INTRODUCTION

Although we don't always like to admit it, much of what we consider backcountry skiing is basically a dangerous game of "Avalanche Roulette". Every time we head out into the "steep and deep", we roll the dice and place ourselves at risk.

As a result, everyone travelling in the backcountry needs to recognize the risks involved with backcountry skiing and riding. Although some areas may be more hazardous than others, there is always a potential for serious avalanche hazard wherever steep slopes and deep snow are found together.

That doesn't mean that there will always be risk, but in order to become confident in our ability to determine hazard we need to educate ourselves, practice our techniques and use the proper equipment.

This short introduction to avalanche awareness is just that, an introduction. In order to travel responsibly, you need to learn all you can about avalanche hazard by reading books and taking field avalanche courses which focus on avalanche awareness, hazard evaluation and self-rescue techniques.

It is the responsibility of each member of a group to evaluate their own risk when traveling through this terrain. Avalanche awareness is developed through education, as well as practical experience and observation.

Without a well-developed sense of hazard awareness, you are playing "avalanche roulette" every time you head into the winter backcountry. Sooner or later the odds are going to stack up against you.

AVALANCHE AWARENESS

As noted, most backcountry skiers will eventually find themselves exposed to some avalanche hazard at some time. By definition, most of what we consider to be prime backcountry ski terrain is also considered prime avalanche terrain.

Some slopes are almost always ready to slide, while other slopes may only hold hazard for a few days. Learning to recognize the difference is the most valuable skill you can develop in terms of assessing potential avalanche hazard.

Skiing the backcountry without adequately assessing hazard is like crossing a busy street without looking for traffic. It's much better to make a conscious and informed decision to accept risk, rather than to foolishly court danger with a blindfold on. Learn all you can about the weather and snowpack so you can factor in your assessment of risk.

Basically speaking, avalanche hazard evaluation boils down to four components: terrain, weather, snowpack and the human factor. Away from the controlled slopes of the ski area, we use an assessment of the first three factors to guide our own actions.

Avalanches are a natural event, avalanche hazard only occurs when we place ourselves in harm's way. Unfortunately, that's what many of us do, time and time again.

Really, the only thing we can do about terrain, weather or the snowpack is to decide when and where we're going. That's where the "informed decision" process comes in; it's what we do with our evaluation that makes all the difference.

TERRAIN CONSIDERATIONS

- **Slope angle.** Slope angles of 30 to 50 degrees (advanced to expert runs at a ski area) are the most likely to slide. Of course, this is also prime backcountry terrain.

- **Slope configuration.** Convex slopes are under more internal tension than concave slopes and are more prone to release dramatcially when cut by a skier or rider.

- **Aspect.** Sunny aspects often slide right after a storm as a result of rapid warming, but also tend to stabilize more quickly. Shady north slopes often remain dangerously unstable for long periods, especially early in the season or during cold, clear spells.

- **Orientation to wind.** The wind tends to scour snow on windward slopes and deposit it on leeward slopes in the form of dangerous slabs due to the eddying effect.

- **Cornices.** The wind can also form extremely large and cornices on ridge tops. These features can be very unstable and may threaten more moderate slopes below.

- **Signs of Previous Activity.** Signs of previous avalanche activity such as vegetation cues, old fracture lines indicate past areas of concern. Stay clear of likely slide paths and runout zones, if at all possible. Densely timbered slopes are generally safer than open slopes, but they don't necessarily mean safety.

WEATHER CONSIDERATIONS

- **Signs of Recent Instability.** The most important clue to snow stability is signs of recent avalanches on slopes of similar aspect and slope angle. Fresh fractures, blocks of debris and large sunballs are very important clues that snow conditions are unstable and must not be ignored. Rapid settling of snow from tree branches or exposed cliffs should also be taken as a potential sign of instability.

- **Temperature.** Temperatures well above or below freezing can also lead to decreased stability of the snowpack by breaking down the bonds between crystals. Sudden changes in temperature are also a concern.

- **Precipitation.** It's important to note that weather events are key to developing avalanche hazard. Most slides occur either during or immediately after a storm or wind-loading event. New deposition of an inch an hour or 12" in 24 hours should be warning signs. Double this and you've got serious problems in steep terrain. Rain or fog are also frequent avalanche triggers by increasing the density of the surface layers.

