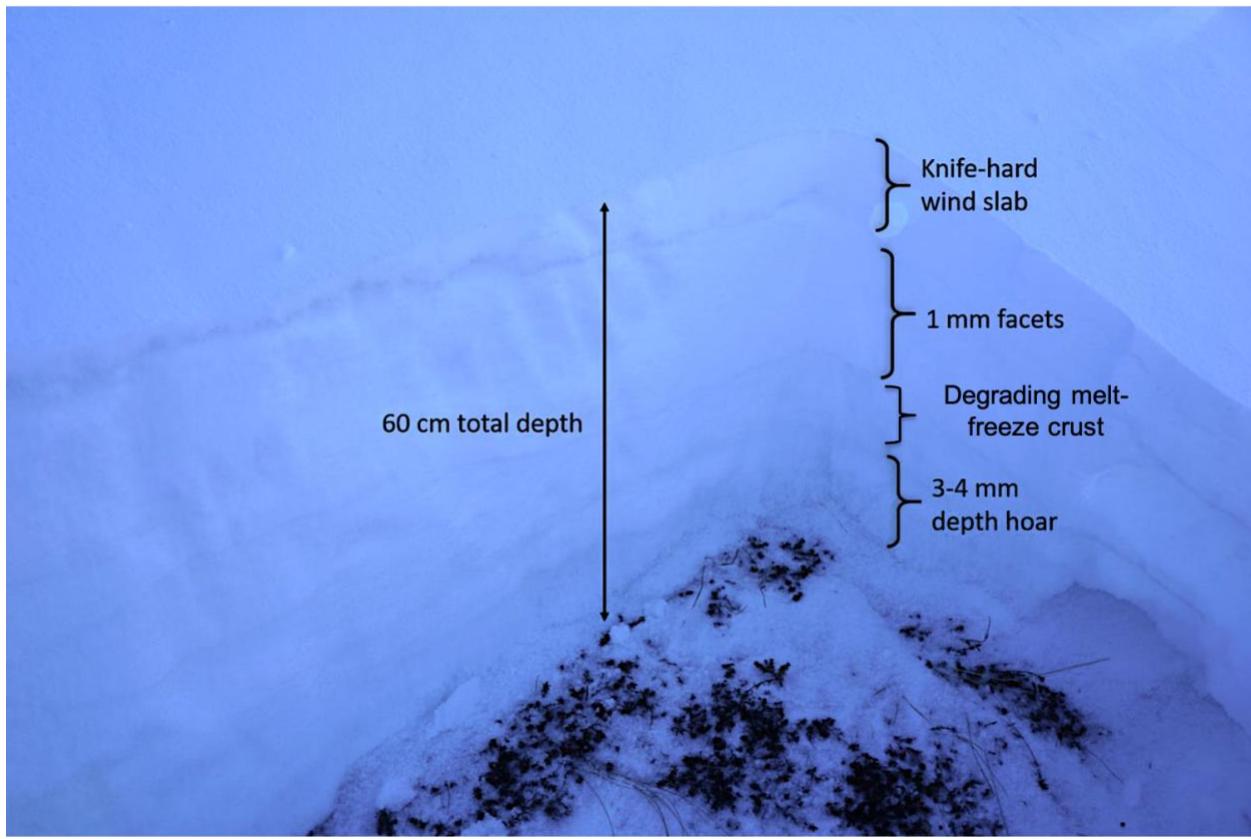
Looking across the complex start zone from the southwest edge of the path.



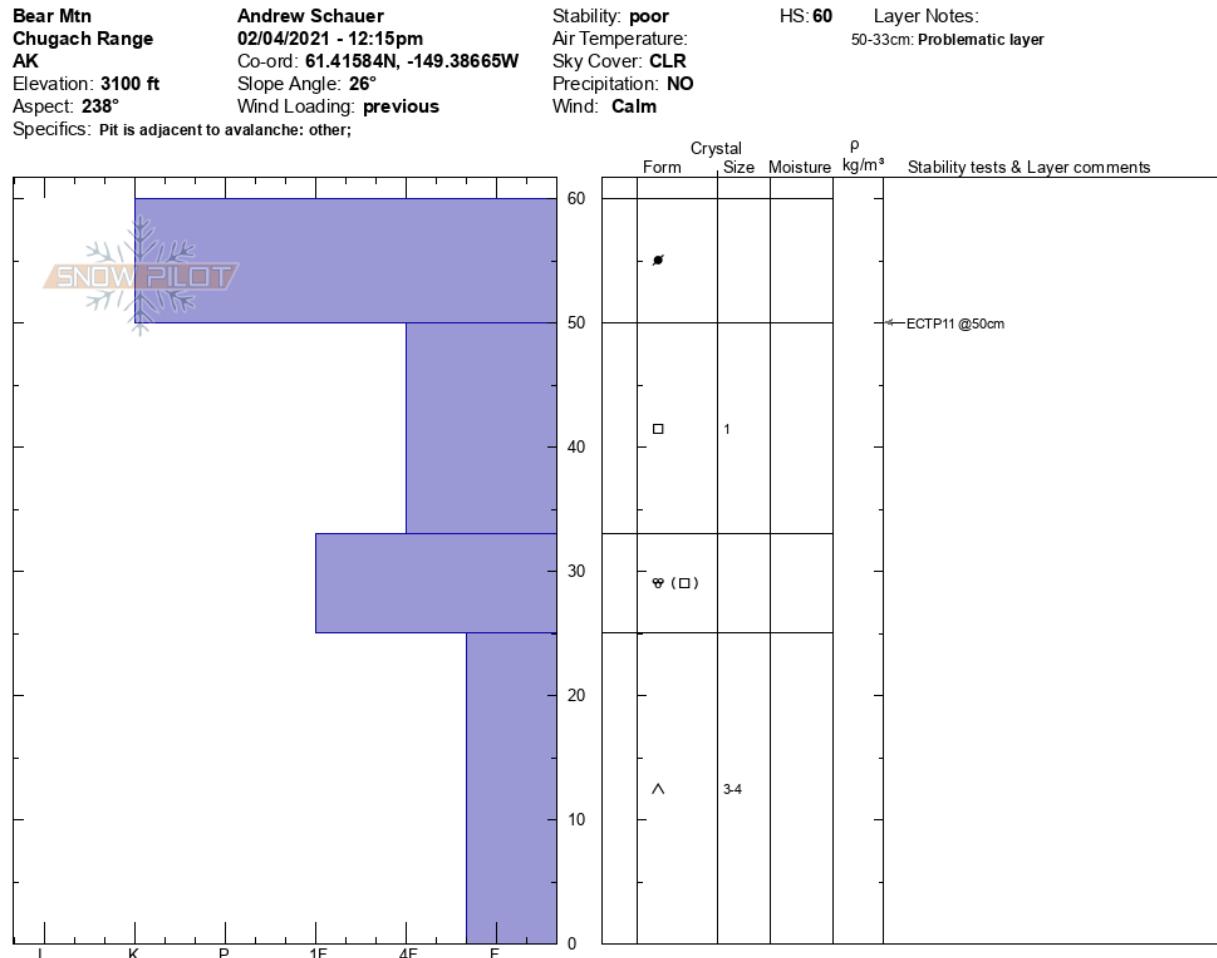
Looking across the start zones from the northeast edge of the path.



A second view of the start zone from the northeast edge of the path.



Snowpit adjacent to the start zone at a similar elevation and aspect as the crown line.



Snowpit profile from a pit adjacent to the start zone.