

# Safety of ski resort terrain parks questioned

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When skier Kenny Salvini, 23, took off on a terrain park jump at more than 35 miles an hour, it changed his life forever.

“The landing ramp was way too short,” Salvini recounted of the 2004 accident. “It dropped me down onto flat ice instead of dropping me down on to more of the slope landing which in theory would have prevented the injury that I got.”

Salvini was paralyzed from the neck down.



A snowboarder catches air at Heavenly earlier this month.

Photo/LTN

In recent years, terrain parks have become an increasingly popular attraction at ski resorts. These skate parks on ice are equipped with rails, ramps, and jumps that provide riders with all the thrills of a high speed roller coaster, without any of the restraints.

But as the NBC Bay Area Investigative Unit has learned, many of the jumps at these terrain parks have been designed absent any engineering or safety standards. Most ski resorts, like the ones found in Tahoe, have these terrain parks.

Now, experts within the engineering community are working to increase the oversight of the design of these jumps which now have the potential to launch jumpers as high as 90 feet in the air.

UC Davis engineering Professor Mont Hubbard has written several papers on the safety and design of terrain park jumps.

“You want to minimize that impact, or control it in some sense,” Hubbard said. “Typically, you can’t do that by just pushing snow around and hoping that it’s the right shape.”

Hubbard has served as an expert witness in several lawsuits against various ski resorts, including Salvini’s case against The Summit at Snoqualmie in Washington.

Hubbard believes that a properly engineered jump can be designed to reduce the impact of a jumper’s landing, preventing some of the more serious injuries.

“It accommodates for any place you want to land, and it makes it so that he lands equally softly everywhere,” Hubbard said.

According to a recent survey by the National Ski Areas Association, terrain parks can be found at 90 percent of ski resorts in the United States.

Chris Gunnarson is the president of Snow Park Technologies in Verdi. Gunnarson has been designing terrain parks at resorts like Northstar, Squaw, and Heavenly for over a decade.

“It’s impossible to design a safe jump,” Gunnarson said.

Snow Park Technologies is also responsible for dreaming up and constructing the jumps for professional competitions like the X Games and the Dew Tour.

Gunnarson argues that there are too many variables involved in designing a terrain park to accurately calculate how a jumper will land.

“As an industry there are not standards because the snow changes all the time. It’s kind of impossible to have standards.”

While there are no set safety standards or calculations involved in the design process, Gunnarson maintains that there is a lot of thought put into how the jumps are designed.

Skiing and snowboarding accident data is kept private by the resorts.

However, a recent study presented at a conference held by the International Society for Safety in Skiing, found that the rate of spine and head injuries at terrain parks is double that compared to other areas at a resort.

Hubbard says the key to preventing serious accidents like Salvini’s is calculating the distance from the jump to the landing.

“I had no idea that these jumps had almost little to no design involved with them,” Salvini said.

After his accident, Salvini received \$14 million in damages in his suit against The Summit at Snoqualmie.

Salvini said the judgment came as a shock to the ski industry since resorts are rarely found liable for injuries on the slope.

Salvini’s case was the exception as jurors found that he was injured in part because the jump constructed by the ski area was not reasonably safe.

While the jump has since been removed from the park, Salvini fears that jumps at other parks are similarly flawed.

“Something has to be done, but it doesn’t mean you need to tear down all these parks. With a little bit of science and some common sense, I think that these terrain parks can be

built safely," Salvini said.

NBC Bay Area reached out to The Summit at Snoqualmie for comment, however our calls were not returned. At the time of the trial, the company released a statement saying in part that "Voluntary participation suggests that a skier or rider accepts the risk associated with the activity."

NBC Bay Area also reached out to several ski resorts in the Lake Tahoe area to for comment on the issue to discuss the safety of terrain parks. None of them would agree to an interview on-camera.

The American Society for Testing and Materials has formed a committee to help determine whether a standard for terrain parks is possible.

The committee is made up of ski resort operators, engineers including Hubbard, and park designers including Gunnarson.

"I would certainly be willing to try," Gunnarson said, "but there is no proven model out there out there yet."