- **Wind.** Note that even moderate winds can increase the hazard by transporting snow from one area to another, often depositing dangerous slabs on lee slopes in a short period of time. Learn to read the direction the wind has blown to determine wher dangerous depositions may have occurred.

SNOWPACK CONSIDERATIONS

- **Layers.** The snowpack itself is also of primary interest. Layers of snow within the pack can act cohesively as slabs. Poor bonding between layers is a common cause of avalanches, as the overlying layers cut loose in shear failure on the contact surface.

- **Density.** Density incongruities should also be noted. Denser layers overlying less dense layers are always a concern, as the overlying layer is liable to act more cohesively than the weaker under layer. Other concerns include buried ice crusts or thin layers of poorly bonded snow like buried surface hoar or faceted crystals.

- **Internal Changes.** The processes which lead to increased or decreased internal stability are important. A deep snowpack and moderate temperatures will lead to greater snowpack stability by increasing the strength of the bonds between crystals. Shallow snow depths and very cold temperatures can lead to a decrease in the stability of the snowpack by "rotting" the bonds between crystals.

- **Other Crystal Processes.** Alternating warm days and cold nights can lead to a very strong snowpack, with the crystals becoming bonded by meltwater which freezes. The sun can do this to the surface layers on warm days, as can a warm wind. Frozen rain crusts can form easy slide surfaces when they are buried.

SNOWPACK TESTS

- **Ski Pole Tests.** You can check on the snow conditions below the surface by digging a probing the snow with your ski pole. Feel the layers in the snowpack and be on the lookout for weaker layers which lie below very dense, strong layers.

- **Snowpits.** By digging a hole in the snow, you can check the structure of the snowpack. Dig at least a meter down. Be on the alert for bigger crystals that have distinct facets or edges. You can check for differences in relative density by pushing your fist or fingers into a layer. The more resistant the layers, the denser and more cohesive the snow.

- **Shovel Shear Test.** If you are unsure about a slope, you should perform a stability test to check the shear strength between layers. The quickest test is a shovel shear test. Isolate a column of snow about the size of your shovel blade and then pull evenly on the shovel to see if a layer breaks free.

- **Rutschblock Ski Test.** The best test of stability is the Rutschblock ski test. This requires a large pit about as long as your skis, and about a pole length deep. The test uses your body weight on skis to determine stability. If the block releases as you approach or ease your weight on, it is very unstable. If it releases with one or two jumps it is questionable. If it takes multiple jumps to release, it is probably pretty stable.

SEARCH TECHNIQUES

- **Grid search.** The traditional grid search method should be learned first, as it always works. When you first receive a signal, stop and orient the beacon to the loudest signal and don't move it again. Mark your position on the snow and continue in a straight line. The signal should get louder to a certain point and then begin to tail off. Mark the point where the signal disappears and return to the midpoint between the marks. Turn 90 degrees to your line and reorient the beacon. Turn the volume down to where you can just hear the signal and follow the new line. Repeat the procedure until you have the volume control at the lowest setting. With the beacon held close to the snow, pin-point the area and then begin to probe.

- **Tangential search.** The new 457 kHz beacons have allowed a more efficient search pattern based on following tangential lines to the transmission signal. Begin by attaining the signal as with the grid method and then follow the direction of the maximum signal orientation. Stop at the point of maximum signal strength and reorient the beacon. Turn the volume down and follow this new path. This should be at a slight angle to the previous path. Repeat this process until at the lowest volume setting and then revert to the pin-point grid search and probing as above. In many cases, this method produces an inward spiral pattern rather than a grid.

SAFE TRAVEL

- **Limit your exposure.** If you must travel in a hazardous area, limit your exposure. Cross one at a time with beacons on transmit and all eyes on the person crossing. Avoid making repeated cuts on the slope and do not fall if at all possible.

- **Use islands of safety.** Take advantage of safer areas like dense timber, rock outcrops, ridges and wide valley bottoms. If you must ascend or descend a dangerous slope, stay close to the edge and chose as vertical a line as possible. Kicking steps straight up or down is much safer than cutting the slope with traverses, turns or sitzmarks.

