

## Avalanche incident claims one snowmobiler in Washington

### Summary

- **Date/Time of incident:** 3-19-2006, ~2 PM
- **Location:** Above Brown's Meadow near Tiffany Mountain; approximately 12 miles NE of Conconully, Okanogan County, WA
- **Activity:** Snowmobile
- **Incident:** 2 snowmobilers caught—1 partly buried, 1 totally buried and killed, found about 30 inches under snow near base of tree
- **Slide information:** Crown face ranged from 2-5 ft deep by ~200 ft across. Slide apparently released on faceted snow near the ground [HS-AMu-D2.5/3-R3.5-G].
- **Slope information:** slope angle at the fracture line estimated in mid-upper 30 degree range; slope was convex and wind loaded near the top and lacked any significant anchoring (see photos below)
- **Slope aspect and elevation:** W-NW exposure, approximately 6,000 ft elevation.

### *Preliminary accident information from News Media*

## Teen snowmobiler dies in Okanogan avalanche

03:40 PM PST on Monday, March 20, 2006

### [KING5.com](#) Staff

OKANOGAN Co., Wash. - A 17-year-old snowmobiler died Sunday in an avalanche near Tiffany Mountain, Conconully in Okanogan County.

According to authorities, Tyler Thompson of Omak was riding with several other snowmobilers, including his father, in the Browns Meadow area when one of the snowmobilers rode up the side of the bowl, triggering an avalanche. Tyler and his father were caught in the snow slide.

Members of the group quickly found his father but were unable to locate Thompson.

Search parties, along with a search dog were called to the area. After four hours, the dog led searchers to an area and they eventually located the teenager buried in the snow. It appeared he was carried down the hill and slammed into a tree.

Thompson's father was injured in the incident and was airlifted to an ambulance which then transported him to Mid-Valley Hospital. Tyler's body was taken to a funeral home in Twisp.

The Thompson family is well known in the county.

Posted: Monday, March 20, 2006 - 9:10 a.m. PST

## **Omak teen-ager dies in avalanche near Conconully**

An Omak High School honor student and athlete died March 19 in an avalanche while snowmobiling near Tiffany Mountain northwest of Conconully. Tyler A. Thompson, 17, Omak, died in the avalanche. His father, Frank Thompson, was injured, according to Okanogan County sheriff Frank Rogers.

The accident was reported around 2 p.m. Deputies, snowmobilers, and Okanogan County Search and Rescue personnel responded to Brown's Meadow near Tiffany Mountain. Search teams responded from the Conconully and Methow sides of the mountain. Vicki Buzzard of Aero Methow and her search dog were airlifted into the area by helicopter to begin the search, Rogers said. Thompson's body was located about four hours after the search began.

Rogers said it appears that Thompson was riding in the Brown's Meadow area with several other snowmobilers, including his father. One of the snowmobilers rode up the side of the bowl, which caused the snow to break loose. Thompson and his father were riding below and both were caught up in the avalanche. Other members of the party were able to get Thompson's father out and then they began to search for Thompson. They were joined by deputies and the other searchers. The dog alerted on a specific area and searchers concentrated their efforts on it and located Thompson's body.

"It appears that Thompson was carried down the hill where he struck a tree and was buried in approximately 30 inches of snow," said Rogers. Frank Thompson was airlifted from the scene to an ambulance, which transported him to Mid-Valley Hospital. Thompson's body was taken to Precht's Methow Valley Chapel, Twisp.

"This is hard on a community," said Rogers. "The Thompsons are well known in the county. Our thoughts and prayers go out to them." Omak principal John Belcher said.

Tyler A. Thompson was "an outstanding student" who played baseball and football. He also was involved in FCCLA and the Gear Up mentoring program for middle school students. Belcher said about 60-100 people gathered Sunday evening at the high school and the school will be open all night tonight, March 20. Extra counselors are on hand at school today to help students and teachers cope with the loss, he said. A letter to parents will go home with students today, he added.

