



Mountain Ear

MONTHLY NEWSLETTER OF THE ROCKY MOUNTAINEERS
OF WESTERN MONTANA

February 1987
Vol. 25 No. 6

FEBRUARY MEETING: Wednesday, February 11, 7:30 P.M.
Montana Power Building
1903 Russell, Missoula

PROGRAM Climbing in the Alps - Steve Sheriff

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TRIP SCHEDULE

Friday, February 13, Moonlight Ski. Tentative place to be announced. Lois Crepeau, 728-5321

Saturday, February 14, Moderate Day Tour. To be announced. Dave Pengelly, 728-6512.

Sunday, February 15, Lolo Peak. Strenuous. Art Gidel, 543-6352.

Saturday, February 21, Trip to be announced. Peter Dayton, 549-5805. Work, 721-8300.

Sunday, February 22, Boulder Peak. Strenuous. Steve Niday, 721-3790.

Sat.-Sun. Feb. 28, Mar. 1, Basic Avalanche Course. Lost Trail Ski Area. Cost \$5.00.
For more information call John Pierce, 542-2640 or Ralph Flockerzi, 549-9986.

BOOKS FOR SALE

The following three books are all printed by The Mountaineers of Seattle and are on sale at the Missoula Ranger District Office, 2 miles south of the Buckhouse Bridge on the way to Lolo, from 7:30 am to 5:00 pm, Mon-Fri. All proceeds go to the Pacific Northwest National Parks & Forests Assoc., a non-profit organization:

THE ABC OF AVALANCHE SAFETY by E. R. LaChapelle, 2nd Edition, 1985, \$3.95. This pocket size guide is an excellent source of easy-to-understand information that doesn't dwell on physics or calculus. It even has a Galen Rowell cover photo.

CROSS-COUNTRY SKIING by Ned Gillette and John Dostal, 2nd edition, 1983, \$9.95. This how-to-ski book has something for everyone from track skiing to telemark to teaching your children...also chapters on equipment.

HYPOTHERMIA, FROSTBITE & OTHER COLD INJURIES, James A. Wilderson, MD. editor 1986. \$8.95. Dr. Wilkerson wasn't content to just give us MEDICINE FOR MOUNTAINEERING, the famous guide to back-country care. This new volume is much more than first aid because prevention and recognition are stressed. The size is just right, with its sturdy cover, for taking along.


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MEMBERSHIP APPLICATION


NAME _____ Mail a check payable to
ADDRESS _____ "Rocky Mountaineers" to
PHONE _____ Arnold Finklin, P.O. Box 7795,
Missoula MT 59807
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AVALANCHE CONDITIONS
24 HOUR TAPED INFORMATION
PHONE NUMBER -- 251-5325


Missoula Ranger District, U.S.D.A. Forest Serv.

Updated weekly on Friday afternoons for the weekend. Skiing and avalanche conditions for:

1. South & west Bitterroots
2. Rattlesnake Mtns.
3. West of Missoula to Lolo Pass
4. Superior area W. to Lookout Pass

Monday thru Friday: Current Recreation Info.
Friday P.M. thru Monday A.M.: Current ski and avalanche conditions.

SKI TIPS:



What, the salesman told you that your skis don't need wax? To retain maximum performance, even "nowax" skis need frequent base preparation, using glider wax or de-icing compound such as Maxiglide. To prepare your skis for average snow conditions, use a universal glider wax, and sand the tip and tail with medium grit sandpaper. Apply the wax to a warm iron, and drip down each side of groove on tips and tail. Next, use the iron to smooth the wax into the base, being careful to keep the iron moving at all times to avoid damage to the base. Allow the wax to cool, then scrape off excess with a plastic scaper, leaving a glossy finish on the ski base. When the finish looks dull, your skis are ready for another hotwax. For information on how to prepare your skis for ultimate performance in a particular snow condition and temperature, consult your local specialty shop or buy a book on waxing.



