

GLOSSARY¹

Avalhex- An explosive avalanche triggering device consisting of a fixed tower and gas canisters in starting zones. The system is remotely triggered resulting in an explosion from a balloon filled with a gas combination ignited by an ignition squib.

Anchor- Terrain, rock, vegetation or other obstacle (natural or artificial) that helps to hold the snowpack in place. Passive avalanche control often involves the installations of artificial anchors or supporting structures (e.g. fences, nets) to break up the slab or limit the size of the release

Artificial Avalanche -An avalanche triggered directly by humans or their equipment (skis, snowmobiles, explosives). Artificial releases of avalanches are used for avalanche hazard reduction and stability testing.

Aspect- The direction towards which an avalanche slope faces. A north aspect is an avalanche slope that faces the north or is on the north side of a mountainside. Slope aspects are important in avalanche forecasting for determination of solar radiation or windloading in start zones.

Avalanche- The downhill movement of the snowpack or a portion of the snow pack. This event may be natural or artificially induced. If structures, transportation corridors, or recreation occurs in avalanche zones, the effects of avalanches may be destructive or deadly.

Avalanche Cycle- Period of increased avalanche activity lasting a period of hours or days. Avalanche cycles may be triggered by defined climatic conditions such as rapid warming, heavy snowfall, strong winds, and formation of unstable snow layers such as hoar frost.

Avalanche Hazard- A combination of steep terrain, weather, and snowpack that result in avalanche threat to people and/or property.

Avalanche Hazard Index- A numerical representation of collision potential and economic loss as the result of snow avalanche threat in a transportation corridor. The avalanche hazard index is a function of avalanche frequency and magnitude combined with moving vehicles, waiting vehicles, and the consequences of avalanche collision. The index is used as a comparison of risk reduction methods and a comparison of different areas with avalanche hazard.

Avalanche Path- Mountain slopes with an angle and aspect favorable for avalanche occurrence. The avalanche path is made up of the starting zone (where avalanche initiation occurs), the track (where the avalanche flows and accelerates), and the runout zone (where the slope angle decreases, the avalanche decelerates, and stops).

Avalauncher- An avalanche triggering gun that uses compressed gas to fire charges into avalanche starting zones.

Blaster Box- A remotely controlled avalanche triggering device that delivers explosives with a tower placed in the starting zone. The tower has a box that is preloaded with cast primer charges and the charges are shot into fixed starting zone targets.

Compression Test – A snow stability test in which force is applied to an isolated column of snow. A shovel blade is tapped by a method of application of progressively greater force until

the column collapses. The number of taps that it takes to cause failure in a weak layer is the measure of instability. Along with other observations, this method gives an indication of site specific snow instability and avalanche probability.

Dry Avalanche- Avalanche that occurs when temperatures are below freezing and the snowpack does not have melted liquid water.

Dud – Explosive charge that did not detonate upon impact. If they are military ammunition, duds are also known as unexploded ordnance.

Fracture- Location in the snowpack (plane) where the peak value of stress failure occurs. Fractures are perpendicular to the snowpack.

Gas Ex- A remote controlled explosive device that triggers avalanches. The gas ex is fixed in place in a start zone. A mixture of oxygen and propane are ignited causing an explosion that is directed at the snowpack with a large pipe.

Handcharge- An explosive charge that is delivered by a person throwing the charge into a predetermined avalanche triggering site.

Helicopter Delivery- An explosive charge that is delivered by a person throwing the charge from a helicopter into a predetermined avalanche triggering site.

Impact-The likely effect of an action or proposed action upon specific natural, cultural or socioeconomic resources. Impacts may be direct, indirect, individual, cumulative, beneficial, or adverse.

Impairment- An impact that, in the professional judgment of a responsible NPS manager, would harm the integrity of park resources or values and violate the 1916 NPS Organic Act's mandate that park resources and values remain unimpaired.

Mitigation-A modification of a proposal to lessen the intensity of its impact on a particular resource.

Passive Avalanche Control- Non explosive avalanche control or prevention methods such as engineered mounds, terraces, supporting structures. Diversion structures such as snowsheds, catchment dams, dikes, and walls prevent avalanches from reaching targets (buildings, roads, or inhabited areas). Wind structures that divert snow are snowfences, vortex generators, and jet roofs. Forest cover or revegetation provides anchors that reduce avalanche potential.

RECCO Detection System-The RECCO system utilizes a reflector chip that can be found by a detector with multi directional radar. The system is comprised of a reflector chip that is embedded in the explosive. The RECCO detector can pinpoint the location of the reflector chip. In this document, the RECCO chip would be used to detect the location of unexploded charges.

Runout Zone- The location in the avalanche path where the slope angle decreases and causes avalanches to slow and eventually stop. This zone is where the avalanche debris settles after the event.

Rutschblock Test- A snowpack stability test involving a skier exerting stress on an excavated column of snow (2 m by 1.5 m). The skier tests the column by approaching, standing, down-weighting and jumping until failure occurs.

Sedimentation- The action or process of forming or depositing sediment.

Shear Quality- A semi-quantitative measure of the “nature” or ease of fracture when performing shear tests on the snowpack.

Shovel Shear Test- A stability assessment technique that identifies weak layers in the snowpack. The test involves using a shovel to exert force on an isolated column of snow. The column will fail at weak layers and the amount of force used defines the relative weakness between weak layers.

Snow Stability- The measure of avalanche potential within the snowpack. High stability means avalanches are less likely and low stability means that avalanches are more likely to occur.

Soundscape (natural)-The aggregate of all the natural , nonhuman-caused sounds that occur in parks, together with the physical capacity for transmitting natural sounds.

Starting (Start) Zone-The uppermost portion of an avalanche path where avalanches originate.

Surface Hoar (Hoarfrost)-Ice crystals that form from vapor deposition upon the snowpack. Surface hoar forms a layer of loose, weak cohesionless crystals and when buried can become a weak avalanche causing layer.

Sympathetic Avalanche-An avalanche on an adjacent slope that is released by the motion or changing forces from a slide on another slope (can be a distance away). Sympathetic fractures need a well defined weak layer and stored elastic energy within the snow slab to be widespread.

Track-Middle of an avalanche path between the starting zone at the top of the path and the runout zone at the end of the path. An avalanche reaches its highest speeds in the track. Avalanche tracks can be confined and defined by channels, gullies, gulches, couloirs, or topography. An unconfined avalanche track may be on a plane or an open slope.

Unexploded Ordnance-Military artillery ammunition that did not detonate upon impact. The term “dud” is also used to describe unexploded ordnance.

Ungulate- Having hooves.

Weak Layer- a layer of snow within the snowpack that prevents bonding between snow layers.

Wet Avalanche- An avalanche having liquid water in the snowpack. A wet avalanche can also be caused by snow losing its strength after becoming moist or saturated with water. In some instances, an avalanche will begin as a dry snow avalanche and become a wet avalanche as it moves through warmer conditions and as friction warms the sliding snow.

¹ Most snow and avalanche definitions above can be found in the *Northwest Weather and Avalanche Center Avalanche Glossary* Prepared by Mark Moore and found at http://www.nwac.us/education_resources/Avalanche_Glossary.pdf

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