

## NORTH CASCADE HELICOPTER SKIING RISK

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### ABSTRACT

Five seasons of operation with no serious accidents were halted last season (1988) because of insurance unavailability. The situation resolved itself for this season, at least, and we will be operating again. History will ultimately prove whether Canadian style helicopter skiing, using natural avalanche paths as ski runs, is insurable or not. This presentation is designed to let the avalanche community in on operational and geographic specifics, just south of the Canadian border.

### GEOGRAPHY

Mazama, Washington State, is the base for helicopter skiing on the east side of the North Cascades. It is at the head of the Methow Valley in Okanogan County and the first major habitable valley south of British Columbia's Manning and Cathedral Provincial Parks. The mountain regions surrounding Mazama are usually known as "the North Cascades" to the west or south, and "the Okanogan Highlands", to the north. North Cascades National Park, the Chelan-Sawtooth Wilderness, and the Pasayten Wilderness eliminate most of the area for heli-skiing already. Legislated Wilderness Areas and National Park backcountry areas in the United States, forbid all motorized recreation. The North Cascades Highway, leading from Mazama across the North Cascades to Puget Sound, effectively splits this Wilderness reserve complex, and it is also penetrated to the Cascade crest by the Harts Pass dirt road, running northwest out of Mazama. Non-Wilderness lands suitable for heli-skiing surround Mazama for five minutes helicopter flight time to the north or south, and extend up to twenty minutes to the west, along and between the road corridors, an area known as "the Golden Horn country". Skiable peaks range from 2,000 to 3,000 meters in altitude, with skiable snow down to below 1,000 meters. Cross country track skiing has been developed successfully on, and just above, the valley floor at 700 meters elevation.

Little known to the skiing world until recently, the Methow's ideal commercial skiing qualities were discovered by the Aspen Corporation in the 1970's, and with their exploration team came Eric Sanford. Eric quickly recognized the potential for both cross country and helicopter skiing. His Liberty Bell Alpine Tours came into being as a result, and he began exploring the potential heli-skiing terrain immediately on cross country Telemarking skis. Aspen meanwhile had been forced by environmentalists, and capitol gains tax laws, to invest their parent corporation's Star War's windfall profits into the facility we occupy today, Whistler-Blackcomb.

I. Ski Guide, North Cascade Helicopter Skiing, Mazama, WA USA

Sandy Butte, the mountain proposed for lifts above Mazama, is very similar to Blackcomb, except that its glacier skiing is separated from its trail skiing by four kilometers of cross country terrain at the 2,000 meter level. It's snow is also much more subject to temperature gradients.

The United States Supreme Court is being used by the United States Forest Service to test their environmental impact statement process in this Early Winters case. Appeals through this process have so far halted a local, post-Aspen, attempt at lift development. Meanwhile the Methow Valley Ski Touring Association (MVSTA) successfully organized the valley's tourist business into promoting cross country. It was at the first Telemark Camp, in 1980, above Mazama, that Sanford first propositioned me. I replied that the terrain was too good for Telemarking, to spoil it with heli-skiing, a judgement I soon reversed. A bid by Wasatch Powderbirds forced MVSTA's hand. Eric Sanford apprenticed two seasons in Canada and put in his own bid, while Powderbird's floundered in local politics, another colorful but separate story. Eric convinced Don Portman - ski meister at Sun Mountain Nordic Ski Resort in the Methow, and myself - Park ranger/naturalist and Telemark evangelist, to be his lead guides. Our user days rose to a peak of over 600 before the insurance crisis.

#### AVALANCHE RISK

We knew from our skiing concentrated around the immediate Mazama area that complicated Temperature Gradient (TG) snowpacks were common, and we feared for the worst sort of unpredictability. Eric, Don and I purged our souls with a religious pilgrimage up to the British Columbia Institute of Technology's Level II here, and modeled our recording charts after Whistler's. Arriving with sixteen years of professional snow safety experience, I was assigned the forecasting duties. Often this meant filling an odd extra seat in the helicopter to spend time digging more pits, or to be sent out first through the mine field in case my prediction was wrong.

What we found was a magic line just west of Mazama that virtually ate TG for breakfast. Our pits west of that line showed the same basic layers, as up on Sandy Butte, but the TG components were non-existent or very short lived. More precisely, if there was Mountain Hemlock at the top of a run or Silver Fir at the bottom, the avalanches were almost always direct action, storm related, events. Cold continental air masses, common in the Methow Valley, are apparently held there by aggressive warm maritime masses, overriding the inversion and stabilizing much of our high altitude snowpack.