- **Helpful Tips.** Wait a day or two until the snowpack has had a chance to settle following a storm. Don't assume a slope is safe just because someone else has skied it. Be aware that traveling on a lower-angled slope can still trigger steeper slopes above.

- **Caution.** Ultimately, the best overall strategy is to use caution and be prepared. Travel one at a time in suspect areas, and always pick the safest route possible unless you are absolutely sure of a slope and snowpack stability. Stick to the sides of a bowl rather than center-punching a bowl on the first pass. "Spoon in your tracks" and stay as close to the fall-line as possible. If you treat steep backcountry slopes with respect, you just might live a lot longer.

SAFE TRAVEL CONSIDERATIONS

- **Judgement.** Judgment, knowledge and experience become your guide when traveling in the backcountry. You should form an opinion about stability before you even leave the trailhead and be prepared to change your opinion as conditions change.

- **Get information.** Get as much information as you can before you go by calling the National Weather Service or accessing their website on the Internet. Get a local avalanche forecast if one is available. You can also check out the local forecast on the Internet at www.csac.org/Bulletins/.

- **Preparation.** Keep your eyes and mind open as you travel, nature generally provides obvious clues to stability if you know how and where to look. Listen to the snow, feel it with your poles and skis, and constantly evaluate each step or turn. Be prepared to augment or even completely overhaul your assessment along the way. Finally, don't be too stubborn to leave the slope for another day.

- **Communication.** Make sure everyone understands and approves of the groups' objectives and that alternate routes have been taken into account. In addition to collecting external clues, listen to your intuition. If your gut tells you things are amiss, the time to act is now. Don't be afraid to be the "party pooper" who calls for the group to act responsibly.

GEAR

- **Beacons.** Avalanche transceivers or "beacons" are the best insurance policy you have if you are completely buried in a slide. The only frequency now used for beacons is 457 kHz. New digital beacons also offer increased efficiency and search speed.

- **Shovels.** In order to dig through heavy avalanche debris, each person needs a strudy shovel that has a decent-sized blade.

- **Probes.** Probe poles make it a lot easier to pinpoint a victim's location without wasting effort. Remember that time is critical.

SELF RESCUE

- **Safety first.** If your partner is caught, the most important thing to remember is to keep yourself from becoming a victim. Make sure there is no further hazard before attempting to search.

- **Search.** Once you're sure it's safe, switch your beacon onto receive, check for a signal and then move onto the slide path. Depending on the size of the slide and the number of additional searchers, you may need to zig-zag across the slope to look for clues and try to pick up a transmitter signal.

- **Use a search pattern.** Once you pick up a signal, either use the traditional grid search pattern or the tangential search pattern. In either case make sure to practice regularly so that you are confident in your technique.

Avalanches: A Scenario for Assessment

BY SCOTT GILL

The long climb is reaching its end. Your team has been skinning up a low-angle ridge for close to three hours in a moderate snowstorm. Winds of 20 miles per hour persist. Finally, you are able to remove your climbing skins and prepare for the deserved 2,200-foot descent of Dead Man's Gulch. It's cold, and you and three fellow skiers are eager to start down. Now comes the moment of truth: To ski the slope or come up with an alternate plan?

At the top of Dead Man's Gulch, you and the other skiers must answer some basic questions in order to make a good decision about the stability of the terrain you are about to ski. Clues to most of the answers you seek should have surfaced during the day. These clues might involve:

1. TERRAIN

- Is the slope capable of producing an avalanche?
- What is the slope angle (steepness of the slope)?
- What is the aspect (the direction that the slope faces) in relation to the sun and the wind?
- What is the slope shape and history? (Is the slope concave or convex? Does it show signs of previous avalanche activity?)

2. SNOWPACK

- Is there a weak layer in the snow pack? If so, how weak is it?
- Is slab present? (Slab is a cohesive mass of snow that can break away as a unit.)

3. WEATHER

- What are the weather factors?
  - precipitation (duration, density, crystal type, and amount)
  - wind (speed, direction, and duration)
  - temperature (current and trends)

The key to making a decision, besides possessing basic avalanche skills, is good *communication.* I have been on many trips where the discussion of avalanche conditions, even among experienced folks, was poor at best. It's critical for group members to share their opinions about snow conditions throughout the day. By the time a decision has to be made, everyone should be well versed on these conditions.

