

WELCOME TO PARADISE*

(*KNOWLEDGE REQUIRED)

WITH THE PROPER MIX OF TRAINING, SMARTS AND EXPERIENCE,
YOU TOO CAN SAFELY SKI IN CANADA'S SPECTACULAR BACKCOUNTRY

By Mark Sissons



By midmorning, the sun is already roasting my back as I skin up Rudi's Ridge South, an accessible backcountry skiing slope just outside of the boundary of Kicking Horse Mountain Resort near Golden, British Columbia. It's mid-March, and the mercury is already reaching the mid-teens here in the Dogtooth Range of the Purcell Mountains. Such abnormally high temperatures may be welcome news for spring break skiers, but this sudden heatwave threatens to destabilize the snowpack, exponentially increasing the avalanche risk.

Despite offering relatively gentle, skiable terrain suitable for wilderness ski-touring novices like me, Rudi's long, sparsely treed planar slopes are still

considered an extreme avalanche risk according to my companion, apprentice ACMG ski guide Dave Crerar. A pro snowboarder who rides for North Face, Smith Optics and Olive Snowboards, Crerar also leads backcountry ski-touring excursions around Kicking Horse, Rogers Pass and several Canadian Rockies National Parks.

"The biggest mistake people make is ascending simple terrain like Rudi's, and then getting excited about skiing this steep, complex, awesome couloir behind us without actually knowing what they're standing on," he says as we stop for snacks and water midway up a series of treed switchbacks just beneath the ridgeline. "And that's where it's so valuable to have a professional guide to show you where to safely ski-tour and read the snow."

STEVE OGLE

52

AS BACKCOUNTRY SKI-TOURING'S popularity surges in Western Canada, so does the number of people venturing out-of-bounds without adequate knowledge, equipment or guidance. In 2017/18, seven people were killed in avalanches in Canada while snowmobiling and backcountry skiing, according to Avalanche Canada, the Revelstoke, BC-based non-governmental organization dedicated to eliminating avalanche fatalities and injuries in this country. Although that number is well below the 10-year average of 12 avalanche deaths per year, it is still a preventable statistic.

Your life and your companions' lives could depend on your ability to accurately assess the ever-evolving backcountry avalanche risks and to respond promptly and adequately if someone triggers a fall. You might even be a seasoned backcountry skier under normal conditions, but are you prepared for emergencies where help may not arrive immediately? Are you confident enough to bring others with you who have less wilderness skiing experience than you?

In short, do you possess the necessary skills required to safely ski where no skier has skied before? Local knowledge, training and historical experience are needed to travel safely in all conditions.

BEFORE ASCENDING RUDI'S Ridge with Dave Crerar, I stop by Kicking Horse's ski patrol office to get the latest avalanche risk update from Ryan Harvey, the resort's senior forecaster. A veteran ski safety patroller with over two decades of experience in Western Canada's mountains, Harvey has led many backcountry rescues, including one just two weeks ago where two skiers without proper gear or training were hit by a level two avalanche, which is large enough to seriously injure or kill.



Owning an avalanche transceiver is not enough—you must be skilled at and practised in its usage. **BELOW:** We are here to have fun—and there's no place quite like the Canadian slack- and backcountry.

"The main risk right now is that we're about to go through our first big warming period of the winter, so the snowpack is going to have to adjust as it heats up, which likely will trigger avalanches," he explains as we pour over a map of Kicking Horse. As far as Western Canadian ski resorts go, Kicking Horse is right up there with Lake Louise when it comes to its high percentage of complex avalanche terrain, where there are no opportunities to reduce your exposure no matter where you go. By comparison, Revelstoke Mountain Resort has relatively little complex avalanche terrain, and Big White and Sun Peaks have virtually none.

Inside Kicking Horse's boundaries, Harvey and his team continually identify where potential avalanche problems exist and mitigate them by triggering slides to reduce the likelihood of a skier or boarder inadvertently starting one. They also cut their size with explosives, and by employing other risk-reduction techniques like ski cutting and early season bootpacking. Out of bounds, however, you're on your own in challenging terrain with few opportunities to reduce your exposure without proper route finding and avalanche avoidance training.

"People see other folks going out of bounds and follow them off the back of the resort and straight into trouble,

unaware and unprepared," says Harvey, who leads at least two rescues per season, often involving a helicopter, and usually at the bottom of Canyon Creek off Kicking Horse's backside, from where there is no escape unless you skin up. "Anybody leaving a resort boundary should have at a minimum taken a Level One Avalanche Skills Training course," Harvey says. "As soon as you step outside the resort boundary, you're in big avalanche terrain."

