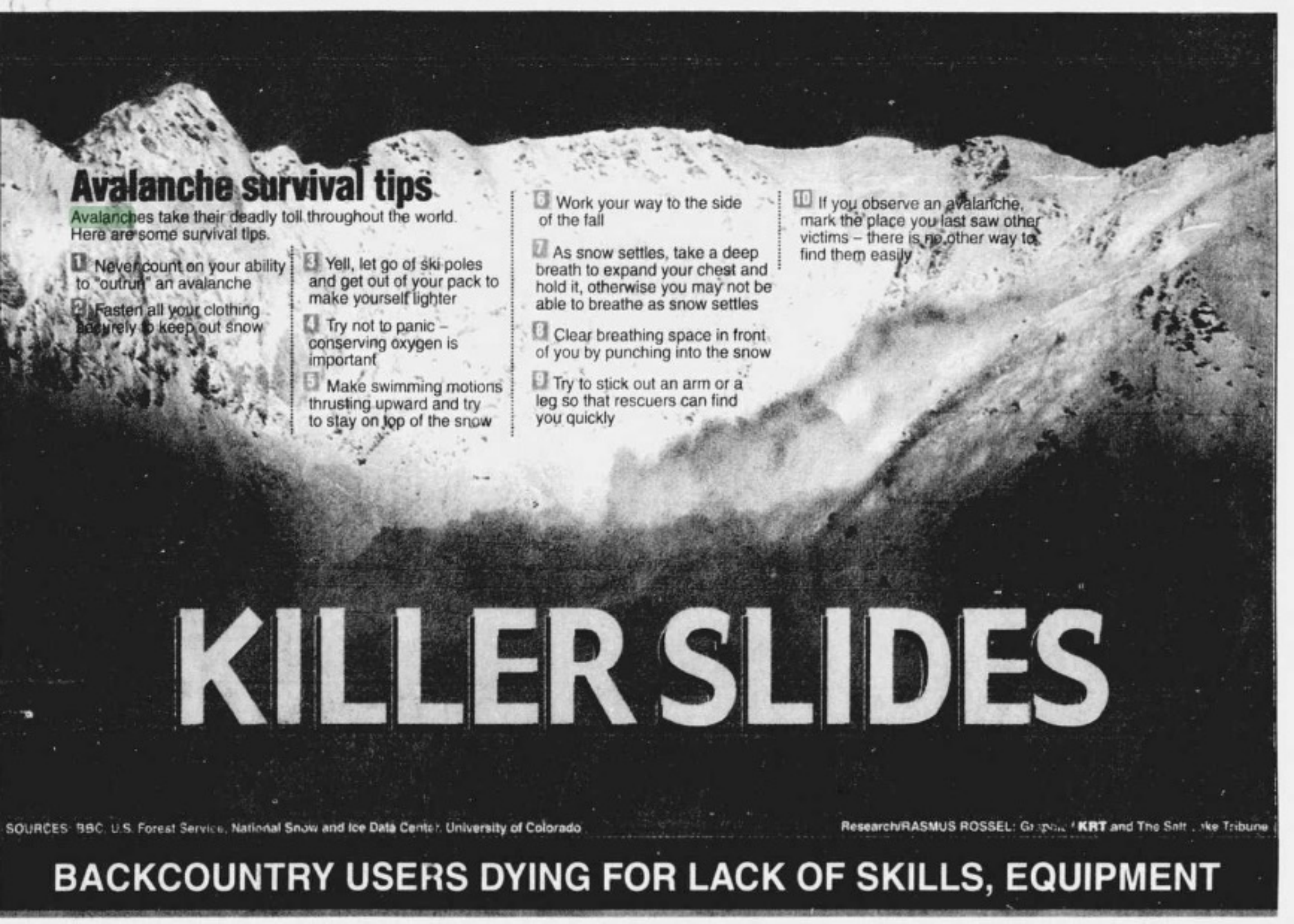




Avalanche survival tips

Avalanches take their deadly toll throughout the world. Here are some survival tips.

- 1 Never count on your ability to "outrun" an avalanche
- 2 Fasten all your clothing securely to keep out snow
- 3 Yell, let go of ski poles and get out of your pack to make yourself lighter
- 4 Try not to panic – conserving oxygen is important
- 5 Make swimming motions thrusting upward and try to stay on top of the snow

6 Work your way to the side of the fall

7 As snow settles, take a deep breath to expand your chest and hold it, otherwise you may not be able to breathe as snow settles

8 Clear breathing space in front of you by punching into the snow

9 Try to stick out an arm or a leg so that rescuers can find you quickly

10 If you observe an avalanche, mark the place you last saw other victims – there is no other way to find them easily

KILLER SLIDES

SOURCES: BBC, U.S. Forest Service, National Snow and Ice Data Center, University of Colorado

Research/RASMUS ROSSEL; Graphics/KRT and The Salt Lake Tribune

BACKCOUNTRY USERS DYING FOR LACK OF SKILLS, EQUIPMENT

BY BRIAN MAFFLY

THE SALT LAKE TRIBUNE

Paul Jepson and Jeff Clement were typical **avalanche** victims.

Jepson, a snowmobiler, and Clement, a snowboarder, were young men who knew how to ride the Wasatch's famed powder, but did not possess the skills and gear that could have saved them from snow slides.

Although Utah's **avalanche** threat has not been extreme because of a relatively stable snowpack, the 1998-99 winter is shaping up to be the state's most lethal **avalanche** season since the 19th century. In those days, slides crushed miners in their boarding houses in Little Cottonwood and Butterfield canyons with alarming regularity.

Nowadays, raging torrents of snow mostly engulf men on snowmobiles or snowboards, winter athletes

seeking adrenalin-fueled adventure in high-angle terrain.

