

SNOWMOBILE – AVALANCHE SAFETY

Highmarking Safety

Highmarking is the practice of climbing steep slopes with a snowmobile to attain the highest mark/location on the slope, or get over the top.

It is one of the most dangerous things you can do on a snowmobile. **Highmarking accounts for more than 63 percent of the avalanche fatalities involving snowmobilers in North America.**

Tracks on a slope do not mean that a slope is safe. Timing is everything, so ride safely on slopes only when the snowpack is stable.

Any slope steeper than 25 degrees can avalanche. Prime slopes for avalanche conditions are generally 30 to 45 degrees, the same slopes that snowmobilers love to ride.

Riders do not have to be on a steep slope to make it avalanche, you just have to be connected to it.

The following travel procedures could cut the number of avalanche fatalities in half.

So if you learn nothing else about avalanche safety, remember the following about riding on steep slopes:

- Ride onto steep slopes one at a time, with the rest of your group watching from a safe spot.
- Do not park at the bottom of a steep slope.
- Do not help someone who has their sled stuck on a steep slope.

If you like to highmark, adopting the following habits may help you and members of your group stay alive:

- Stay alert for clues of instability, even while driving to the trailhead.
- Ride your sled onto small cutbanks and small slopes to test snow stability.
- Periodically, stop your machine, remove your helmet, walk around to get a feel for the snow, and scan the area.

If the snow is unstable, you should notice one or more of the following clues:

- Recent avalanches (don't play on similar, unreleased slopes)
- New snow (the added weight can overburden buried, weak layers)
- Wind loading (wind can deposit snow ten times faster than snow falling from the sky—as a result, weak layers can quickly become overloaded)
- Rain (weakens snow quickly, causing it to stabilize when refrozen)
- “Whumphing noises” (indicates the collapse of a buried weak layer)
- Shooting cracks in the surface of the snow that run across the slope (indicates that the snow is ripe for fracturing and is beginning to slide downward)
- Hollow-sounding snow (indicates a buried weak layer of snow)
- Signs of rapid or intense warming (the snow will weaken quickly and create unstable conditions—often see small “pinwheels” or snowballs that have rolled down the slope)

Choose slopes that have been stripped by the wind (windward) versus slopes that have been loaded by the wind (leeward).

Snow that is rock hard can still avalanche if it is poorly bonded to the layers of snow

below it.

Be wary of steep, smooth, leeward slopes.

Start out on the less steep slope angles and on the side of a slope instead of center-punching it.

Do your first runs low and fast rather than maximizing your commitment and exposure by climbing as high as possible right away.

If possible, do your first runs from the top down to get a feel for the snow and to improve your chances for escape.

Try to turn toward the edge of the slope rather than turning toward the middle.

If unsure of the snow stability, favor slopes that have recently avalanched over those that have not yet slid.

You can still ride on unstable days—just choose slopes less than 25 degrees that are not connected to anything steeper.

Unless you know the snow is stable, do not approach steep convex rollovers or aim for large rock or tree isolated in the middle of a steep slope.

These are places where the snowpack is under greater stress, and as a result, you are more likely to trigger a slide.

Also be suspicious of steep areas where the snow is shallow and weaker.

Avoid deadly “terrain traps” such as gullies, steep-sided creek bottoms, or slopes that end in depressions because they pose a high probability of a deep burial.

Do not ride on slopes with cliffs below. Favor slopes that are fan-shaped at the bottom and do

not have obstacles like rocks or trees to crash into.

Concave bowls are nasty traps because the fracture propagates around the slope and all the debris collects at the bottom. This is why it is not uncommon for snowmobilers to be buried under 10 to 30 feet of debris.

Allow only one rider at a time on the slope.

If a person gets stuck, do not send a second sledder to help!

Roughly 33 percent of snowmobiler avalanche fatalities occur when a sled is stuck on a slope.

About 34 percent involve more than one snowmobile on the slope at the time of the avalanche.

It is common for a second rider to turn above the stuck person and trigger an avalanche onto the stuck rider who becomes a sitting duck below. Everyone else in the group should be watching the climber from a safe spot.

Other snowmobilers in the group should always park well away from the bottom of steep slopes.

Do not count on being able to outrun a slide.

Get in the habit of parking parallel rather than one behind the other. Also have your snowmobile pointed away from the potential avalanche slope and ready to start.

Traveling Smart in Avalanche Terrain

When riding in known avalanche terrain, try to limit your group size to only three or four people. There is decreased safety when the group size is

large since it is difficult to communicate, make good decisions and follow safe travel procedures.

But do not split your group.

Stop periodically to look for clues to instability in the snowpack and to discuss the avalanche hazard.

NEVER travel above your partner.

Remember, one at a time on steep slopes and park in safe spots while watching the person who is exposed to the avalanche hazard.

Each rider in the group should wear a transmitting avalanche beacon and also carry a probe and shovel in a small pack.

If the tools you need to save your friend are on your buried sled, your friend may die.

Before you drive to the trailhead, confirm that every member of the group has this rescue gear and knows how to use it. Check to make sure all beacons work in “transmit” and “receive” modes.

Always ride with your helmet securely strapped. Full-face helmets have saved a few avalanche victims by providing some built-in air space.

Don't be reassured just because you have ridden in the area many times before. It doesn't matter that it is a nice day (most avalanche accidents happen on blue sky days after storms), that there are tracks on the slope, or that you're wearing a beacon.

Remember that you can have fun even on unstable days by staying away from steep slopes.

Cornice Safety:

Cornices are the overhanging deposits of wind-drifted snow that form along the

leeward side of ridge crests and gullies.

Cornice breaks are caused by additional new snow, wind loading, warming or the weight of a person or sled.

If you like to jump cornices, know that even if you don't break the cornice, the snowmobile's landing shock-loads the slope (like a detonating bomb) and can trigger an avalanche.

Do not approach cornices from the bottom or ride on slopes that are overhung by cornices.

Always be careful of cornices. They usually break farther back than you expect.