AVALANCHE NEWS NO. 2

January 1980

EDITORIAL NOTE

Avalanche News is a vehicle of communication between people engaged in avalanche work in Canada and is issued three times per year. The first issue was published in October 1979 and Number 3 will appear in May 1980.

There is no subscription fee for Avalanche News. The readers make the contributions, members of the Canadian Avalanche Committee edit them, and the British Columbia Ministry of Transportation and Highways courteously prints and distributes the News. Anybody wishing to obtain Avalanche News should request it from the Canadian Avalanche Committee.

Peter Schaerer

AVALANCHE NEWS
Committee, 3904 West 4th Ave., Vancouver, B.C., V6R 1P5
No. 2 JANUARY 1980

FIRST PART OF THE AVALANCHE WINTER 1979-1980

In November 1979 the amount of snowfall in all mountain areas of Western Canada was very low resulting in an unusually thin snowpack even at the highest elevations. In December the precipitation was greater than average, bringing the snowpack depth in the Columbia Mountains and Rocky Mountains close to and in some places above average at the end of the year. At the Coast the snowpack remained well below average at the end of December. Due to higher than usual temperatures much of the precipitation fell in the form of rain at the low elevations resulting in a lack of snow in the valleys.

The heavy snowfalls in December in association with the shallow November snowpack which had gone through a temperature-gradient metamorphism produced avalanches several times between 5 and 19 December. In the Columbia Mountains some avalanches reached a size 4, which is quite unusual for December. In the Rocky Mountains and at the Coast the snowfalls were insufficient for large avalanches.

In January the snowfall was moderate and the temperature above average. At the end of January the amount of snow on the ground ranged from below normal at the South Coast to slightly above in the Columbia and Rocky Mountains. The snowpacks seemed to have a higher density than usual in January.

Avalanche Hazard At The End Of January

In general, no critical snow layers exist which could lead to deep fractures of the snowpack and consequently to large avalanches. Deep slabs sliding on depth hoar close to the ground seem to be possible only in isolated pockets in the Rocky Mountains on very smooth ground or on slopes with deep drifts. In all areas there are local instabilities at the snow surface as a result of strong wind and surface hoar. Surface hoar and surface snow in an early stage of temperature-gradient metamorphism were observed on low, shady and generally north-facing slopes. At Rossland a surface hoar layer producing easy fractures was observed 90 cm below the surface.

The avalanche hazard for back-country travellers is moderate. This means that travelling is generally safe, but avalanche hazards exist on localized slopes that have considerable wind action or surface hoar or are very steep, such as gullies. Although ski touring is safer than in the past winters, caution is still advised. The avalanche hazard to skiers could increase rapidly when snowfalls deposit snow on the weak layers at the surface.

From Whistler Mountain it was reported that last winter's cornices had melted completely; therefore, the new cornices consist of this winter's snow only and are weaker than in other years.

Information about the snow conditions and the avalanche hazard was received with thanks from Willi Pfisterer, Keith Everts, Clair Israelson, Lloyd Gallagher, Christ Sadleir, Fred Schleiss, Jeff Boyd, John Tweedy, Geoff Freer, Herb Green, Ed Campbell and Chris Stethem.

Peter Schaerer

CONTROL BY EXPLOSIVES

In September Gilles DuCharme of Dupont Canada visited Lake Louise to discuss production of Avalauncher payloads. By mid-January we should receive some 2 lb. prototype payloads for testing. Results will be reported here. Dupont feels they can improve quality and beat the net cost per unit of the Trojan payloads. They would like to know what kind of market potential exists in Canada, as unit costs decrease with volume. If you use Avalaunchers will you please drop me a note stating your average yearly consumption. I will pass this information to Dupont.

This season we are experimenting with standard 1 kg. payloads to determine relative effectiveness of detonation in, on and over a Rocky Mountain snowpack. A series of similar chutes are being used as a test area. Two chutes are being shot with the Avalauncher for detonation deep in the pack. The next two chutes are being bombed with the charge suspended 5 feet above the snowpack by a "clothesline". A further two chutes are being hand charged with detonation occurring on the snow surface. Over a period of time we hope to establish if there are differences in effectiveness, and if so, what they are.

We are also working on a method of testing the compressive strength of TG snow in an attempt to equate strength of an identifiable weakness in the snowpack with the weight (H_2O equivalent) lying above the weakness required for slope failure. Initial tests suggest the concept may work. We will provide results to date at the Vancouver workshop next November.

Clair Israelson
Wardens Office
Parks Canada
LAKE LOUISE, ALBERTA
TOL 1EO

GUIDELINES FOR WEATHER, SNOW COVER AND AVALANCHE OBSERVATIONS

It is intended to print the recommendations for making and recording daily weather observations, snow profile observations, and observations of avalanche occurrences contained in the notes of the BCIT/NRC avalanche courses. We had planned to undertake this task in the summer of 1979, but could not find the time and manpower to do so. Another effort to revise and publish the guidelines will be made after the present avalanche winter.

