



Friends of the  
Northwest Weather  
and Avalanche Center

# Newsletter

Fall 2008

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## Save the Date

### Snowball Dinner and Auction

An End-of-Season Celebration to  
support NWAC

Friday, April 10 at the Ballard Elks  
Club



Tracy Belding enjoys the sun in the Crystal backcountry

Photo: Benj Wadsworth

## A Busy Summer and Fall

By Benj Wadsworth, FOAC

Finally! It is late December and the snow is falling. We have all been restless and a bit nervous. Where's the snow? What are the NWAC forecasters saying? When's it going to start dumping? Should I plan a ski trip for Christmas? It seems our questions have been answered.

In addition to getting restless for some snow, all of us on the board of the FOAC are scrambling to wrap up some projects we have been working on all summer and fall. It's been an eventful off season for both NWAC and the Friends. We have continued to work with Washington State

Parks on their analysis of NWAC and development of recommendations to ensure the future of the center. We are looking forward to their final report by the end of the year and are ramping up to work with the legislature in January to ensure that they act on the report in a way that opens the door to a positive future for NWAC.

We also embarked this summer on an ambitious project to update the NWAC website, which will be merged with the existing Friends website. This project will incorporate a graphic interface for NWAC's forecasts and vastly improve the user in-

*(Continued next page)*



terface. Keep an eye out for the new site sometime this winter.

On the education front, we have continued to partner with the Alpine Safety Awareness Program and are in the process of developing a new avalanche awareness curriculum targeting winter recreationists that may not be aware of basic avalanche hazards. The **Know the Snow Initiative** is being introduced this month in an effort to develop a pool of instructors with experience traveling in avalanche terrain. If you are interested in being trained as an instructor, please don't hesitate to contact us via e-mail at [info@avalanchenw.org](mailto:info@avalanchenw.org).

# Winter 2008/09 - WADADM!

By Mark Moore, NWAC

Early late fall or early winter greetings to all! As I have been thinking about writing this "winter-to-be" summary, I have been waiting for a defining moment in the very-slowly-evolving-to-date winter season. Well, that moment has arrived, and I can loudly exclaim: "What a difference a day makes!... or ...WADADM!" As is obvious from the two pictures below (one dated 12-12-08 and one 12-13-08 (I'll let you decide which), twenty-four hours can make one helluva difference in the snow conditions, as well as the emotional and spiritual outlook of Northwest snow aficionados.

It is now several days after this season changing event, and while the seasonal forecasts are still calling for a "normal" winter, it has surely seemed prior to this week that perhaps this "norm" definition needs adjusting. However, as we all know, normals are composed

In the fundraising world, we celebrated another successful SnowBash in early November, and we are in the process of planning a second fundraising event this spring. Save the Date for the inaugural SnowBall Dinner and Auction on Friday, April 10 at the Ballard Elks Club. We are looking forward to a fun evening in support of avalanche safety in the Northwest.

Finally, as you head up into the snow this winter, we hope you will take a few hours to get that transceiver out, practice a few searches, and review your avalanche awareness skills. Here's to a fun, safe winter in the mountains.

of highs and lows, minimums and maximums...and yes, anywhere in between. Normal in this context just means that official long range weather forecasts anticipate no Niñas or Niños to otherwise sway the weather one direction or another. "Normal" for northwest mountain snow depths means we can have almost anything.

This NWAC web page ([http://www.nwac.us/education\\_resources/NW\\_Snowdepths/Northwest\\_Snowdepths-Average\\_Minimun\\_and\\_Max\\_by\\_area.htm](http://www.nwac.us/education_resources/NW_Snowdepths/Northwest_Snowdepths-Average_Minimun_and_Max_by_area.htm)) contains some summary graphs of NW normal seasonal snowdepth evolution by location (for you snow geeks out there, you can plot your own cool seasonal comparison charts at this Washington State Climatologist link (<http://www.climate.washington.edu/snowdepth/>) . Whatever these charts show for past years, the current cool/cold northwesterly flow combined with sev-





eral disturbances should at least give most back country travelers the chance to sample the normal without serious rock or vegetative residue clinging to and otherwise damaging new Christmas gear.