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The Rutschblock Test

This is a good stability test because it covers a large area and involves an actual skier load. The test provides a good indication of slope stability by having the skier progressively provide more load to the snowpack. Excavate the four sides of the test site as shown in figure 1. You can cut the sides with a ski or dig out a trench. With the snow column isolated, have a skier approach from above and gently step on it. Once on, the skier should flex his or her knees. If the column doesn't give in, the skier should jump up and down on it.

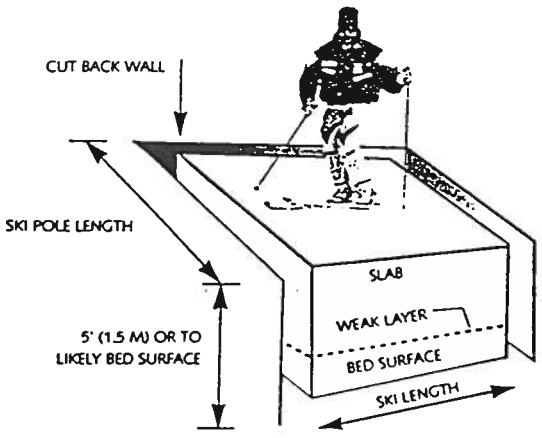


FIGURE 1

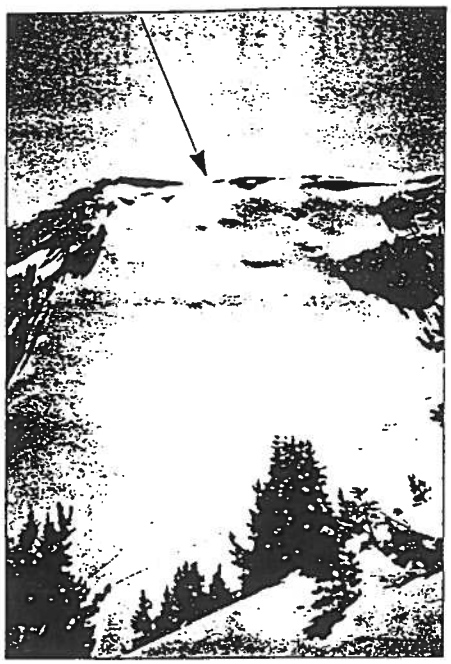
THE TEST RESULTS

1. block collapses during excavation ..... extremely unstable
2. block fails while skier approaches or is standing on it ..... extremely unstable
3. block fails while skier flexes knees ..... extremely unstable
4. block fails when skier jumps once ..... unstable
5. block fails when skier jumps twice ..... potentially unstable
6. block fails only after repeated hard jumps by skier ..... relatively stable
7. block does not fail ..... stable

—Scott Gill

▶ *continued from page 18*

You will need to analyze all terrain, snowpack, and weather factors to develop an avalanche hazard evaluation. Some of the factors are objective while others are more subjective. You might use the acronym SOAP (commonly used by the medical community) to help you arrive at an evaluation: Subjective, Objective, Assessment, Plan. Let's apply this strategy to the trip to Dead Man's Gulch.



THE SKIER AT THE TOP LEFT DECIDED TO SKI THIS SLOPE, ON MT. BLACKMORE IN MONTANA. NOTE THE SIGNS OF RECENT AVALANCHE ACTIVITY ON THE LOWER RIGHT.

AVALANCHE! THE SKIER TRIGGERED A SLIDE ON THIS EVIDENTLY UNSTABLE SLOPE. FORTUNATELY HE WAS ABLE TO REMAIN ABOVE IT.

SUBJECTIVE INFORMATION

This is information obtained from other sources, *not* information that you have collected and analyzed yourself. For instance, while eating your oatmeal this morning you listened to the weather forecast, which called for 2 to 6 inches of snow in the valley and up to a foot in the mountains. Winds from the southeast, the report said, were to increase steadily during the day, up to 25 miles per hour. With this information you can start thinking about a potential increase in snow load from both new and windblown snow. Sources of subjective information like this include avalanche forecast centers, news media, folks at local mountaineering and ski shops, your local ski patrol, and other backcountry enthusiasts like yourself.