### **Preliminary Accident Narrative**

Narrative prepared by Mark Moore from information provided by Larry Goldie, rescue leader and IFMGA Certified Mountain Guide, Owner/ Guide of North Cascades Mountain Guides

The avalanche incident occurred around 2 PM on a mostly fair and sunny Sunday afternoon (one of the first such days in some time for most NW mountains) with generally light winds reported in many mountain locations in the Washington Cascades. Prior to the day of the incident, a moist but cool southerly flow around a deep upper low tracking slowly southward

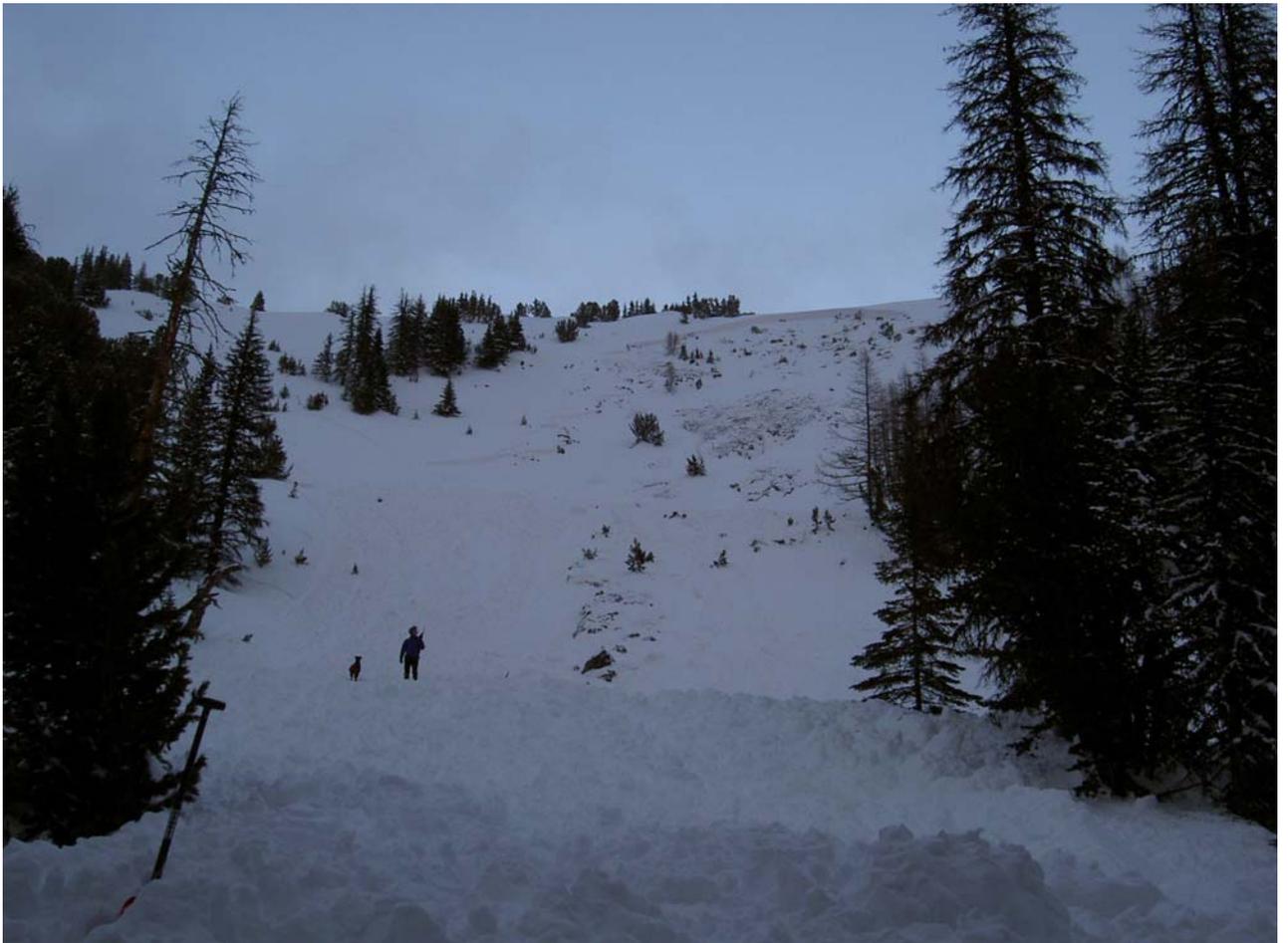
along western US coast had brought surges of light moisture northward over the region during much of the preceding week. During this period, most mountain reporting stations received new snowfall that ranged from a few inches up to around 24 inches, along with intermittent light to moderate southeast to southwest ridgetop winds that had loaded and slightly accentuated the recent danger on northwest through northeast exposures. Temperatures remained relatively cool throughout the recent precipitation with snow levels averaging 1-2000 feet, well below the 6000 ft elevation of the incident. Temperature data from several nearby stations indicated that although the day of the incident was the warmest of the past week, the maximum temperature still only reached into the low 30's F at the 6 to 7000 ft level. However, the solar effect on this day late in the winter was significant on sun exposed terrain in other areas, and its influence in this location may have contributed to some softening of the snow surface (strain softening) although not necessarily enough to produce a crust [Such softening could have in turn allowed the effects of the snowmobilers to penetrate further into the snowpack (thus reaching the buried weak layer) than during recent generally colder days].