I wish to request all operational staff to submit to me their suggestions for changes, additions, or deletions to the guidelines. I thank all those who have already sent their comments to me.

Peter Schaerer

REPORTING OF AVALANCHE INVOLVEMENTS

The form and instructions for reporting accidents, damages, and other involvements with avalanches is available and has been distributed. Those who have not received copies should request them either from Peter Schaerer (NRC, 3904 West 4th Avenue, VANCOUVER, B.C. V6R 1P5, Telephone: 732-6619) or Geoff Freer (Ministry of Transportation and Highways, 940 Blanshard Street, VICTORIA, B.C. V8W 3E6, Telephone: 387-1738).

The purpose of the form is to collect statistics about the extent of involvement with avalanches with the objective of impressing the public, industry and authorities about the hazards. The Avalanche Committee strongly recommends that all incidents be reported. Although the form has been designed for mailing as an open postcard, it may be sent in an envelope if the information should remain confidential. The Avalanche Committee will keep the reports confidential and will not release information about individual cases without the consent of the persons or organizations involved.

By January 31 only two reports of avalanches during the 1979-1980 winter had been received; one of a skier partially buried and of property destroyed. A summary of all reports of this winter will be published in the next issue of Avalanche News.

AVALANCHE COURSES

The lack of snow in November and in the first week of December made it necessary to postpone the courses in Avalanche Safety for Transportation and Industry, Level I and Level II. The new dates for the courses are:

25-29 February	Level I
03-07 March	Level II
10-14 March	Level I

All three courses will be held at Creston, B.C., with the field work carried out at Kootenay Pass. Interested participants who have not been contact as yet should apply to Garry Walton, either directly or through their departmental channels. Students who have the ability to ski in deep snow should bring ski equipment - alpine or cross country - to these courses. Separate groups of skiers and non-skiers will be formed for the field activities.

The course on Avalanche Safety for Ski Areas - Level II, planned for Whistler in the week 4-10 February, was cancelled because of an insufficient number of registrations.

The Avalanche Terrain course, 8-11 April, will be held at the Sandman Inn in Revelstoke, but some field work will be carried out at Rogers Pass. The course is designed for engineers and technicians who are responsible for the design and location of recreational, industrial, transportation and utility facilities. The course emphasizes evaluation of terrain with the aid of air photos and the prediction of the effects of large avalanches.

Information about the BCIT/NRC avalanche courses can be obtained from the course co-ordinator, Garry Walton, Industry Services Division, B.C. Institute of Technology, 3700 Willingdon Avenue, BURNABY, B.C. V5G 3H2, Telephone: 434-5734.

AVALANCHE WORKSHOP 1980

The first brochure containing a pre-registration form for the Avalanche Workshop at Vancouver, B.C., 3-5 November, 1980, has been distributed. Additional copies may be requested from Geoff Freer or Peter Schaerer. The pre-registration form indicating the wish to make a presentation should be mailed by April 1. Missing this deadline will not prevent anybody from attending the workshop but will not allow speakers to make a presentation. The final brochure containing information about the program will be mailed to those who have pre-registered or who request it.

No money should be sent now. The fee of $20.00 should be paid either with the final registration or at the workshop.

MOUNTAINEERING/GLACIER NATURAL HAZARDS SEMINAR

The American Avalanche Institute and the Alaska Association of Mountain Wilderness Guides have organized a seminar on mountaineering hazards at Anchorage, Alaska on 11-13 April, 1980. The seminar is preceeded by a one-day refresher course on snow properties at Girdwood and Mt. Alyeska on 10 April. Instructors covering the topics of snow, avalanches and avalanche forecasting are Ed LaChapelle, Steve Hackett, Peter Lev, and Rod Newcomb. A brochure describing the seminar may be obtained from Steve Hackett, American Avalanche Institute - Alaska, Box 595, GIRDWOOD, Alaska, 99587, Telephone: (907) 783-2816.

AVALANCHE RESCUE DOGS

The OIC Police Dog Service of the R.C.M.P. at Innisfail, Alberta announces the following changes and additions to the list of dog masters involved in avalanche search and rescue. The teams of master and dog will attend training courses in avalanche rescue at Jasper during this winter and upon completion of the course be classified with respect to their capability. The list containing the classification will be published in future issues of the Avalanche News.

