

AVALANCHE NEWS NO. 22

OCTOBER 1986

EDITORIAL NOTE

The intention of AVALANCHE NEWS is to assist communication between persons and organizations engaged in snow avalanche work in Canada. Short articles cover reports of accidents, upcoming and past events, new techniques and equipment, publications, personal news, activities of organizations concerned with avalanche safety, education and research.

The editor welcomes and expects contributions; all reasonable comments and discussions will be printed. The articles in AVALANCHE NEWS reflect the views of the authors, and only when it is specifically stated do they represent the opinion of the Canadian Avalanche Association.

No paid advertisements are carried. Suppliers who wish to draw attention to their products should send information to the editor who will publish a note when the equipment has value in avalanche work and safety.

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# INFORMATION FROM THE INTERNATIONAL COMMISSION FOR ALPINE RESCUE

by Peter Fuhrmann

The Subcommittee Avalanches of the International Commission for Alpine Rescue (IKAR) released the following information after their meeting on September 20, 1985, at Flaam, Norway.

During the 1984-1985 winter, there were 226 avalanche fatalities in the 15 IKAR member nations, an unusually high number (see Table). Comparative figures were 131 fatalities for 1982-1983, and 171 fatalities for 1983-1984.

In analyzing the accidents the Subcommittee Avalanches determined the following significant reasons for the high number of fatalities.

## Pressures of Time

People plan their holidays and want to go skiing on scheduled days, regardless of the snow conditions. A tight schedule, often in association with competition, does not permit backcountry travellers to wait for the new snow to stabilize.

Similarly, owing to pressures of time, proper spacing while travelling often is neglected. People have crossed and entered avalanche slopes in close groups, then released avalanches.

## The Snow-poor Winter

For many years the Swiss Avalanche Research Institute has pointed out that more accidents can be expected in winters with low amounts of snowfall. During such winters safe ridge routes cannot be skied because snow has been blown away and rocks appear on the surface. The skiers then are forced into gullies where the snow is unpredictable and the snowpack stratification may be poor.

## Under-estimating the Danger

In reviewing the accident reports, one arrives at the conclusion that the danger and weight of the snow often were under-estimated. No one can say with certainty whether or not a slope is safe from avalanches. A variety of points in combination form a hazard condition and must be considered. One should realize that one cubic metre of snow usually weighs between 200 and 300 kg.

## One Should Learn From Mishaps:

- a) The avalanche forecast should be consulted.
- b) One should travel considering one's own aims and desires; one should not become involved in competition with other parties.

- c) The snow cover should be checked.
- d) Proper spacing has to be maintained between party members when ascending or descending.
- e) North and east slopes should be skied only with extra precautions, and gulleys in which obvious snow deposits are found should be avoided.
- f) Avalanche hazard periods should be observed.
- g) Only one person should enter questionable terrain.
- h) Transceivers should be carried and should be switched on to transmit mode.
- i) Shovels must be carried.

The International Commission for Alpine Rescue believes that more education is needed and that the preparation of ski tours is of great importance. It passed a resolution to publicize the information listed above.

### Resolution

In 1980 the Avalanche Subcommittee of the IKAR passed and publicized a motion to point out the dangers and the accidents that occur when skiing in deep snow. Since that time, the number of accidents has increased drastically and therefore it is of great importance to educate ski instructors and those working in ski areas in the avoidance of avalanche accidents. It should be mandatory that rescue services with proper training and the required rescue equipment are available at strategic points.

In addition, backcountry and deep snow skiers should understand that organized rescues have a minimal chance of recovering alive those buried in avalanches.

Proper judgement, proper behavior and effective self help within a party are of greatest importance.

STATISTICS OF AVALANCHE FATALITIES - OCTOBER 1, 1984 TO SEPTEMBER 30, 1985

Compiled by I.K.A.R.