Going into an area with good subjective information is very important. It is analogous to getting a thorough patient history for a stranger who needs medical care—in this case the "stranger" is an unknown slide path. With reliable subjective information, you can begin to form an opinion on whether the slopes will be healthy (stable) or unhealthy (unstable).

Here is the subjective information you've gathered for Dead Man's Gulch:

- A ski patroller reported a persistent surface-hoar layer under about 8 inches of snow that fell two days ago on north and east aspects, producing 8-inch slabs on steep, 39-degree slopes. ("Surface hoar" is feathery, poorly bonded snow crystals that form during cold, clear nights on the surface of the snow.)
- You talked to local skiers who had a great powder ski day at Dead Man's Gulch yesterday, making two runs.

OBJECTIVE INFORMATION

As the day progresses, you will need to gather more information for your evaluation. This information will be objective; that is, what you *observe*. The most critical observation you can make has to do with terrain judgment. As you study the area you want to climb or ski, you must determine whether the terrain has the potential for an avalanche.

The objective information that you observe for Dead Man's Gulch includes the following:

- *You noticed recent avalanche activity on some north-facing slopes during the drive to the trailhead and, at the trailhead parking lot, 5 inches of heavy snow had fallen overnight. It was still snowing when you arrived at the trailhead. The temperature was dropping, making the snow less dense than the previous accumulation.* Temperature can undergo significant changes during storms, resulting in variable snow density. A recipe such as this, with heavy snow serving as the base for lighter snow on top, is better than the reverse situation (i.e., when a storm starts during cold temperatures, and the temperature then becomes warmer). When light density snow is followed by denser snow, the new, heavier layer will most likely cause the lighter layer to collapse, creating a slide. A question to ask is: Is the weight of the new snow adding to the instability?
- *As you were climbing to the top of Dead Man's Gulch, you were diligent—you dug several hasty pits (see sidebar page 76) and did a Rutschblock test (see sidebar page 18). The surface-hoar layer you heard about was very noticeable*

SNOW CONTINUES TO SLIDE ON THE 38-DEGREE SLOPE, WHICH IS THE OPTIMAL ANGLE AT WHICH SLOPES PRODUCE SLAB AVALANCHES.

PHOTOS BY ED SONDENO

THE LUCKY SKIER DESCENDS OVER THE DEBRIS. HIS FRIEND, WHO WISELY CHOSE NOT TO SKI THE SLOPE, CAPTURED THE SEQUENCE OF EVENTS IN THESE PHOTOS.

under about 12 to 24 inches of snow, depending on where you dug.

- *While skinning up you heard a small collapse (a "whoomph" sound) while crossing a large, low-angle slope.* This sound is an indicator of an unstable, weak layer within the snowpack. A slab has collapsed on the weak layer as you crossed over it, causing the snow to "settle."
- *The slope angle is 36 degrees.* Predicting slope angles is an important skill. Slopes with angles between 25 and 45 degrees most commonly produce slab avalanches. The optimal angle at which this occurs is 38 degrees. Slopes of 30 to 35 degrees are comparable to the "black diamond" runs at many ski areas. On slopes steeper than 45 degrees the snow is sloughed off before it can accumulate into a slab. The best way to determine slope angle is by using an inclinometer.
- *The slope aspect is northwest.* An important concern is the slope's relationship to the wind. Windblown snow can put a tremendous amount of stress on the snowpack. Observe whether snow is being transported by the wind. Is the wind putting a snow load on the slope? Do you see evidence of previous transport, in the form of cornices or snow pillows? Another concern involves the relationship of the slope to the sun. A gross generalization is that north-facing slopes tend to have more persistent weak layers, due to the lack of solar radiation, while south-facing slopes may be moderately warmed by the sun, which can strengthen the snowpack. However, too much sun during warm temperatures can cause wet-snow problems, when snow becomes saturated from melt water and can be potentially unstable. To determine slope aspect, use a compass or note the slope's relationship to the sun.
- *You see flagged trees.* Flagged trees, which have uphill branches missing, indicate a previous slide. With this clue, large slide paths are easy to determine. Recognizing small slide paths (150 vertical feet or less), the ones in which most folks get caught, is more difficult. Therefore, potential small slide areas must be closely scrutinized.
- *As you look down Dead Man's Gulch you notice the slope shape. You see a breakover about 200 feet below the top.* Breakovers, or slope convexities, are areas where the slope may steepen by a few degrees—potentially a critical few degrees. These are often the starting points of avalanches; good ski cutting lines, where a skier can cross without getting caught in a potential slide, are located just *above* them.
- *You see winds moving snow out of the southeast.* Wind carries and deposits snow, sometimes in large quantities on a small area. The weight of the newly deposited snow "loads" the snowpack rapidly, in this case onto northwest-facing slopes.