CREATED BY AVALANCHE Canada, the Avalanche Skills Training (AST) Level One course provides an entry-level decision-making framework for recreational skiers and snowboarders in winter backcountry avalanche terrain. Offered by registered trainers in multiple locations throughout

STEVE OGLE; INSET: MARK SIBBONS



Canada, AST Level One includes classroom and field components that teach participants how to read avalanche forecasts, recognize avalanche terrain and self-rescue.

According to Grant Helgeson, one of two senior avalanche forecasters with Avalanche Canada, a simple gut check is also critical. "The one thing that you should think about, especially if you're a newcomer to backcountry skiing, is if you get out there and you start feeling afraid, or you're uncertain, it's OK to turn around," he says over the phone from his office in Revelstoke. A veteran big-mountain skier, Helgeson has experienced his fair share of dangerous situations. "Whether you can't articulate what it is you don't like, or you don't yet have the skills to formulate

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a new trip plan, I think it's important to realize that if you're not feeling it, it's OK to turn around and evaluate and try again tomorrow and live to ski another day. It's all about checking yourself about what you're feeling out there."

Helgeson says that the increase in basic avalanche skills training is a significant factor in the recent decrease in avalanche fatalities. "We're reaching more people as more people are reaching out to us and understanding what we are doing," he explains, adding that if you haven't taken an avalanche skills course and don't know how to read an Avalanche Canada forecast, it's like reading something in a language you're not familiar with: "If you are unable to digest the forecast you are out there flying blind. That's the biggest thing."

CONTINUE THE JOURNEY



To learn more about backcountry safety, understand the science behind avalanches, take online tutorials, plan your trip and find Avalanche Skills Training (AST) Level One courses near you, visit avalanche.ca.

One of Avalanche Canada's partners, Yamnuska Adventures in Canmore, Alberta, has been an industry leader in mountain education for 40 years. A multitude of courses and guided adventures await. yamnuska.com

Key to Avalanche Canada's training is learning how to use the Avaluator, a relatively easy-to-use tool that allows you to understand the current avalanche hazard in the terrain that you're thinking of skiing. It also helps you decide if skiing it is going to be a good or bad choice: "The Avaluator is extremely useful for making decisions about where you are thinking about going based on what the ATE [Avalanche Terrain Exposure] scale rating is for a particular zone," says Helgeson. (Find it at avalanche.ca.)

Another benefit of taking the AST Level One course is being able to recognize what is avalanche terrain and what is not, he adds. "What the course really does is show how big and complex it can be in the backcountry, and starts to fuel that understanding that this is a lifelong learning activity."

Ryan Harvey also encourages prospective backcountry skiers to master the Avaluator: "It's not telling you not to go anywhere, just telling you to avoid these spots," he says. "It's a decision-making aid that allows you to gain experience without dying."

DANGER SIGNS



Knowing what to look for and what to avoid out in the backcountry can significantly reduce risks. Here are some of the most common danger signs:

Sudden Warming: Even moderate temperature fluctuations can cause snow creep and wet-slide avalanches.

Wind Loading: Leeward slopes can become overloaded with snow even when it's not snowing.

Unreliable Layers: Avalanches can still be triggered long after a storm if weak layers persist in the snowpack.

Recent Avalanches: Wherever you encounter a recent avalanche, more are likely to follow.

Unstable Snow: Look out for signs of cracking or collapsing snow, and listen for hollow 'whumping' sounds.

Heavy Snowfall: Significant storms can overload slopes that can then remain unstable for days afterward.

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IN MY CONVERSATIONS with Helgeson and Harvey, they both stress the impact of human factors on wilderness decision making. Impacts that can sometimes prove fatal, which Helgeson calls the dark side of backcountry skiing: "We're busy selling the sport and telling everyone how great it is, but these decisions can have life-threatening or life-changing consequences," he says, adding that even when you're highly experienced, things can rapidly become dangerous. "You can have a minor misstep or close call, like getting knocked off your feet and hurting an ankle and now you're spending the night out, and it can get real serious real fast. And I think it's important for us to consider the gravity of the situation."

Among Helgeson's risk mitigation strategies when entering the backcountry with new and untested companions is an approach he calls "the first date of backcountry skiing."