Country Number of Members Accidents	Fatalities							Number of Avalanche Dogs			
	Ski Touring Without Skis	Mountain Climbers	Skiers Leaving The Controlled Ski Area	On Ski Runs	Workers	Highways	Buildings		Others	Total	
Switzerland	32	26	-	14	-	2	11	-	2	55	314
France	69	12	4	29	-	-	-	-	-	45	114
Austria	63	28	1	8	1	-	-	-	2	40	201
Italy	19	19	1	5	-	2	-	-	-	27	170
Germany	11	5	-	2	-	-	-	-	-	7	40
Yugoslavia	2	-	-	1	-	1	-	-	-	2	31
Liechtenstein	1	-	-	1	-	-	-	-	-	1	8
Poland	3	-	4	-	-	-	-	-	1	5	14
Czechoslovakia	9	4	9	-	-	-	-	-	-	13	15
Spain	4	-	-	8	-	-	-	-	-	8	2
Norway	4	1	-	-	-	-	-	-	3	4	155
Bulgaria	-	-	-	-	-	-	-	-	-	-	25
Canada	6	-	-	5	-	-	-	-	1	6	38
U.S.A.	13	4	3	2	-	-	-	-	4	13	48
England	1	-	-	-	-	-	-	-	-	-	23
TOTAL	237	99	22	75	1	5	11	-	13	226	1,198

## AVALANCHE COURSES

### Professional Courses

Training courses for persons working in operations concerned with avalanche safety will again be organized for this coming winter.

The National Research Council of Canada and the Canadian Avalanche Association are responsible for the standards, training objectives, and the course content, and the British Columbia Institute of Technology administers the courses.

The following courses are planned for the 1986-1987 winter:

### Avalanche Safety for Transportation and Industry - Level 1

November 24-28, 1986                      Creston, B.C.

December 1-5, 1986                      Creston, B.C.

### Avalanche Safety for Ski Operations - Level 1

November 29 - December 5, 1986      Whistler, B.C.

January 11-18, 1987                      Assiniboine Provincial Park

January 18-25, 1987                      Assiniboine Provincial Park

### Avalanche Safety for Ski Operations - Level 2

January 5-12, 1987                      Whistler, B.C.

Avalanche control and terrain courses are not planned owing to a low interest in such courses in past years, but would be organized if the industry should express a demand. Information, brochures, and registration forms for the courses may be obtained from:

Avalanche Courses  
Computing and Electro-mechanical Part-time Studies  
British Columbia Institute of Technology  
3700 Willingdon Avenue  
Burnaby, B.C.  
V5G 3H2

Telephone: (604) 432-8637 or  
(604) 432-8582

### Pre-requisite for the Level 2 Course

Prior to being accepted, the applicants for the course on Avalanche Safety for Ski Operations - Level 2 must submit a statement that they:

- a) have successfully completed a Level 1 course or have training equivalent to a Level 1 course; and
- b) are familiar with the Canadian Guidelines for weather, snowpack, and avalanche observations; and
- c) after completion of the Level 1 course have worked a minimum of 100 days with an avalanche safety operation or have travelled in terrain subject to avalanche for that length of time, applying all Level 1 skills and knowledge.

The statement must be confirmed in writing by a practicing graduate of a Level 2 avalanche course.

### Helicopter Ski Guides

Canadian Mountain Holidays Heli-skiing will conduct a seven-day seminar for lead-guides of helicopter ski operations at the Bugaboo Lodge on December 6-13, 1986. Information may be obtained from:

Kobi Wyss  
CMH Heli-skiing  
P.O. Box 1660  
Banff, Alberta  
T0L 0C0

Telephone: (403) 762-4531

## WEATHER FORECASTING WORKSHOPS

Over the past three years the Pacific Weather Centre has offered one and two-day courses as an introduction to the mountain weather forecast. To meet a demand for continuing training, courses will again be held at the beginning of this winter, but will concentrate on problem solving and discussions of case histories. This will require that the participants prepare themselves before the course by studying the handout material from the previous courses and/or other handbooks.

### Dates and Places

November 7, 1986 at Vancouver, B.C.