In any case at the time of the 2 to 5 ft slab avalanche release, one snowmobiler was apparently riding high across the slope with the two subsequent victims on machines lower in the runout. As mentioned in the summary above, the avalanche released from a steep (about 35-40 degrees), convex and generally wind loaded slope facing to the west-northwest. It most probably released on facets near the ground although no formal snowpit data is available. Once released the 200 ft wide dry climax (hard slab) slide traveled an estimated 5-600 ft vertical before reaching the runout and flowing into intermittent timber (see photos below). The slide has been preliminarily classified as a HS-AMu-D2.5/3-R3.5-G with debris depths ranging from 2 to 10 ft. (**H**ard **S**lab-**A**rtificial release by snow**M**achine, **u**nintentional-**D**estructive potential 2.5-3-**R**elative to path size 3.5-releasing on the **G**round). Rescuers reported that there was no surface crust and the snow was still cold, dry and powdery. When the slide came to rest, one of the victims was only partly buried and was immediately dug out (either by himself or assisted by companions)—with initial reports indicating injuries primarily confined to cuts and bruises. The other victim was totally buried and was found some 4 hours later by dog and probing. The victim was found about 12 feet above and slightly off to the side of his machine, and wrapped around a 2-3 ft diameter tree approximately 30 inches under the snow surface. Preliminary information indicates that the victim may have died as a result of blunt trauma from contact with the tree. Apparently neither of the victims were wearing beacons, although several of the riders in the area had beacons. While several shovels were in evidence when the SAR team arrived, apparently no one had probes as those on the scene were using sticks to search for the lost snowmobiler.

It is unclear at this time whether any of the party had avalanche training or if they had done any stability tests prior to the incident.



**Figure 1. Photo of the crown and some of the path (approximately 5-600 ft vertical fall) . Note timber in right foreground. Picture courtesy Larry Goldie.**



**Figure 2. Photo of slope, fracture and debris. looking upslope toward the east-southeast. Photo courtesy Larry Goldie.**

### **Ancillary Weather and Snowpack Information:**

As indicated by the NWAC forecasts issued both the day prior to the incident (3-18-2006) and on the day of the incident (3-19-2006), a MODERATE danger existed for human triggered slabs on wind loaded terrain. While deep slab instability was not specifically mentioned, NWAC had received no recent reports from anywhere in the forecast area that deep slab instability was a threat. This points out the fact that no matter how good a forecast is, it should be used as starting point for any back country danger evaluation. Back country travelers should always update and reassess forecast information, arriving at their own knowledge of the danger dependent on the terrain and snowpack they encounter.