"AN OASIS FOR THE CYCLO-TOURIST"

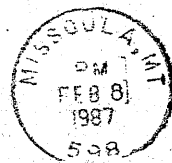
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AVALANCHE TRAVEL RULES OF THUMB

by RON PERLA

1. Consider the general rule: NEVER TOUR AFTER A STORM. The question is how soon after the storm are conditions safe? One hour? One day? One month? A whole season?
2. When conditions are unstable, the wise travel only for the rescue of fools.
3. When it comes to judging slope stability, the rule of thumb is: That there are no rules of thumb.
4. A ski tour disaster is triggered by someone's intuition that a slope is stable.
5. Next time you come to an avalanche slope, ask not only "Will it slide?", but also "What will happen if it does slide?".
6. While crossing an avalanche slope, he who hesitates is lost.
7. The family that tours close together gets buried close together.
8. The weekend ski tour begins with a Friday night call to the snow ranger or Forest Service District Ranger.
9. Carry a probe and PIEPS or SKADI as you would have others carry a probe and PIEPS or SKADI for you.
10. A fact for what it's worth: No one wearing an avalanche cord has been recovered dead.

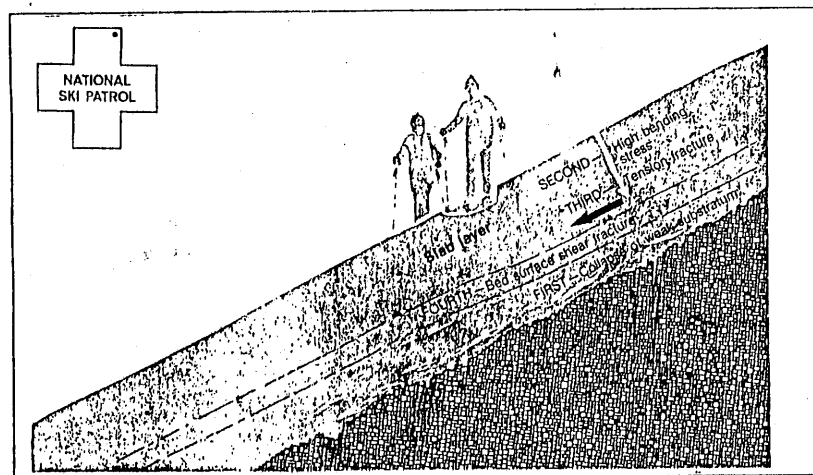
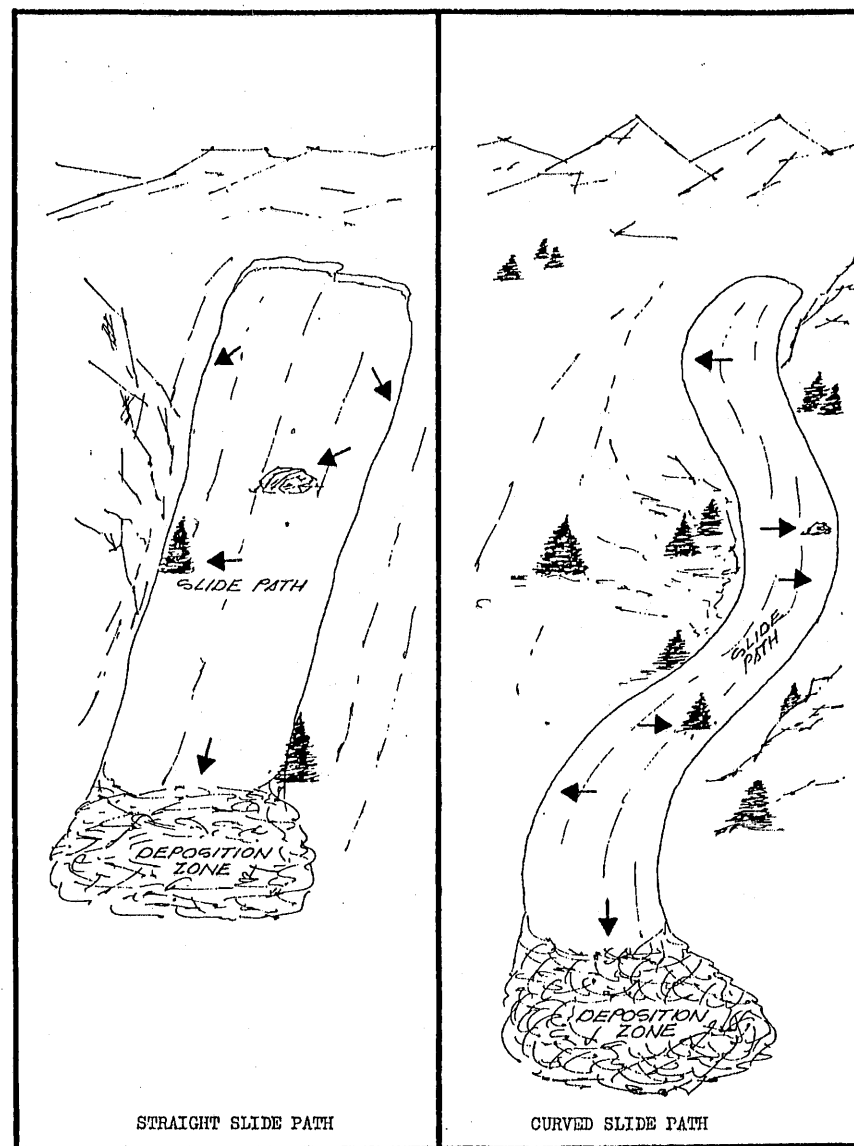