The location of the meeting room has not been finalized as yet. Interested participants should request information from Peter Schaerer (address on front page of Avalanche News) or Vello Puss, Pacific Weather Centre, Vancouver, telephone 666-2728.

November 13, 1986 at Golden, B.C.

Beginning at 0830 hours (Mountain Time) at the Canadian Legion, East 11th Avenue.

## AVALANCHE RESOURCE AGENCIES

It is intended to update the list of avalanche resource agencies that was distributed with AVALANCHE NEWS No. 20 in February 1986. The revised list will be published with the next issue of AVALANCHE NEWS.

All avalanche workers and agencies in Canada are requested to check the list and notify the office of Geoff Freer (see address and telephone number on the front page of Avalanche News) about changes, additions and deletions. They should consider also whether other persons or agencies presently not listed should be included. Specifically, we wish to include organizations and persons that offer avalanche information courses to the general public.

Avalanche resource agencies are those which offer services in the following fields:

- a) Daily information regarding snow stability and avalanche hazards: National and Provincial Parks, highway operations, ski areas including helicopter ski operations. These organizations usually are also equipped for search and rescue.
- b) Search and rescue: avalanche dogs, emergency programs, ski patrols, mountain rescue groups.
- c) Education: organizations giving avalanche courses, courses for audio-visual material.
- d) Weather information.

The Canadian Avalanche Association has decided that consultants should not be listed.



## PUBLICATIONS

Betsy Armstrong and Knox Williams, 1986

The Avalanche Book. Fulcrum Inc., 360 Indiana Street, Golden, Colorado, 80401; telephone 303-277-1623. Price \$14.95 U.S. plus \$1.25 for shipping and handling.

The book was reviewed in AVALANCHE NEWS No. 21 but with an error in the title. We wish to apologize to the authors. Readers please note the correct title above. The book is not a handbook and is generally informative rather than instructional.

D. M. McClung and P. A. Schaerer, 1985

Characteristics of Flowing Snow and Avalanche Impact Pressures. Annals of Glaciology, Vol. 6, pp. 9-14; (International Glaciological Society). Reprint available as publication No. NRCC 25354 of Publication Sales, National Research Council, Ottawa, Ontario, K1A 0R6; Price \$1.25.

### Abstract

Experimental data on avalanche impact pressures and speeds from an avalanche path at Rogers Pass, B.C., are presented for both dry and wet avalanches. Data from small load cells (645 mm<sup>2</sup> surface) at various heights through the vertical cross-section of the avalanches show that the frequency of particle impact and hence flow density increases rapidly from top to bottom of the flow.

Data from a large circular impact plate (196,000 mm<sup>2</sup>) just above the ground surface show that dry avalanches have relatively higher peak pressures and relatively lower average pressures than wet avalanches for a given speed.

Comparison of pressure results with those of other studies shows good agreement for peak pressures, but average pressures are generally less than those of previous studies.

I. F. Owens and B. B. Fitzharris, 1985

Avalanche Atlas of the Milford Track. New Zealand Mountain Safety Council, Avalanche Report No. 8, 77 p. New Zealand Mountain Safety Council, c/o Dept. of Internal Affairs, Private Bag, Wellington, New Zealand; Price \$6.00 NZ.

The atlas describes the avalanche paths and the hazard to hikers at the Milford Track, New Zealand's most famous walking trail. The track is used by a large number of hikers in the summer, and with increasing popularity the walking season now extends into the avalanche seasons of the early and late winter. Large avalanches from high elevations above the trail can bury unsuspecting walkers, and accidents including one fatality have already occurred.

The avalanche hazard at the Milford Track is similar to that of many cross-country ski trails in Canada, therefore the book is of interest to those concerned with the safety of marked ski trails.

Guidelines for Weather, Snowpack, and Avalanche Observations. National Research Council of Canada, Technical Memorandum No. 132; revised edition 1986.

The guidelines contain minor revisions and editorial changes. They were sent to the printers in early September and are expected to be available by mid-November from Publication Sales, National Research Council, Ottawa, Ontario, K1A 0R6. (Price not determined as yet).