"I just choose objectives that are so simple that if it's not working out, it's very easy to turn it around and have a mellow day of skiing where I am minimally exposing myself and my companions' avalanche hazards," he says. "Keep your objective small while you're getting to know your backcountry skiing partners because it is a very intimate thing. You are asking a lot from that person to make decisions, and if something goes wrong, you need to be confident that he or she will be able to rescue you and potentially save both your lives."

For Ryan Harvey, a similarly massive factor in proper backcountry skiing risk mitigation is recognizing your ingrained biases and having strategies to deal with them; biases that can lead to accidents like complacency about the terrain, wanting to be accepted into the group, stubbornly sticking to the plan despite conflicting data and trusting a self-appointed expert or leader who claims to have avalanche training but doesn't.

"Another factor is the presence of other tracks," he adds. "People see a set of tracks, and they assume that because that person decided to ski it and they didn't trigger an avalanche that it must be safe. Avalanches haven't changed in the last 20 or 30 years, but the way we try to teach people to manage risk has changed. It's as simple as actually making a decision, not just skiing willy-nilly not having done any assessment."

AS WE NEAR the summit of Rudi's Ridge, Dave Crerar stops to check the snowpack for avalanche risk by sawing

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Remember—the moment you leave the in-bounds resort areas, you are likely in avalanche terrain. Only do so with training and equipment. BELOW: Performing a test to isolate the snow layers is crucial for determining how the snowpack will behave.

a vertical 30-centimetre by 30-centimetre column into the snow. “I’m performing this test to isolate the layers,” he explains. “It’s not entirely representative of the overall slope conditions, but it allows us to make a quick observation of how that top snowpack is interacting, which is what is most important.”

After isolating a column of snow, he lays his shovel on top and begins to perform a compression test, tapping the first 10 times from the wrist, then another 10 times harder from the elbow. The pack compresses under his tapping, and he lifts out a block. He hands it to me, explaining that this piece of ice layered across the entire snowpack is called a melt-freeze crust. It creates a barrier that doesn’t allow the water vapour to travel from the ground—which is always at zero degrees—through the snowpack. The increased amount of moisture below this crust, in turn, creates crystalline facets the consistency of sugar, which don’t bind well.

“When you’re deciding to ski a slope, you want to see what’s happening in terms of the cohesion of the different layers within the top metre of the snowpack,” explains Crerar as he cuts another uniform wall with the shovel. “From that, you can usually figure out where your most important layers are with the naked eye. What I’m interested in is seeing the moisture content

on the top of the snowpack to see how much this sun is permeating everything.”

Drawing his finger down the vertical surface, Crerar pokes into the layers, then draws a horizontal line in the pack about six inches from the surface. “This is all wet and what’s worrying is if the wetness penetrates somewhere that already has a weakness,” he says. “If that is the case, the layer may not be strong enough to hold the snowpack, and then we get those natural avalanches.” When I ask my guide about the danger we’re facing right now on Rudi’s, he pauses: “I would ski it, but I’m not going to ski anything steep.”

That’s fine with me—a backcountry skiing beginner already planning to take my AST Level One course in Whistler with Extremely Canadian. I’m certainly not about to start second-guessing my guide.

As we pick our way down Rudi’s, Crerar selects a fall line least likely to disintegrate beneath us. I’m careful to heed his instructions to follow in his wake, veering neither left nor right. Out here on this unseasonably sunny March afternoon in the magnificent Dogtooth Range, I’m starting to appreciate what avalanche safety pros like Dave Crerar, Ryan Harvey and Grant Helgeson all emphasize: that avalanche training is a lifelong process.

And that I’ve only just begun. X

ESSENTIAL BACKCOUNTRY SAFETY GEAR



Bringing the right safety gear on any backcountry ski trip is critically important—as is having the knowledge of how to use it. This is Avalanche Canada’s recommended gear. The knowledge is up to you.

Avalanche Transceiver

Worn close to your body, this electronic device emits a radio signal that will help your companions locate you (or you them) if one or more of you is buried by an avalanche.

Probe

Resembling a tent pole that snaps together, a probe is inserted into the snow systematically until the avalanche victim is found.

Shovel

Used to dig out an avalanche victim once located, your shovel must be collapsible and compact enough to carry in your backpack, yet sturdy enough to work in hard-packed snow and frigid conditions.

Avalanche airbag backpack

Designed to help you stay closer to the surface, increase your visibility and provide some trauma protection should you be caught in an avalanche, these specially designed backpacks offer an added element of safety.



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