**The near term:** So what does the presence of a large and very high amplitude upper ridge covering much of the Gulf of Alaska, and indeed extending well into interior Alaska, say about the shorter term weather for the early part of the winter? Well, in most instances, a large blocking feature like the current offshore ridge tends to be a defining feature for global circulation and may pre-dispose us to more of the same cold weather over the short term.

Indeed, most current longer range (1-2 week period) weather forecast models indicate that relatively cool to cold temperatures should continue in the region, with most incoming weather disturbances moving over the top of the ridge and then south or south-eastward over the area in a north to northwesterly flow aloft. This should help provide further episodes of rather light, low density snow at very low freezing levels (like near sea level). Not exactly great base building material, but if we get enough of it there shouldn't be too many complaints, and it will eventually fill in and cover all of those rocks, bushes and other large terrain features still very much in evidence.

**The longer term:** Beyond a week or two, even blocking features like our offshore ridge tend to break down, move or be replaced by some other feature since they affect and are affected by other development in the hemispheric global circulation. However, on the flip side, features like this may be more persistent and reform in some fashion over a longer period. The end result is that we really don't know. While the current seasonal forecasts for January to March show a slight bias toward colder than normal conditions in this otherwise "normal" season, precipitation forecasts keep us clearly in the equal opportunity category (normal precipitation or equal chance for above, below or normal precipitation amounts).

Unfortunately, a shallow mid-December snowpack combined with frigid temperatures pre-disposes the region to significant avalanche problems in the short term and perhaps the long term, all depending on how this "normal" winter evolves. At the very least, the cold tem-

peratures expected in mid-late December should substantially facet and weaken the existing still relatively shallow NW snowpack, producing some well developed depth hoar in places and a very weak snowpack structure generally. Whenever a more normal warmer and wetter westerly develops and deposits substantial amounts of wet, heavy and higher density snow over the facets, egad, watch out. And even larger accumulations of more low density, wind driven snow should create very sensitive and brittle slabs being deposited over a potentially fragile snowpack composed of lots of facets and some surface hoar as well. And once again, depending on how the remainder of the winter unfolds, the impacts of this early season snowpack development may persist until spring. Remember some of the really big full depth slides that haunted a variety of areas through much of last season? Well, they may be back.....

The message here is to continue to be aware and stay tuned to the evolution of our snowpack. It's unique every year, always challenging and changing...and if WADADM is true, as it certainly seems that it is, then WADAHM (what a difference an hour makes) may be an important corollary.

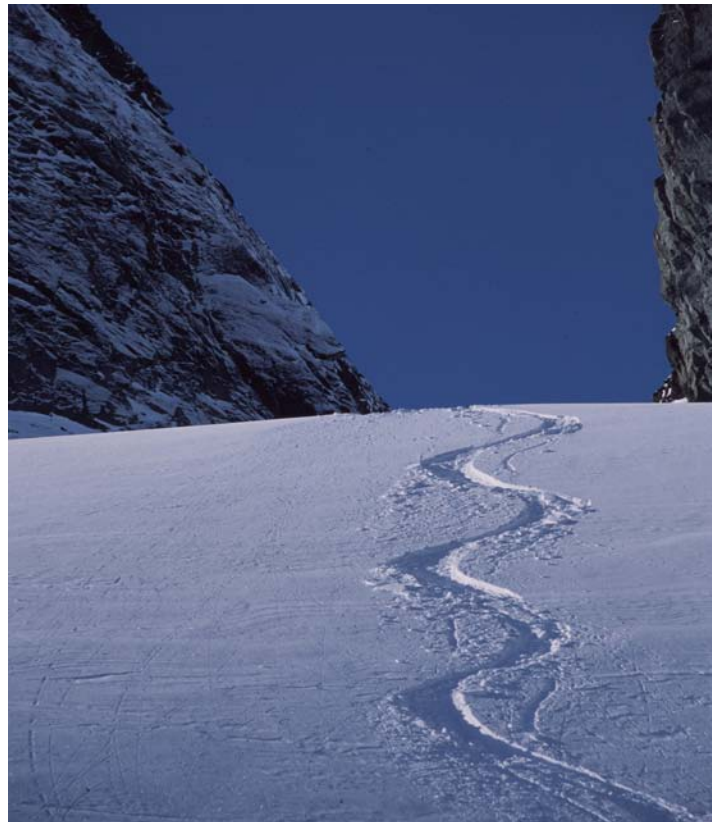


Photo: Benj Wadsworth

The "normal" curve means there will be days like these.