ASSESSMENT

At this stage you put all the variables together and come up with a *specific* evaluation. Let's review the data you collected during the day:

- Recent new snow (which you know is recent because the tracks of yesterday's skiers are gone) indicates a significant load is being placed on the snowpack.
- Dead Man's Gulch is a 36-degree slope that faces northwest. It has been windloaded from southeast winds.
- You heard signs of instability (a "whoomph" or collapse) on approach and saw some avalanches on slightly steeper slopes with the same aspect on the drive up.
- Your hasty pits showed widespread slab varying from 12 to 24 inches on top of a weak surface-hoar layer. The Rutschblock stability test reading was 3.

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▶ *continued from page 21*

From this information, you should be able to articulate the probability for Dead Man's Gulch to slide. In this case, this slope does indeed have a high probability of avalanching. By exploring nearby areas with different aspects, slope angles, and terrain features you can make other assessments. For instance, that nearby 27-degree slope facing southwest may have a lower probability of sliding.

Remember, a stability assessment based on good information is powerful. You should be able to articulate this assessment with the members of your group. You may not arrive at a clear consensus, but the discussion will be beneficial. With all the information, options, and opinions on the table, you can make a plan for your ski descent.

PLAN

Now comes the decision-making. What *is* the plan for descent? At this phase, good group dynamics are critical but, unfortunately, often lacking. The factors that you should take into consideration about your group when reaching a decision include:

- the individual ski and avalanche skill levels
- the avalanche rescue gear that group members are carrying and their rescue skill level (see sidebar)
- the willingness to take risks

Within the scenario outlined here, a group of skilled skiers with strong avalanche sense may decide to pick another day to ski Dead Man's Gulch. A group of skiers with less avalanche knowledge and who are willing to take risks may decide to ski the gulch.

What *is* the right answer? There is no reason to call it so close that someone gets caught in an avalanche. Those who sadly do get caught may have missed some very obvious clues nature has provided. Attitude, ego, tunnel vision, peer pressure, laziness, indecision, complacency, poor communication, and fatigue can also get in the way.

You should not decide on a plan beforehand, for example, in the car. You should put one together after weighing your assessment against the group's skills. For example, a group with no avalanche rescue skills or equipment should *not* ski avalanche terrain. Most situations have a variety of alternatives.

If you do decide to ski a slope that has potential avalanche hazard, only one person at a time should ski it, using terrain features to go from safe spot to safe spot. (Some terrain features that indicate a safe spot include ridges that separate gulleys or large trees that are outside of slide paths.) Start at the edge of the slope and pick out trees to use as a possible exit point should the slope start to slide.

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Avalanche Transceivers and Rescue Gear

Avalanche transceivers transmit on a certain frequency that can be received by other transceivers on the same frequency. If you are buried in an avalanche while wearing a transceiver, your chances of being found are much greater. But even though transceivers can potentially save lives, they can't guard against avalanche deaths caused by trauma or suffocation. There is only a 50-50 chance of finding an avalanche victim alive after just 30 minutes of being buried. Therefore speed and knowledge of proper transceiver use are essential.

The United States has finally joined in adopting an international transceiver frequency. The process of switching from 2275 Hz to 457 kHz has taken six years. As of January 1, 1996, no one should wear a transceiver with only the old, single frequency (2275 Hz) as this frequency is being phased out. Dual-frequency transceivers have been used in the interim and are still accepted. The new single-frequency (457 kHz) models are state of the art. Some 457 kHz transceivers use a visual method, along with an external audio method, of detecting a signal. This negates the need for an earphone entirely. The range of the new transceivers is 50 to 70 meters, an improvement over the old models, which had a range of 20 to 35 meters. They are also much easier to use, with innovations such as external speakers and a visual search indicator.

