

# Grooming and Groomer Information

## General Info

- Two Pisten Bully snowcats generally start at 3 or 4 am.
- Operator safety with two on shift.
- Less operator fatigue due to a shorter shift  
The goal is for groomers to have completed their tasks and will be off of the trails by 9 am.
- If snowing, or significant snow is predicted, the grooming can be delayed until as late as 7:30 so that skiers have fresh corduroy on the most used trails and skaters are either not slogging through powder or on less powder. Both snowcats may be grooming during this period and in the proper direction on the trails.
- Grooming late may be the result of the difficulty of grooming that day. Every day is different due to snow conditions. We are not always off the trails when you are skiing. We apologize for that and try our utmost to be as safe as possible.
- During the normal grooming shift or prior to 8:00 am the snowcats will be traveling in any direction on the trails as this helps move snow to where it should be, can help with tracksetting and contributes to an economical grooming route. Lights will be on, with flashers and a beeper after 8 am.
- Trail maintenance is ongoing and skiers may encounter a snowcat cleaning up a section of trail. Patience is required and the skier must wait until the operator has given the signal to proceed. The snowcat may frequently back up as the operator rebuilds a section of trail, carves into the sides to widen the trail, collect snow to fill in holes in creeks and fills in the dips between steep pitches such as at the back end of Woodland Bell.
- Tilling the snow removes air within the snowpack, heats the snow crystals with friction and breaks off the arms of the snowflakes. The snow then requires some time to cool down and “re-freeze”.
- A fresh, deep snowfall only allows the tracks, the tiller and the blade to physically disturb the top layers. This compresses and hardens up the top layer of the snow but there often is a soft layer immediately underneath that affects skaters.
- Classic skiers can ski in the tracks immediately after the snowcat has passed by as the pans compress the snow.
- Skaters are a different story. The process of cooling and consolidating the skate lane takes from 10 minutes to 25 minutes depending on the humidity, age and temperature of the snow. Fresh snow takes longer than old snow.
- If you are skating and notice your skis are sinking into the surface you may be too close behind the snowcat and if you can see the snowcat, you are definitely too close.
- The indented tracks you leave behind are there until the trail is re-groomed the next day or other skiers gradually wear them down. This means that beginning to intermediate skiers have to contend with the ruts in the trail and that can trip them up. Remember how much you like perfect corduroy, Well, it certainly isn't perfect

after you have passed by. Especially if there is a group of you. The trail surface can be destroyed in seconds.

- If you come skate skiing before we are open, you have the responsibility of avoiding fresh grooming. Sovereign Lake Nordic Centre advertises World Class grooming and we pride ourselves on our product. Your brief trip around the trails before going to work can impair the enjoyment of everyone after you. Look at the Live Grooming map to have some idea where the snowcat is and what has been done that morning. If the surface is hard, go for it but if it is soft, please be careful where you go.
- If you are an early classic skier, we only ask that you be prepared to meet a snowcat at any time as some trails are done twice, and grooming may be in progress on that trail or route.
- The first pass to the Transfer Station at Silver Star is just tilled without being trackset. The tracksetting is done on the way back to Sovereign.

## Complexities of Grooming

- Snow density changes with temperature, humidity, aspect, elevation and exposure to the sun or wind.
- Snow density can change many times within one trail, requiring the operator to constantly monitor the quality of the corduroy and to make the necessary adjustments. Nothing is more frustrating to an operator than not being able to find the right combination to manufacture the perfect corduroy.
- There are many ways the Pisten Bully snowcats can be tuned to manipulate the snow. Grooming requires constant adjustments to the speed of the rototiller (tiller), the depth the tiller is into the snow, the speed of the snowcat, slightly lifting the tiller in powder so it doesn't act like a plow, pressing the tiller into hard snow so it doesn't just sit on top, plowing with the blade to create loose snow for the tiller and flattening the trail as it tends to get dished in, adjustments around the tiller to either let the snow pass through quickly or to retain chunky snow to further chew it up. There are also adjustments to the track setters to increase or decrease their pressure on the snow. As you increase pressure, the tendency is to lift the tiller slightly, possibly resulting in poor corduroy or track marks which we don't want.
- Tilling the snow removes air within the snowpack and heats up the snow crystals which are smashed against each other, breaking off the arms of the snowflakes. The snow then requires some time to cool down and "re-freeze" to a higher density
- A fresh, deep snowfall only allows the tracks, the tiller and the blade to physically disturb the top 3 to 5 inches. This compresses and hardens up the top layer of the snow but there often is a soft layer immediately underneath that affects skaters.
- The advantage of two snowcats working in tandem is once the first snowcat has tilled the snow, the temp of the snow has increased making it easier for the second snowcat to heat it up further so it breaks down into finer crystals that make better corduroy. The disadvantage of one snowcat doing two passes to achieve the same result, is the snow has cooled considerably by the time the snowcat gets back to it, resulting in a less desirable result.
- Occasionally you may see a strange device mounted on the front of a snowcat instead of a regular blade. This is a Front Renovator which has a "knife" that slices the snow just under the surface and leaves a layer of fractured hardpack or ice. The tracks of the snowcat further fracture the layer and the tiller usually completes the transformation into a skiable corduroy. If the layer is very durable, two passes or two machines working in tandem can create the corduroy that we want.

## Safety around snowcats

- The tiller is the most dangerous part of the snowcat. It is typically turning at 900 to 1300 rpm.
- If a pole, ski or you slip on the snow and get caught in it, we cannot stop it fast enough to prevent a horrible situation.
- When encountering a snowcat on a trail, please move well off to the side and all skiers go to the same side. You can see the width of the snowcat and just stepping to the side is frequently not enough as the tiller is 18 feet wide and can take up all of the trail. We will move over as we can but there are limitations. We are putting one or more tracks down and if we have to swerve away from you, that swerve will be there for the day impacting skiers, or we have to back up to straighten the track.
- We will frequently stop so you can squeak by and in that case the tiller will definitely be turned off.
- Do not pass a snowcat until you have eye contact with the operator and the snowcat has stopped. You may be very sure of your abilities but if we don't know that you are there, anything can happen like swerving, stopping suddenly or backing up. Our vision out the back with the tiller raised is poor so we are very cautious backing up during the day.
- If you see a sign in the trail that says **Caution Groomer Working**, please do not ski on that trail or if you do, be very cautious.
- Some of us turn off the annoying beeper as we approach you or if we are following you on a one-way trail.
- We sound the horn if going uphill near and around a corner. The daylighting of the switchbacks on Aberdeen and Lars Taylor have helped both skiers and groomers see around the corner. The use of headphones or earbuds by skiers greatly reduces the ability to hear the snow cat's beeper or horn.
- There are instances where the Caution Groomer Working sign is on Gold Mountain. If you encounter a trail that does not have tracks in it, there is an excellent chance there will be a snowcat on it, so slow down and be cautious. That fresh corduroy does not mean go as fast as you can.
- One item that we constantly observe is xc skiers trying to stop by snow plowing. This technique is very inefficient and if you are able to or can learn to stop by turning both skis sideways and using both edges like a downhill skier, your control and ability to stop is greatly enhanced.