# Lessons from ISSW 2008

By Roland Emetaz

From September 21 – 27, approximately 850 avalanche professionals from around the world gathered in Whistler, BC for the 16<sup>th</sup> biannual International Snow Science Workshop. Seventy-five talks were presented and there were over 100 poster presentations. The workshop provided a wealth of information, much of it applicable to recreational backcountry travelers. This article highlights a few of the presentations of particular interest to those of us that recreate on snow.

## *Shoveling*

On the topic of avalanche rescue, Bruce Edgerly, vice-president of Backcountry Access, addressed the importance of shoveling in the rescue of an avalanche victim. From 1995 – 2008, slightly over half of all North American avalanche victims were wearing beacons and in almost all beacon rescues, the evacuation (digging) took more time and was more physically demanding than the beacon search phase. Edgerly suggests four elements that are important in the digging phase of a rescue:

1. Leave the probe in place and start the excavation downhill of the victim;
2. Create a large starter hole approximately one to two times the burial depth of the victim and one “wingspan” wide;
3. If possible, use two shovelers with one chopping and moving snow in a deep burial as the other clears it from the hole; and
4. Create a platform downhill of the victim that can be used for first aid and evacuation.

For more information on effective shoveling techniques, check out <http://www.backcountryaccess.com/english/research/documents/EdgerlyAtkinsISSW06.pdf>

## *Swimming*

Theo Meiners of Alaska Rendezvous Heli Guides gave an intriguing presentation on survival strategies for “swimming” in different parts of a flowing



Photo: Jeff Gaillard

avalanche (see p. 8). The effectiveness of swimming has recently been questioned, with the belief that in many cases the victim is disoriented and has little sense of control. Several avalanche professionals have suggested that it may be better to put your arms around your neck so that once stopped you are able to dig an air space.

However, Meiners suggests that if you do have some feeling of control, you should follow the following survival strategies for different parts of the flowing avalanche:

1. Once an avalanche is released, get off the moving slab or self arrest on the bed surface.
2. If you do get caught and swept away, try to get towards the back, or tail of the slide – there is less mass in this area and you are more likely to be left behind.
3. In some cases backstroking and using a “leg rolling” motion may help you stay near the surface and move towards the flanks.
4. If possible avoid the head of the avalanche

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– the turbulent forces increase the odds of injury and deep burial. Never swim downhill.

5. If you feel the slide slowing down and burial is imminent, use one arm to clear space in front of your face and the other to reach for the surface. Stay balled up and remain calm.

### Trauma

Jeff Boyd with the emergency department at the Mineral Springs Hospital in Banff, Alberta presented an interesting paper comparing the cause of death in the 204 avalanche fatalities that have occurred in Western Canada in the past 21 years.

Overall, trauma caused 24% of the fatalities (asphyxia and hypothermia caused the remaining deaths, 75% and 1% overall), but this varied from 9% for snowmobilers to 38% for ice climbers and 77% for inbounds skiers. Only 48% of trauma victims were completely buried. In 67% of the time, trauma victims hit trees. Often snow-

mobile trauma victims had helmet chin guards flipped off that added to injury potential. There are several take-home messages from Jeff's talk:

1. Trauma is a major cause of avalanche fatalities, and a beacon won't help you at all if you hit a tree or rock or get swept over a cliff. A thorough understanding of terrain management is your most important piece of safety equipment.
2. As much as a gully, cliff or concavity, trees should be considered terrain traps.
3. Proper first aid training and a first-aid kit are important parts of backcountry preparedness.

If you are interested in more detail, the entire proceedings from ISSW 2008 are available here... [www.avtraining-admin.org/pubs/ISSW\\_Proceedings.pdf](http://www.avtraining-admin.org/pubs/ISSW_Proceedings.pdf)

The entire proceedings will be available on video in Jan 2009 at [www.avalanche-research.com](http://www.avalanche-research.com).