### **Avalanche Forecast issued on Saturday, March 18, 2006**

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BACKCOUNTRY AVALANCHE FORECAST FOR THE OLYMPICS WASHINGTON CASCADES AND MT HOOD AREA

NORTHWEST WEATHER AND AVALANCHE CENTER SEATTLE WASHINGTON

0830 AM PST SAT MAR 18 2006

NWAC Program administered by:

USDA-Forest Service

with cooperative funding and support from:

Washington State Department of Transportation

National Weather Service

National Park Service  
Washington State Parks and Recreation Commission  
Pacific Northwest Ski Area Association  
Friends of the Avalanche Center  
and other private organizations.

This forecast applies to back country avalanche terrain below 7000 feet and does not apply to highways or operating ski areas.

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#### ZONE AVALANCHE FORECASTS

##### OLYMPICS, WASHINGTON CASCADES, MT HOOD AREA-

Moderate avalanche danger above 3 to 4000 feet and low below early Saturday except locally considerable on northeast through southeast exposures above 5 to 6000 feet. Danger gradually increasing later Saturday morning and afternoon, mainly on steeper sun exposed terrain where considerable danger should develop. Danger decreasing Saturday night and early Sunday, but increasing again later Sunday morning and afternoon, especially on southeast through southwest exposures where considerable danger is expected. Danger decreasing Sunday night, especially at lower elevations and on previously sun exposed terrain.

##### SNOWPACK ANALYSIS

Generally small to intermittently moderate amounts of low density snow have accumulated on a daily basis in most locations during much of the past week, with total snowfall accumulations ranging from a few inches to around 24 inches. Along with intermittent sunshine that has helped to partially settle and stabilize snow on sun exposed terrain, this weather has resulted in a moderate avalanche danger in most steeper terrain above 3 to 4000 feet and low danger below where warmer temperatures and greater settlement have produced an overall more stable snowpack structure. However, some recent wind transport above 5 to 6000 feet has created slightly more cohesive but generally shallow wind slabs on northeast through southeast exposures where locally considerable danger is expected. Several human triggered slabs ranging up to 12 to 18 inches were reported releasing on steeper north and northeast facing slopes at the 5500 to 6000 ft level off Shuksan Arm near Mt Baker on Friday. Also, while sun breaks have been rather limited in most locations during the past week, some loose or wet loose slides have been reported releasing on south facing terrain where the sun has broken through and warmed and melted surface snow.

##### SATURDAY-

Partly to mostly cloudy skies with light to occasionally moderate showers early Saturday should give way to partly cloudy skies and scattered light showers mid-day and Saturday afternoon. Although decreasing winds are also expected in most locations, previous wind transport and increasing sun breaks should help maintain or slightly increase existing avalanche danger during the later morning and afternoon hours, especially on slopes receiving sunshine. More human triggered soft wind slabs from 6-18 inches should become probable on wind loaded terrain on Saturday, especially on slopes that receive brief sunshine and surface snow is able to become slightly more cohesive and able to propagate fractures. On southeast through southwest exposures, recently received new snowfall should be very susceptible to the destabilizing effects of sunshine, and melting snow releasing from rocks, trees or cliffs may easily trigger natural loose or wet loose slides on steeper slopes below. Human triggered loose or wet loose slides should also be probable on steeper sun exposed terrain. While most such releases should initially be relatively small, in areas receiving significant sunshine some may entrain all of the recent snow since weak crust formation last weekend.

SATURDAY NIGHT, SUNDAY, SUNDAY NIGHT-

Decreasing clouds and showers late Saturday should be followed by a clearing trend in most areas Saturday night. This should allow for decreasing danger as previously wet surface snow refreezes and strengthens, producing a thin but increasing surface crust. While some cumulus may develop later Sunday morning and afternoon, overall considerable sunshine or filtered sunshine is expected along with light winds and slightly rising freezing levels. This should once again produce generally increasing danger on sun exposed terrain where slightly larger human or naturally triggered loose or wet loose slides should become probable mid-day and Sunday afternoon after the sun melts and weakens a thin crust from Saturday. Some isolated slabs or wet slabs may also be triggered by larger loose releases on south facing terrain. Also, on more shaded slopes that receive only brief or partial sunshine, associated surface melt may make previously loose and relatively cohesion-less surface snow more cohesive and slab like and able to propagate fractures. As a result, back country travelers should assess the changing snow surface and stability often, especially if traveling across differing aspects and elevations. Mostly fair weather Sunday night should allow for decreasing danger as wet surface snow refreezes and strengthens and any recent wind slabs continue to settle over slowly strengthening weak layers.