Feeling comfortable with your transceiver is the true key to its success. Formal training will help you learn to use a transceiver most effectively. And be sure to set aside some practice time *before* entering avalanche terrain.

In addition to transceivers, every member in a backcountry party should carry a shovel and some sort of probe (a ski pole or skis work in a pinch, but collapsible probe poles are the best choice). Since the average burial depth of someone caught in an avalanche is 4 feet, it is essential to thoroughly probe the area that emits the strongest transceiver signal.

Once you have found a person through probing, shovel aggressively to unbury the person as quickly as possible. —*Scott Gill*

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CONCLUSION

This is only a fraction of the available information on avalanches, and the SOAP model is just one of many different frameworks you can use to make avalanche evaluations. Field experience and old-fashioned, sound judgment will help you develop the skills needed to make informed avalanche evaluations. Consider enrolling in a field-oriented avalanche course, as many skills cannot be mastered only by reading books or articles. There is no substitute for spending time in the field examining terrain, snowpack, and weather—your avalanche assessment skills will reach new heights! ◆

Scott Gill is ski patrol director at Bridger Bowl Ski Area in Montana, where he is also responsible for avalanche hazard reduction.

Digging "Hasty Pits"

A hasty pit can range from quickly scooping up snow with your hand to digging a large pit with a shovel. The goal is to examine a cross-section of the snowpack. Snowpits are used to find a weak layer and determine how weak it is. Weak layers are commonly characterized by a slab overlying faceted snow, surface hoar, recrystallized snow, or other types of lower-density snow. Ask yourself: Is there a slab present, and could it slide?

Dig snowpits in areas with similar aspect and angle to those that you intend to ski. I like to dig down to the weakest layers. I might need to dig a pit to the ground to determine where that weakest layer is. Once I've identified the weak layer, I will then dig several pits just to that layer to see how widespread it is. For example, you might want to dig several pits just to the surface-hoar layer in Dead Man's Gulch.

Formal field training will help you get a true feel for snowpit analysis. However, some good, quick tests for determining snow stability and weak layers include loading isolated columns of snow, such as in the Rutschblock test. Remember, there is a great deal of variability in the snowpack. It's better to dig several hasty pits than to base a decision on only one. —*Scott Gill*

▶ *continued from page 22*

necessitate an off-piste hunt for powder stashes if a few days have elapsed since the last snowfall. During the search, guests begin to understand how prevailing wind, different slope exposures, and alpine vegetation can trap and hold pockets of fluff. For guests, the hunt itself, aside from being instructive, can be exciting and immensely satisfying when they finally strike it rich!

To Go or Not to Go?

The fact of the matter is this: Many resorts do not allow instructors to ski off piste with clients. Some states have made it illegal for anyone to ski out of bounds from an area, whereas others require instructors to obtain a permit or license in order to conduct lessons outside ski area boundaries. At some areas instructors must notify the ski patrol when they take a group out of bounds and again when they return.

The bottom line is, investigate the policies of your ski school, area, and state before taking guests off piste. —*Bud Keene*

TERRAIN AS TEACHER

The ever-changing and unpredictable nature of off-piste snow conditions presents a wonderful learning opportunity for snow-sliders of all ability levels. Finely manicured runs, while allowing an unobstructed learning curve in ideal conditions, do relatively little to develop *feel* and *sensitivity* in riding or skiing.

On a typical backcountry run you can expect to encounter a variety of snow conditions that require instantaneous tactical adjustments. Differences in surface configuration, lighting, snow depth, and snow density conspire to throw you off balance. It can be a challenge just to stay on your feet.

In order to cope, the rider or skier must feel his or her way down the mountain, concentrating on keeping the board or skis sliding smoothly. Thoughts of mechanics largely fall by the wayside; feeling what is going on under the board or skis demands all attention. Without even thinking about it the rider or skier will call on complex combinations of basic skills to maintain a smooth flow.

Though a student won't increase technical understanding, his or her body will learn, and what the body learns it does not soon forget. Back on maintained trails, this heightened degree of sensitivity will help the student get more out of every turn.

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