Figure 99.—Initial failure may occur as collapse of a weak substratum. This would induce high bending stress, tension fracture, and finally shear fracture at the bed surface.

LIKELY POINTS OF BURIAL



AVALANCHE



THE TEN CONTRIBUTORY FACTORS

- TERRAIN**
Steep gullies and open slopes are natural avalanche paths. Ridges, outcrops, and terraces are natural avalanche barriers.

Rough, irregular ground surface tends to retard slides until all the irregularities have been filled in by snowfall or winddrift.
- OLD SNOW DEPTH**
Deep snow serves to smooth out terrain irregularities and promote avalanching. The deeper the total snow depth, the more likely slides are to occur, other factors being equal.
- OLD SNOW SURFACE**
Rough, firm snow offers a good anchorage for subsequent layers. Smooth surfaces, such as a raincrust, make a good sliding base.
- NEW SNOW DEPTH**
Six inches sometimes may be enough to produce some sliding, but it generally takes upward of ten to twelve inches to produce serious avalanche danger.
- NEW SNOW TYPE**
Light, fluffy snow does not usually form slabs unless packed under the influence of wind. Irregular granular crystals, needle crystals and pellet snow all tend to form slabs rather easily.
- NEW SNOW DENSITY**
Extremely light or heavy snow, that snow having very little or very high water content, are conducive to the formation of avalanche potential.
- SNOWFALL AND PRECIPITATION INTENSITIES**
Precipitation intensity is the rate at which weight of snow, expressed in water equivalent, accumulates. Prolonged precipitation intensity of 0.1" of water per hour or greater is almost always associated with soft slab formation if strong winds are blowing.

Prolonged snowfalls of 1" per hour or greater should always be viewed with suspicion.
- SETTLEMENT**
Settlement is a stabilizing factor in snow. Strong rapid settlement is usually a safe sign. Absence of settlement, on the other hand, should be treated cautiously.
- WIND**
Wind is a primary agent in developing soft slabs. When the average wind velocities exceed 15 MPH for prolonged periods, extensive slab formation should be expected.

AVALANCHE



THE TEN CONTRIBUTORY FACTORS (cont'd)

- TEMPERATURE**
Snowfalls which begin warm and then gradually cool off tend to be more stable than those with the opposite trend. In the latter case, heavier snow will rest on the poor support offered by the light, dry snow which fell first.

"BEWARE" OF AVALANCHE DANGER DURING AND AFTER HEAVY WINTER STORMS

Barring some deep-seated instability in the snow cover, the danger usually will decline with the passage of time as the snow settles and stabilizes. The rate of this decline depends strongly on temperature. Near the freezing point danger may persist for only a few hours. Below "0" degrees F. it may last for many days or even weeks.

