

## **Addendum – “Type of avalanche” – May 2014**

“New Zealand Guidelines and Recording Standards for Weather, Snowpack and Avalanche Observations” 2011 edition

Insert into - Page 62, Chapter 3. Avalanche Observations, section 3.3.8:

### 3.3.8 Type of Avalanche

Record the type of avalanche as described in the following table. Use a 'Sub' type where possible but only when evidence is present, otherwise describe using a 'Main' type.

Symbol & Data code		Avalanche type	Description
Main	Sub		
<b>S</b>		<b>Slab</b>	<ul style="list-style-type: none"> <li>Release of a cohesive layer of snow (a slab) evidenced by a remaining crown wall, and blocks of snow in the debris.</li> </ul>
	<b>Sst</b>	Storm slab	<ul style="list-style-type: none"> <li>Release of a soft cohesive layer (a slab) of new snow which breaks within the storm snow or on the old snow surface.</li> <li>Storm-slab problems typically last between a few hours and few days.</li> <li>Storm-slabs that form over a persistent weak layer (surface hoar, depth hoar, or near-surface facets) may be termed Persistent Slabs or may develop into Persistent Slabs.</li> </ul>
	<b>Swd</b>	Wind slab	<ul style="list-style-type: none"> <li>Release of a cohesive layer of snow (a slab) formed by the wind.</li> <li>Wind typically transports snow from the upwind sides of terrain features and deposits snow on the downwind side.</li> <li>Wind slabs are often smooth and rounded and sometimes sound hollow, and can range from soft to hard.</li> <li>Wind slabs that form over a persistent weak layer (surface hoar, depth hoar, or near-surface facets) may be termed Persistent Slabs or may develop into Persistent Slabs.</li> </ul>
	<b>Sp</b>	Persistent slab	<ul style="list-style-type: none"> <li>Release of a cohesive layer of soft to hard snow (a slab) in the middle to upper snowpack, when the bond to an underlying persistent weak layer breaks.</li> <li>Persistent layers include: surface hoar, depth hoar, near-surface facets, or faceted snow.</li> <li>Persistent weak layers can continue to produce avalanches for days, weeks or even months, making them especially dangerous and tricky.</li> <li>As additional snow and wind events build a thicker slab on top of the persistent weak layer, this avalanche problem may develop into a Deep Persistent Slab.</li> </ul>
	<b>Sdp</b>	Deep persistent slab	<ul style="list-style-type: none"> <li>Release of a thick cohesive layer of hard snow (a slab), when the bond breaks between the slab and an underlying persistent weak layer, deep in the snowpack or near the ground.</li> <li>The most common persistent weak layers involved in deep, persistent slabs are depth hoar, facets surrounding a deeply-buried crust and less commonly deeply-buried surface hoar.</li> <li>Deep Persistent Slabs are typically hard to trigger, are very destructive and dangerous due to the large mass of snow involved, and can persist for months once developed.</li> <li>They are often triggered from areas where the snow is shallow and weak, and are particularly difficult to forecast for and manage.</li> <li>They commonly develop when Persistent Slabs become more deeply-buried over time.</li> </ul>
	<b>Swt</b>	Wet slab	<ul style="list-style-type: none"> <li>Release of a cohesive layer of snow (a slab) that is generally moist or wet when the flow of liquid water weakens the bond between the slab and the surface below (snow or ground).</li> <li>They often occur during prolonged warming events and/or rain-on-snow events. Wet slabs can be very destructive.</li> </ul>

Symbol & Data code		Avalanche type	Description
Main	Sub		
	<b>Sg</b>	Glide slab	<ul style="list-style-type: none"> <li>• Release of a cohesive layer of snow (a slab or blocks) as a result of gliding over a smooth bed surface, usually the ground or a basal ice layer.</li> <li>• Can be composed of wet, moist, or almost entirely dry snow, and typically occur in very specific paths.</li> <li>• Often preceded by full depth cracks (creep and glide).</li> <li>• Difficult to manage as the timing of release is often highly uncertain.</li> </ul>
<b>L</b>		<b>Loose</b>	<ul style="list-style-type: none"> <li>• Release of unconsolidated snow starting from a point entraining snow as they move downhill, forming a fan-shaped avalanche.</li> </ul>
	<b>Ld</b>	Loose dry	<ul style="list-style-type: none"> <li>• Release of dry unconsolidated snow.</li> <li>• These avalanches typically occur within layers of soft snow near the surface of the snowpack.</li> <li>• Loose-dry avalanches start at a point and entrain snow as they move downhill, forming a fan-shaped avalanche.</li> <li>• Other names for loose-dry avalanches include point-release avalanches or sluffs.</li> <li>• Loose-dry avalanches can trigger slab avalanches that break into deeper snow layers.</li> </ul>
	<b>Lw</b>	Loose wet	<ul style="list-style-type: none"> <li>• Release of wet unconsolidated snow or slush.</li> <li>• These avalanches typically occur within layers of wet snow near the surface of the snowpack, but they may quickly gouge into lower snowpack layers.</li> <li>• Like Loose-Dry Avalanches, they start at a point and entrain snow as they move downhill, forming a fan-shaped avalanche.</li> <li>• They generally move slowly, but can contain enough mass to cause significant damage to trees, cars or buildings.</li> <li>• Other names for loose-wet avalanches include point-release avalanches or sluffs.</li> <li>• Loose-wet avalanches can trigger slab avalanches that break into deeper snow layers.</li> </ul>
<b>C</b>		<b>Cornice fall</b>	<ul style="list-style-type: none"> <li>• Release of an overhanging mass of snow that forms as the wind moves snow over a sharp terrain feature, such as a ridge, and deposits snow on the down-wind side.</li> <li>• They range from small wind lips of soft snow to large overhangs of hard snow that are 10 meters or more.</li> <li>• They can break off the terrain suddenly and pull back onto the ridge top and catch people by surprise even on the flat ground above the slope.</li> <li>• Even small cornices can have enough mass to be destructive and deadly.</li> <li>• Cornice fall can entrain loose surface snow or trigger slab avalanches.</li> </ul>
<b>I</b>		<b>Ice fall</b>	<ul style="list-style-type: none"> <li>• Toppling or collapsing ice masses.</li> <li>• Usually restricted to glaciated areas, but can occur within seasonal ice forms.</li> </ul>

*Note: In the comments section add "+S" to a recording if a subsequent slab is set in motion, or if the initial slab "steps down" and slides on a deeper weakness. This additional slab could be the more important observation as often a cornice or icefall is more of a trigger mechanism. Record the slab hardness if observed. Hardness can be measured using the hand hardness test (i.e. 1F, P, etc.) in the starting zone or from the deposit in the runout zone, where the slab is still recognisable.*