Backcountry travelers should be aware that elevation and geographic distinctions are approximate and that a transition zone between dangers exists. Remember there are avalanche safe areas in the mountains during all levels of avalanche danger. Contact local authorities in your area of interest for further information.

NWAC weather data and forecasts are also available by calling 206-526-6677 for Washington, 503-808-2400 for the Mt Hood area, or by visiting our Web site at [www.nwac.us](http://www.nwac.us).

Moore/Northwest Weather and Avalanche Center

### **Avalanche Forecast issued on Sunday, March 19, 2006**

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NORTHWEST WEATHER AND AVALANCHE CENTER SEATTLE WASHINGTON

0830 AM PST SUN MAR 19 2006

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## ZONE AVALANCHE FORECASTS

### OLYMPICS, WASHINGTON CASCADES, MT HOOD AREA-

Sunday morning: MODERATE avalanche danger above 5000 feet and LOW below.

Sunday afternoon: Danger increasing to MODERATE all elevations and aspects.

Sunday night and Monday morning: Overall LOW danger.

Monday late morning until evening: Danger again increasing to MODERATE all elevations and aspects.

### SNOWPACK ANALYSIS

Almost no new snow was reported this morning, but in the past six days, total snowfall accumulations have ranged from about 4 to 20 inches. This morning the top snow layer, which is made up of the new snow from the last few days, has settled 1 to 3 inches, and that shows an overall stabilizing trend in the surface layer. Temperatures have remained cold enough to keep soft, dry snow on northwest through northeast facing slopes, and that is where the best quality snow for backcountry touring will be found. No easily-identified weak layers have been reported in the top snow layers.

Meanwhile intermittent sunshine and warmer temperatures on southeast to west facing slopes have settled, densified, and refrozen the surface snow, forming hard or breakable crusts.

Lastly, at elevations above 5-6000 feet there are pockets of wind slab that formed several days ago, and could produce some shallow human-triggered soft slab releases, especially on steep north through east aspects.

Today sunshine will soften those sun-exposed slopes once more, but cool air temperatures should keep these slopes from getting wet other than right on the surface. Still though, this will increase the chance for shallow surface wet or damp releases on steep sunny aspects both Sunday and Monday. This should refreeze over night, forming a strong crust on east to south to west aspects. More northerly aspects should stay cool and dry, and should see continued slow settlement and strengthening in the surface snow layer.

### SUNDAY AND MONDAY-

Mornings will begin with hard sun crusts on southeast through west aspects, but then clear skies and plenty of sunshine will soften and thaw crusts on southerly aspects by afternoon. That means the avalanche danger will vary from LOW early in the day to MODERATE by afternoon, because of the chance for surface wet releases.

The cooler northerly aspects have high-quality dry snow, especially above 5000 feet. And above about 5000 feet along the ridges, winds from several days ago formed a few pockets of wind slab. Therefore the avalanche danger should remain overall MODERATE both Sunday and Monday on all northerly aspects and along the ridges, because of the chance for human-triggered releases in the new snow layer that formed the last 6 days. There have been no significant weak layers observed and no reports of crack propagation the last 2 days. Therefore we think any human-triggered slabs should be small, but small does not mean harmless. We feel that normal backcountry caution is adequate right now.

One more thing to watch for: there has been recent cornice formation along the ridges, and with warming temperatures these will likely be unstable. Stay away from cornices; they are too unpredictable.

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Williams/Northwest Weather and Avalanche Center