# SnowBall!

The Friends of NWAC is excited to announce the inaugural SnowBall Dinner and Auction! Please join us on Friday, April 10 at 6pm at the Ballard Elks Club on the water at Shilshole in Seattle.

This end-of-the-season celebration to support NWAC and avalanche safety in the Northwest promises to be a fun gathering of snow enthusiasts with stories of the season shared over cocktails and dinner. Come prepared to go home with a great selection of live and silent auction items – with tight government budgets shrinking fast, NWAC needs your support now more than ever. More details are available on the Friends website ([www.avalanchenw.org](http://www.avalanchenw.org)), and tickets are available through Brown Paper Tickets at [www.brownpapertickets.com/event/51896](http://www.brownpapertickets.com/event/51896). Seating is limited – buy your ticket now so you don't miss out.

the Friends of NWAC present

# Snowball!

An end-of-season celebration for the Northwest Weather and Avalanche Center

- 🌨 April 10, 2009 6pm
- 💰 \$65 All proceeds benefit the Avalanche Center
- 🍴 Dinner
- 🏠 Live & Silent Auctions
- 📍 Ballard Elks Club 6411 Seaview Ave NW, Seattle
- ❓ More information [avalanchenw.org/snowball](http://avalanchenw.org/snowball)



# Second Annual NSAS Huge Success

By Craig Wilbour (WDOT)

The second annual Northwest Snow and Avalanche Summit (NSAS) took place on November 8 at the Epiphany School in Seattle. Once again a packed house of 250 attendees was on hand for a full day of talks focused on various aspects of avalanche awareness. This year the focus of the day was on decision making in avalanche terrain.

Garth Ferber, a meteorologist and avalanche forecaster for NWAC, started the day with his presentation on "a day in the life of a forecaster." He discussed the tools and methods used to produce the forecast products of NWAC and gave the audience a better understanding of the what goes into the forecasts that we all rely on before heading into the mountains.

Don Sharaf, an Alaska heli-ski guide and owner of Teton Avalanche Forecasting, followed Garth with a comparison of the various snowpit stability tests. He compared the merits of the compression test, the stuffblock test, and the rutschblock; and introduced two newly developed stability tests, the extended column test and the propagation saw test. He described the strengths and weaknesses of each test along with their limitations and the best applications for each test.

Following Don, the focus shifted to a series of presentations on decision making in avalanche terrain. Martin Volken, owner of Pro Guiding Service and an AMGA certified mountain guide, presented a simple, easy to apply diagram that uses the likelihood and consequence of an accident as a means of risk assessment. He then offered his thoughts on the greater risk exposure that tends to occur when we people travel in the mountains for competitive or monetary reasons rather than to experience the beauty and solitude of the mountain environment.

Following Martin there was a panel discussion on Decision Making in a High Risk Environment. Margaret Wheeler, AMGA mountain guide, discussed the decisions she made while guiding a party on a multi-day ski mountaineering trip on the Forbidden Traverse in the North Cascades. Sky Sjuve discussed various risk reduction methods he uses on

remote mountain first descents. Don Sharaf discussed the pressures and realities of heli ski guiding in Alaska, and the methods he uses to reduce risk and meet the expectations of high paying clients. Craig Wilbour, the heard of avalanche control on Snoqualmie Pass for Washington State Department of Transportation, summarized the good and bad decisions he made that resulted in the most serious avalanche incident he has been involved with. He also discussed the decisions he made in attempting an unsuccessful rescue that resulted in a double fatality the same day a mile away.

After the panel, Tom Murphy, the founder of the American Institute for Avalanche Research and Education, discussed the decision making process from a more general perspective. He compared decision making in avalanche terrain to other high risk environments such as airplane piloting and the medical field. He emphasized the use of checklists as a way of ensuring that important factors are not forgotten and good decisions are made. The check list prompts memory recall and lists the minimum steps or observations required in a complex decision making process.

Lowell Skoog talked about safety and success on Cascade high ski routes in all seasons. He analyzed 53 of his extended high route tours over 26 years and found the most successful tours took place after the snow had consolidated in late May and June. Lowell's entire presentation can be viewed on line at <http://www.alpenglow.org/skiing/high-route-tips/index.html>.