Being cross country skiers at heart, we quickly evolved a gig dubbed "super-tur", to give our lone pilot as much flight time as our little one ship operation could muster. Ninety percent of our work was with the five place ASTAR 350-D. While the plastic boots learned beacon procedure, we lifted as many as six loads of pin skiers five minutes north to the 2,000 meter level of Goat Peak, just north of Mazama. Up there I taught Telemarking, dug another snow pit, radioed a confirmation or denial of my before breakfast predictions, and led a natural history tour back to the lodge. Eric and Don, along with other guides as needed, would handle up to four groups of alpine skiers.

I typically found lots of whoomp TG, while Eric and Don found pockets of wind slab. On a few really scary, but sunny days with lots of skiers, I'd go along with the alpine skiing to bird dog, and on one such occasion the whole lee side of Cut throat Pass released as a quarter mile long slab, but not from my stomping on it. Instead it temperature released about noon while Don was leading his group a respectful distance back from the edge.

Eric took the worst dusting of those five years when spindrift, off cliffs above him on Silver Star, consolidated enough to run out over a dry cirque pond, and up over the old terminal moraine they'd landed on. It buried most of their ski equipment before they had a chance to put it on, and was apparently triggered by the helicopter taking off.

Don went for some short rides on wind slabs, but was never buried. I kicked lots of such pockets, but was only worried myself once, when a wet slab went two thirds the distance toward the helicopter waiting below. Our clients tweaked knees, and ankles, one broke her arm windmilling into a tree, and our most serious was a dislocated hip by a Telemarker on easy terrain. None of these injuries were avalanche related, and none of our avalanches were TG related.

#### FUTURE OPTIONS

I see three possibilities for handling future avalanche risk: continue heli-skiing, nordic only, and snowcat skiing.

Expansion of Sun Mountain Lodge and revival of Early Winters lift resort proposal has tipped the scales in favor of heli-skiing again. My recommendation, in this case, is to run a similar operation with just one ship, or possibly two for loading variety options and mechanical back up. The financial structure should allow for not flying alpine skiers on stormy days however, because use is limited then too often to the TG country close by Mazama. Either that or flying in snow clouds, which increases the risk of flying itself. The heli-ski shut-down then acts as a red flag alert to Telemarkers, as well as a potential rescue service standing by at base. The risk-safety continuum, so intensely debated lately by legal minds with the ski industry, would be pushed further toward the safety end of the spectrum for all skiers in the area, especially those not using the helicopter except for rescue.

The purist option, without heli-skiing, forces most of the Telemark action into the TG zone. It could be done with good guides, but to err is all too human, and as Telemarkers get better there will be inevitable heli-ski style pressure to ski steeper terrain. Maximizing guide competence in the nordic arena is a vital but again separate story. A system of huts west of the TG line could in any case, greatly increase safety. Right now, in 1988, however huts are even more politically sensitive than heli-skiing. Removable huts seem to desensitize this political stumbling block, and a hut style is evolving which may lend itself to spring and fall transport by trailer up to unused campgrounds for the ski season. Extending the state plowing efforts further west up to Silver Star gate, or a new gate at Cut throat, for more of the fall and spring, would also help

decrease Telemarker exposure to TG.

Hagglunds-Prinoth 30 MPH oversnow shuttle buses, or similar vehicles in the future, may also provide access to the low TG zone. The snowed in North Cascades Highway is an ideal, highly scenic route for them, except up near the top where avalanches fill in the road bed completely. Here a state run snowcat could blade out a path after storms by pushing snow over the edge. This could reduce spring opening time and expense greatly, and might pay for itself on that basis alone. A combination of these first and last future options would have many synergistic effects, if none is overdone. The illusion of nordic purity has very definite, and commercially proven, benefits. It needs to be preserved in the Methow to avoid threatening the valley's principal source of winter revenue. This is a hard to grasp fact, especially for locals, but vital to their economic survival. Reduced flight times from a snowcat accessed hut and hostel system, along the road corridors, could provide minimum avalanche risk and maximum recreational shoulder season use. Minimum environmental impact, to recreational user day ratios, could also go hand in hand with skier protection from all risks, including avalanche.