Backcountry users can minimize their risks by recognizing warning signs, choosing safe routes that avoid "terrain traps" and calling the Utah **Avalanche** Forecast Center's pre-recorded forecast at 364-1581.

"You don't have to be able to do some fancy analysis of the stress layers in a snow pit," says Salt Lake City **avalanche** forecaster Tom Kimbrough. "It's easy to learn terrain features and route-finding skills to stay away from **avalanches**."

The Salt Lake area has numerous informational resources on **avalanches**. For details, call the forecast center or visit www.avalanche.org.

Most years, Utah slides kill between two and six backcountry travelers. But as many as seven people have died so far this year:

■ **Nov. 7** — Clement, 21, was fatally buried after shredding a hazardous line on Snowbird's Mount

Baldy. The Little Cottonwood ski resort had yet to open for the season and no **avalanche** control had been performed.

■ **Jan. 2** — Summers Neilson, 16, and Jesse Van Krebs, 17, were buried after a cornice broke under them while they explored tame-looking terrain in Sanpete County's Fairview Canyon.

■ **Jan. 20** — Darell Winegar, 49, and Craig Winegar, 46, failed to return from a snowmobile outing in Sanpete County. They remain missing and are believed to have perished in an **avalanche**.

■ **Jan. 29** — Jepson, 31, triggered a massive slide while ascending steep terrain on Mount Nebo.

■ **Feb. 6** — **Justin Heil**, 22, was snowshoeing up the west face of Salt Lake County's Lone Peak when he was buried in a slide triggered by his companions.

The common thread is that none of the victims

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Killer Slides: Adventurers Lack Skills, Equipment

■ Continued from C-1

carried standard rescue gear: beacons, shovels and collapsible probes.

"This perhaps reflects how aware they were of the avalanche problems," Kimbrough says.

The good news is that despite growing numbers of people trekking into avalanche terrain, U.S. slide fatalities have remained fairly constant during the 1990s — between 20 and 30 a year.

"In the late 1980s, half the victims were skiers. They've now dropped to 20 percent. It's other sports that are picking up the difference," says Dale Atkins of the Colorado Avalanche Information Center. Atkins is referring to snowmobilers, the recreators who are now most likely to find themselves under a lethal pile of avalanche debris.

The reason? Snowmobilers' improved two-stroke engines and treads can get into avalanche starting zones with remarkable speed, but their riders are way behind skiers in learning the basics of avalanche avoidance and rescue. Snowmobilers are also fond of racing up slopes as far as they can before arcing back down.

This practice, known as high-marking, is essentially a snowmobiler's version of Russian roulette if the rider has not assessed the slope's slide potential. High-marking is one reason snowmobilers account for more than half — 14 of 26 — of the U.S. avalanche fatalities in the 1997-98 season.

Worth mentioning are a few close calls involving Wasatch ski resorts last January.

Three Park City Mountain Resorts lift operators were fired and given citations for skiing out of bounds in the aftermath of a Jan. 5 slide. After illegally skiing past the resort boundary from the Jupiter lift toward some inviting powder shots, the staffers triggered a slide that partially buried two of them and covered Guardsman Pass road.

During a series of storms between Jan. 19 and 21, two ski areas experienced a resort's worst nightmare — slides in the resort after avalanche control had been done. Patrolers at one resort opened a run after bombing it. But skiers later unleashed a slide that the hand-thrown charge failed to release.

No one was hurt in that slide or a

small one at another resort, where a guest was buried up to his neck.

These incidents are rare, but they illustrate how unpredictable Wasatch avalanche conditions were in January. The culprit was an early-season dearth of snow. The skimpy snowpack lost its cohesiveness over time and became too weak to support subsequent layers when the "greatest snow on Earth" returned in abundance with a string of January storms.

In the central Wasatch, the new snow slid spontaneously, which probably led to a safer backcountry, says forecaster Kimbrough. But the January snowfall was lighter in the southern end of the range, and the difference may have cost Paul Jepson his life.

"In areas where they had less snow, it produced less avalanche activity and that left more slopes lingering around waiting to slide," the forecaster said.

Had Jepson listened to Kimbrough's avalanche forecast on Jan. 29, he would have learned that conditions were particularly treacherous in the southern Wasatch, where he went snowmobiling in Santaquin Canyon.

Jepson ventured onto a death trap, a 40-degree, east-facing slope, according to forecasters' analysis of the accident. A 1,200-by-400-foot slab came loose, sliding on a layer of snow that had degraded during the December dry spell.

The avalanche ripped 800 feet down Mount Nebo, snapping 6-inch spruce trees. Jepson died of trauma during the ride.

While avalanches plague Utah this year, other Western states are seeing fewer than usual fatalities. Idaho has had none, while Wyoming reported one; two people have died in Montana, which lead the nation last year with seven avalanche deaths.

"Knock on wood," says Bozeman forecaster Karl Birkeland, whose southwestern Montana service area has been the scene of several snowmobiler deaths. "This season has not been any more dangerous than other years. In our 10 years of

experience, it's on the lower end in terms of lengthy instabilities."

Here are some basic safety rules for backcountry tourists. The idea is to make choices that minimize the lethal power of a slide should one occur:

■ Always travel in a group. All members should have beacons strapped to their torsos and shovels and probes on their backs.

■ Avoid cornices and slide paths, recognizable by the swath of missing vegetation.

■ Ridgelines and valley floors offer the safest routes.

■ Cross hazardous spots one person at a time.

■ Stay clear of gullies.

Beacons, also called transceivers, emit a radio pulse. If one member of the party is buried, the others switch the device to "receive mode" to home in on the signal. But this skill requires practice and research shows that recreational backcountry travelers are slow in actual rescue situations, according to Atkins.

"Choose your friends wisely. They may be called upon to save your life," he says.

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