Finally, Sam Kavanaugh, the victim of an avalanche in Montana that resulted in the filming of "Twelve Easy Turns", put the day's avalanche safety presentations in a personal light. Sam's story reminded all of the audience about the price that can be paid when traveling in avalanche terrain, but his remarkable spirit and the inspiration he has showed in the rehabilitation process ended the day on a high note.

NSAS was put on by Michael Jackson and the Alpine Safety Awareness program (ASAP). In addition to the presentations, the day included the



first annual Avalanche Education awards. Ken White and Roland Emitaz, both board members of the Friends of NWAC and former USFS employees who have been involved with avalanche education in the Northwest since the founding of NWAC, were recognized for their long time commitment to avalanche education.

The twenty five dollar fee covered the costs of the event and will benefit the educational efforts of ASAP and the Northwest Weather and Avalanche Center. Sponsors for the Summit included the Friends of the Avalanche Center, Outdoor Research, Karhu, Ortavox, Cascade Powder Cats, Back Country Access, the American Avalanche Association, and Stevens Pass Ski Area. A great deal of volunteer effort made the event a success. The Friends thanks ASAP along with all the sponsors and volunteers for their commitment to avalanche education and safety.



Photo: Stephen Matera

# Thank you

The Friends relies heavily on the support of our members. Our heartfelt thanks go out to those who have recently joined or renewed.

## Supporter - \$100+

Krista Brunch  
Daniel Dietzman  
Erik Hagstrom  
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Mark Hillman  
Murray Kahn  
Michael Kupsis  
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Deborah Riehl and Ralph Javins  
Daniel and Sara Tomko

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Paul Campbell  
Lindsay Felker  
John Garrison  
Eric Gerdes  
Steven Humphries  
Jennifer Janousek  
Luke Jennings  
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Amy Mann  
Daniel Miller  
Patty Morrison  
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David Rhoades  
Paul Russel  
Gaylord Smith  
John Stimberis  
Terry Stuart  
John Thomson  
Gerald White

## Student - \$10+

Tyler and Lindsay Killet  
Loren Miller

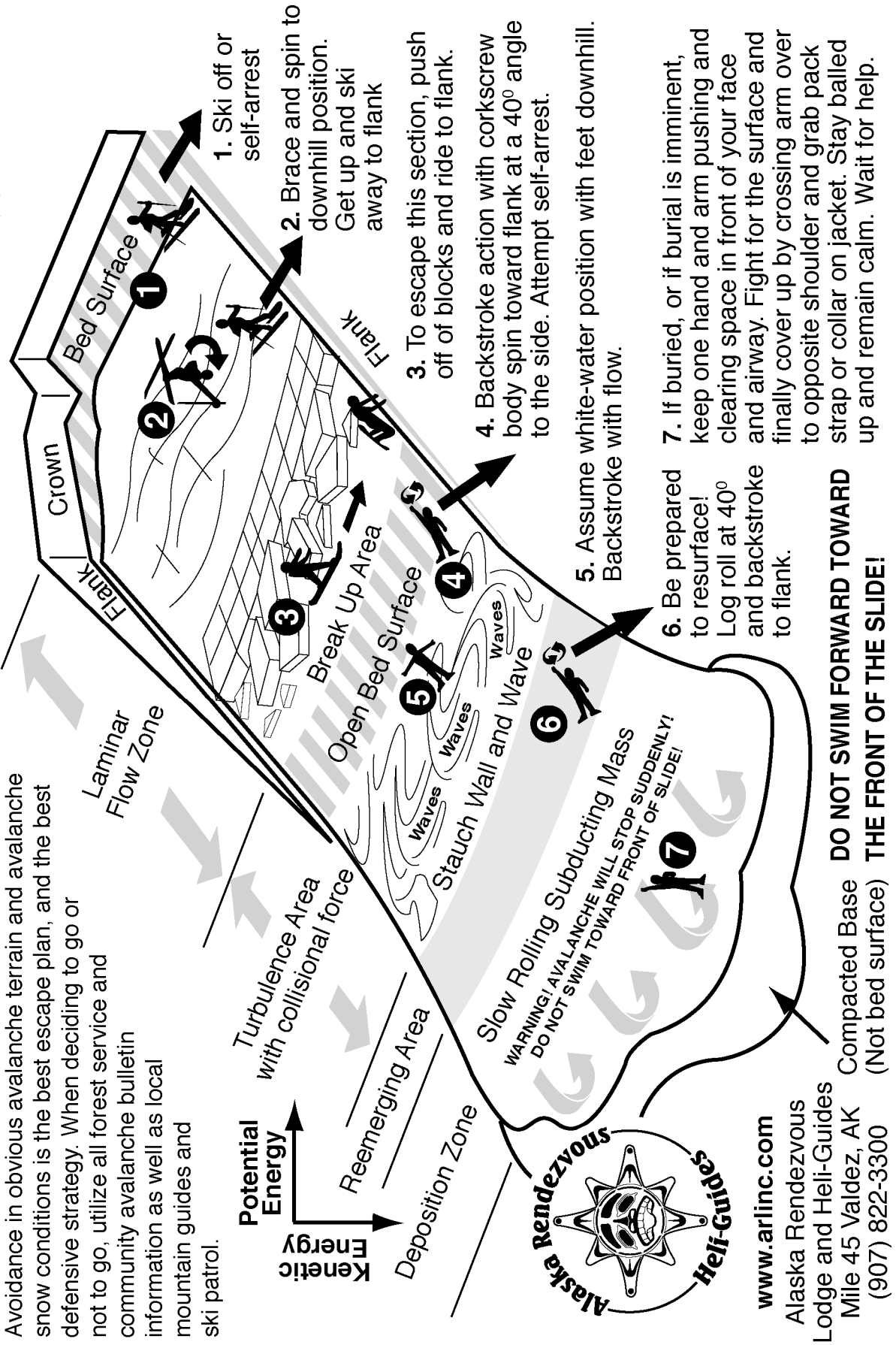
# Escape From Capture!

