

## Safety, Health & Fitness—

### Safety, Helmets Focus Of NSAA Meeting At Mount Snow

With a welcome powder dusting on the slopes of Mount Snow Ski Area, VT, the National Ski Areas Association (NSAA) road show opened Monday morning with more than 90 preregistered participants and, as chance would have it, 90 exhibitors. The recurring themes running throughout the educational programs were accidents, helmets, guest safety and recruiting school pupils as repeat visitors to the nation's ski areas.

Discussing long-term fatality trends, Dr. Jasper Shealy reported the range falls between a low of 28 to a high of 49 with a 38.7 annual mean number of deaths on the slopes. Skiers still rank 50% higher in the fatality category than snowboarders due to the inherent nature of the respective sliding devices behavior during a serious fall. Statistically, the most likely fatality will involve a male skier or rider, in the 10- to 50-year-old age range, traveling in excess of 14 mph-speeds at which helmets have little preventative properties during a direct impact collision-on a blue square cruiser trail with bluebird sky visibility conditions.

"There is no evidence today that the increased use of helmets has resulted in any observable decrease in national fatality rates," Shealy said. However, in the case of "glancing blows," helmets can be effective at preventing serious injuries at substantially higher speeds.

On the preventive medicine front, representatives from Stratton Mountain Resort, VT, outlined the success of their new mandatory 20-minute "Safety Education Session"-a terrain park educational program available free to anyone who visits the resort's double black diamond terrain park. To date, more than 4,000 participants have completed their "SES" requirement and "it is well received by park users and parents," says Seth Boyd, Stratton's risk manager. The seminar audience gave SES a rousing thumbs up, but it remains to be seen if this creative initiative goes far enough in preventing injuries.

### Watch for Effects of Altitude

High altitude and dry air affects skiers. Many Colorado and Western Mountain ski towns and ski areas are at well over 8,000 feet. The ski areas are usually higher.

Spending even short periods of time at a high altitude can cause discomfort at best, but Acute Mountain Sickness (AMS) can also be a danger. AMS is caused by the body's intolerance of the atmospheric pressure and lower amounts of relative oxygen in the air at high altitudes. It can cause light-headedness, dizziness, nausea, headaches, and insomnia and usually occurs at altitudes above 7,000 feet. So it isn't unusual for someone coming from a lower lying area experience some degree of AMS. The good news is that there are steps you can take to help yourself adjust to the higher altitudes of the mountains.

Stay away from alcohol at least until your body has had a chance to adjust to altitude and the additional stress of skiing all day. If you have no altitude symptoms it is probably alright to drink alcohol in moderation.

Drink in moderation and supplement any alcoholic beverage with equal amounts of water.

Drink twice as much water as you do at home. This will reduce the effects of dry air and dehydration due to exercise.

Eat foods that are light and easy to digest such as pasta, vegetables, fruits, and grains.

Try to take it easy the first day. Maybe go shopping or take an easy stroll through the village.

Difficulty breathing, a feeling of having fluid in your lungs, bluing of the lips, continued headaches, or dizziness are symptoms that mean you should get to lower altitude and see a doctor. Sometimes staying a night back at 5,000 feet helps the body recover.

If you have experienced altitude sickness in the past, choose lodgings at lower altitude and drive to the ski resorts.

### Extreme Weather Leads To Fatalities, Near Misses

There were a number of fatalities and near misses over the holidays, most of them related to extreme weather conditions in the western part of the nation. The National Weather Service issued a rare avalanche alert for parts of Southern Colorado Sunday afternoon as near-record snowfall fell on the region.

In Utah, five snowboarders were caught in an avalanche near Sundance on Dec. 27. Two managed to escape and the body of one was recovered, but efforts to recover the other two bodies have been hampered by snow, wind and cold. Authorities are looking into using ground-penetrating radar to locate the bodies.

In California, a cell phone was credited for saving the life of a snowboarder trapped in an avalanche near the Heavenly Ski Resort. Search teams on Monday located the body of a cross-country skier who was buried in a New Year's Day avalanche north of Donner Summit. Deep snow had hampered search efforts. In Idaho, an avalanche near Soldier Mountain Ski Resort crashed down onto a cabin, killing a couple as they slept.

A 25-year-old skier missing in the Alpentel Ski Area, WA, over four freezing nights was found alive Sunday night, just before another storm was to blanket the area with snow. Four teens survived a 17-hour ordeal after snowboarding out of bounds at Dodge Ridge, CA. They received citations for snowboarding out of bounds and may have to pay fines. None were injured.

Utah rescuers found nine people last week who had become lost in bad weather. The four separate groups included three snowboarders who spent the night in near whiteout conditions near Powder Mountain, as well as several groups of missing snowmobilers.

A journalist, David Bernard Lipschultz, 33, died Saturday after falling into a tree well in a popular out-of-bounds area on Aspen Mountain, CO. In Montana, Bozeman businessman Michael Cavanna suffocated in deep snow after going over a cliff on an advanced run at Bridger Bowl Ski Area.

In Colorado, an 84-year-old man died after a collision at Vail on Dec. 19 and a 49-year-old man collapsed and died at Winter Park last Friday. Shortly before Christmas, Bobby Layman, 16, went off a 25-foot tabletop in a Snowmass, CO, terrain park, landing on his head and chest. He was in the intensive care unit listed in serious condition. And a Pennsylvania teenager died last week after hitting a tree at Whiteface, NY.

## Testing Snowpack for Potential Avalanche

Obviously, not getting caught in an avalanche is the best defense. Experienced backcountry adventurers perform snow tests every single time they venture out. Often times more than once, since the snow's character can change so rapidly.

The most simple one is a pole test, just sticking your pole into the snow as far as it can go. Less resistance in the middle means a weaker layer of snow, and hence, greater instability.

The more complex tests involve digging a snowpit—four to six feet deep—from which to examine the snow. Warmed up with the shoveling, scrape off samples throughout the height of the pit to examine on a snow crystal card through a mini microscope. The card, with measuring lines and a handy reference chart, allowed one to analyze how big the crystals are and whether they are round and stable or faceted and unstable.

A shovel shear test is performed, isolating a one-square-foot block of snow and then pulling forward from the back of the block with a snow shovel. This test is performed to find weak layers. If the block pops out with a smooth surface near the bottom, it is a shear failure.

To judge the strength of the snow layers, a compression test is performed. Again, a one-square foot block is isolated and the snow shovel is placed flat on top. The block is tapped then times using only the strength of the fingers. If it doesn't fail, ten more taps are made using the wrist, then the elbow, and then the shoulder. The earlier the snow fails, the weaker the snow.

The final basic test, the Rutschblock test, is the most exact, because it simulates triggering a small slab failure by applying the force of human weight. For this test, a larger block of snow is isolated, one large enough for a skier to stand on. Force is applied by a skier stepping onto the block, and subsequently applying pressure or jumping on it. If it fails within the first few steps of this test, it indicates easy shearing and greater likelihood of avalanches. Watching the block from below, the testers could see exactly where and how the snow fails.