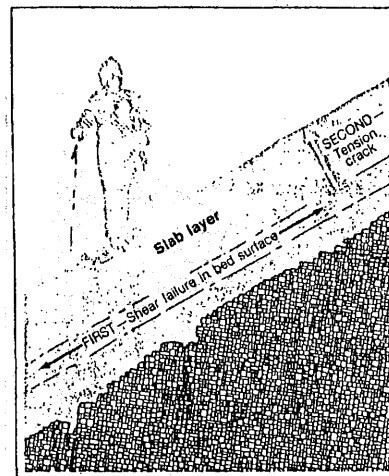


Figure 98.—In one possible sequence, initial slab failure occurs in shear along the bed surface. High tensile stress develops upslope, ahead of the propagating shear failure. Finally, the slab layer fractures in tension.

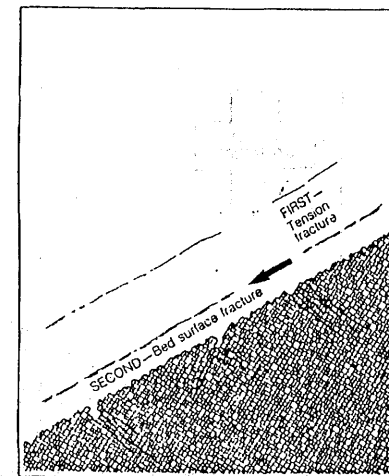


Figure 100.—Initial failure may occur as a tension crack. The opening of the tension crack would induce shear fracture at the bed surface.

A V A L A N C H E



CONDUCT IF YOU ARE CAUGHT IN AN AVALANCHE

1. Call out so other members of your party can observe your course in case you are buried.
2. Discard ski poles, skis and pack.
3. Attempt by a swimming motion to stay on the surface. Attempt to work yourself to one side of the moving snow.
4. If you are unable to clear yourself of the avalanche, cover your face with your hands.
5. If you are buried, try to avoid panic. Frantic and fruitless efforts to free yourself will only consume valuable oxygen. Stern self-control is essential to survival.
6. In soft snow you may be able to dig yourself out, or at least make room to breathe. If you try to dig out, make sure you dig up toward the surface.
7. If you hear rescuers working above you, don't waste your strength by shouting. Though sound is transmitted "into" the snow rather easily, it is transmitted "out" very poorly.

CONDUCT IF YOU WITNESS AN AVALANCHE ACCIDENT

1. "Don't Panic".
2. Mark the last seen point.
3. Check for further avalanche danger.
4. Conduct a quick search of the slide area. Look for articles of equipment or clothing. Also look for the end of an avalanche cord if the victim was using one.
5. Conduct a hasty probe of likely catchment locations.
6. Send for help. If you are the only witness to the accident and you have completed the above rescue efforts, then you must go for help. When doing so, stay clear of any further avalanche danger, do not exert yourself to the point of exhaustion as the rescue party will expect you to guide them back to the scene of the accident, and never travel at night.
7. If you are successful in your attempt to locate the victim(s), you must render immediate first aid for possible suffocation, shock, hypothermia, and other possible injuries as necessary.

A V A L A N C H E



CONDUCT WHILE TRAVELING IN AVALANCHE TERRAIN

1. NEVER travel alone.
2. NEVER permit more than one person to be exposed to avalanche danger at a time.
3. Stay off the avalanche paths themselves, and especially stay out of the fracture zones. The safest route around an avalanche path is over the top by way of the ridges.
4. Do not camp or make rest stops under an avalanche path.
5. On extended winter tours in the back country, carry some emergency rescue equipment.
6. Do not assume a slope to be safe just because it did not slide when the first person in the party crossed it.
7. Beware of lee areas, the slopes beneath cornices, and deep drifts, especially those with a convex profile. These are all prime locations for avalanche fracture zones.
8. Do not assume that avalanches are confined to open slopes. Dense timber is usually good protection, but open or scattered timber stands may not necessarily hold the snow.

IF YOU MUST CROSS AN AVALANCHE SLOPE

Crossing an avalanche slope involves a certain calculated risk. You may not be able to make even a close guess as to whether the slope will slide or not. Ask not only, "Will it slide?", but also "What will happen if it does slide?"

1. Remove ski pole wrist straps.
2. Remove binding safety straps.
3. Close all clothing, put on a hat and gloves, and raise your parka hood.
4. If carry a pack, loosen shoulder straps and belly band.
5. Wear an avalanche cord if one is available.
6. If possible, ski from one terrain barrier to another until clear of the slope.
7. Ski as straight a line as possible while traversing the slope.