# These are your escape opportunities in powder slab avalanches

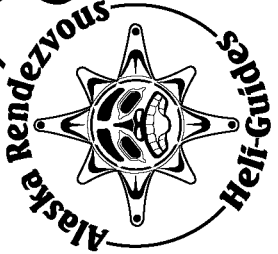
This scenario assumes that there are no terrain traps or double exposure.

Triggers: SS/AS/AR• Run: R2,3,4  
Destructive Force: D2,3,4

Avoidance in obvious avalanche terrain and avalanche snow conditions is the best escape plan, and the best defensive strategy. When deciding to go or not to go, utilize all forest service and community avalanche bulletin information as well as local mountain guides and ski patrol.



1. Ski off or self-arrest
2. Brace and spin to downhill position. Get up and ski away to flank
3. To escape this section, push off of blocks and ride to flank.
4. Backstroke action with corkscrew body spin toward flank at a 40° angle to the side. Attempt self-arrest.
5. Assume white-water position with feet downhill. Backstroke with flow.
6. Be prepared to resurface! Log roll at 40° and backstroke to flank.
7. If buried, or if burial is imminent, keep one hand and arm pushing and clearing space in front of your face and airway. Fight for the surface and finally cover up by crossing arm over to opposite shoulder and grab pack strap or collar on jacket. Stay balled up and remain calm. Wait for help.



[www.arlinc.com](http://www.arlinc.com)  
Alaska Rendezvous  
Lodge and Heli-Guides  
Mile 45 Valdez, AK  
(907) 822-3300

**DO NOT SWIM FORWARD TOWARD THE FRONT OF THE SLIDE!**  
Compacted Base  
(Not bed surface)



# Your Continued Support is Important!

Your continued support of the Friends of the Northwest Weather and Avalanche Center has helped NWAC immensely. Thousands of dollars have contributed to:

- **Forecasting aids & technology for improved forecasts**
- **Bridging gaps in public funding budgetary shortfalls**
- **Lobbying efforts in Olympia for support of Center funding**
- **Educational outreach opportunities**

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## **Don't forget:**

- Contributions are tax-deductible
- Receive discounts at local retail shops
- Members are eligible to receive email avy forecasts

Photo: Benj Wadsworth