Avalanche educators have hopes that avalanche awareness lectures and avalanche warning programs can minimize this kind of accident.

86-6 FEBRUARY 13, 1986

Sundance, Utah

1 house damaged

Weather Conditions

Winter finally returned to the Wasatch Mountains with cold upper-level north-northwest flow on February 11. At the Utah Department of Transportation Alta study plot, at 8,800 feet and 14 air miles north of the Sundance Ski Area, light snow started to fall. By 0430 on February 12, 14 inches of very light snow had fallen. The average density of the new snow was only 4 percent (40 kilograms per cubic meter). During the day the flow aloft became zonal with strong westerly winds. The high temperature climbed to 26˚F as the west winds brought warmer air and more dense snow to fall. At 0330 on the 13th, 12 inches of very heavy, wet snow had fallen. The average density of this new snow was 22 percent (220 kilograms per cubic meter). The water equivalency for the 2 days of snowfall was 3.27 inches and climbing. Heavy, wet snow continued to pile up at a rate of an inch-an-hour during the day.

The heavy, new snow was creating an inverted snowpack and very dangerous avalanche conditions in the backcountry. The Utah Avalanche Forecast Center issued an avalanche warning on the morning of the 13th. The backcountry danger was rated extreme and large destructive avalanches were certain. The warning advised backcountry travelers to stay well away from the runout zones of large avalanche paths.

The warning would remain in effect until the 22nd. This was the start of a series of major winter storms and avalanches that would deal death and destruction across the western United States for more than a week.

Accident Summary

Real estate mogul Robert Allen constructed a mountain dream home just northwest of the Sundance Ski Area, about 10 miles east of Orem. Built in 1984, the 7,000 square-foot custom home, with furnishings, was valued at over a million dollars. The home also had spectacular views of Cascade Cirque and the Stewarts Cascades (waterfalls) on the east side of Mt. Timpanogos. The view included nearly 5,000 vertical feet of relief. The only problem was that the home was located in a known avalanche path. Two other homes were located in the runout zone; one above and one below the Allen house.

The Allen home was built in the willows and young aspens at an elevation of 6,700 feet, near the top of the runout zone of the Bearclaw Cabin avalanche path. The path is a steep northeast-facing gully directly above and southwest of the Sundance Mountain Home Development. It was named for a cabin built in the early 1970s for the Hollywood movie, "Jeremiah Johnson." That cabin was destroyed some years later. The Bearclaw Cabin path was identified in the Sundance Ski Area avalanche plan that was filed with the U.S. Forest Service in February 1984. An adjacent, but smaller path, the Water Tank Slide, overlaps the Bearclaw Cabin runout zone.

On February 13, Allen's dream home was reduced to a nightmare. At 1537 hours, a large avalanche released from the Bearclaw Cabin path and crashed into the rear of the house. The snow flowed over, around and through the home. Furniture and personal belongings were swept out of the house and scattered downhill in the debris. Fortunately no one was at the house when the avalanche struck, for certain death would have occurred. A week later snow was still piled 20 feet deep along the rear of the house. A short time later a Utah County building inspector condemned the wrecked house. The other two homes were only dusted by the powder cloud and were not damaged.

Structural engineers said the house could be repaired, but extensive work was required. They also stated the house could not be repaired and occupied until avalanche defense structures could be built. Experts Beat vonAllmen, Peter Lev and Stephen Schueler were hired to investigate the avalanche and to evaluate the site to best mitigate the hazard. Because of the steep slopes in the track and in the runout zone above the Allen house and its neighbors they determined defense structures