Cpl. Chris Banham, R.C.M.P. Cochrane, Alberta, Telephone Res: 932-3866
Bus: 932-2211

Cpl. Rod Nichol, R.C.M.P. Courtenay, B.C. Telephone Res: 334-3789
Bus: 338-7421

Cpl. Gary Gillette, R.C.M.P Vernon, B.C. Telephone Res: 573-5741
Bus: 372-3111

Cpl. Bill Henderson, R.C.M.P. Penticton, B.C. Telephone Res: 493-4609
Bus: 492-4300

Cpl. Wayne Murray, R.C.M.P. Nelson, B.C. Telephone Res: 352-7516
Bus: 352-3511 (Loc 23)

Cpl. Terry Barter, R.C.M.P. Chilliwack, B.C. Telephone Res: unlisted
Bus: 795-9424 (Loc 29)

Cpl. Rick Clark, R.C.M.P. N. Vancouver, B.C. Telephone Res: 942-5177
Bus: 985-1311

Cst. Gord Burns, R.C.M.P. Prince George, B.C. Telephone Res: 962-9857
Bus: 562-3371

Cpl. Terry Grimm, R.C.M.P. Terrace, B.C. Telephone Res: 638-8351
Bus: 635-4911 (Loc 26)

Conservation Office Brian Baldwin
British Columbia Fish & Wildlift, Smithers, B.C.

Cpl. Jim Brewin, R.C.M.P. Whitehorse, Y.T. Telephone Res: 668-3252
Bus: 667-5580

EQUIPMENT

Avalanche probes in sections of 2 ft. length, the same design as the MSR probe, are available from SEAR Search and Rescue Equipment, 2818 Bayview Street, SURREY, B.C. V4A 2Z4. The price of a complete 12 ft. probe is $40.00.

Garry Walton

RESCUE BALLOON

Mr. Hohenester, a forestry engineer, presented the idea of the avalanche rescue balloon at the Sulden Conference which was sponsored by the Vanni Eigenmann Foundation in 1975. (see Publications).

During the conference Mr. Hohenester presented a prototype of the balloon. The balloon has a capacity of 110 litres and will be inflated either manually or automatically with compressed gas when a person is caught by an avalanche. Tests that have been carried out in Germany by one of the largest insurance companies in Europe show that it is virtually impossible for a person to be buried in an avalanche when using this type of inflated balloon.

Parks Canada will be testing this piece of equipment in the Lake Louise ski area during the 1979-1980 season and reports on its effectiveness will be supplied to the International Commission of Alpine Rescue at the next meeting of delegates.

Even though electronic equipment aids in the rapid location of victims, the burial depth that is involved in some cases makes excavation of the victim time consuming. The balloon would be the first piece of equipment that is designed to prevent burial of the victim. Once tests have been carried out and finalized it is planned to design ski jackets in which the balloon could be contained.

Peter Fuhrmann

PUBLICATIONS

AVALANCHES - Protection, Location, Rescue. Published by the Fondation Internationale "Vanni Eigenmann" casella Postale 1693, 20100 Milano, Italy.

The book contains a selection of papers presented at the Avalanche Rescue Symposium at Sulden, Italy, April 26-30, 1975. It was published first in the German, French and Italian languages and recently has been translated into English. The English publication may be obtained free of charge from Peter Fuhrmann, Alpine Specialist, Parks Canada, P.O. Box 900, Banff, TOL OCO, Telephone: (403) 762-3324. The headings of the individual papers are:

Avalanche Danger
A. Roch

State and organization of prophylactic methods in the case of avalanches
M. Schild and F. Gansser

Correct behaviour in the case of avalanche accidents
R. Campbell

Basic questions regarding the detection of victims covered by an avalanche
M. De Quervain

Previous experience in the field of avalanche rescue practice
M. Schild

Problems with the transmitter-receiver for locating avalanche victims
W. Good

Transmitter-receiver apparatus for fast locating of avalanche victims
G. Monti-Guarnieri

Avalanche search by radio transceiver
W. Lorch

Electromagnetic avalanche victim detectors for rescue teams
A. Coumes

Medical problems at the avalanche site
G. Neureuther

The "Vanni Eiglenmann" symposium in Sulden and the further development of electronic detectors
G. and R Eigenmann

International Union of Forestry Research Organizations; Working Party Snow and Avalanches; Mountain Forests and Avalanches. Proceedings of a seminar held at Davos, Switzerland, 25-28 September, 1978. Published by the Swiss Federal Institute for Snow and Avalanche Research, Davos, 1979.

The book may be obtained free of charge from the Institute. Address for requests:

Eidgenössisches Institut für Schnee-und Lawinenforschung
7260 Weissfluhjoch/Davos, Switzerland

The publication contains 20 papers - 10 in English, 9 in German, and 1 in French - on the interaction between the snow cover and the forest including the problems of maintaining a forest in avalanche starting zones It is addressed to foresters and others who are concerned with growing and maintaining a forest capable of preventing avalanches.

Of particular interest to avalanche personnel are three papers:

- B. Salm: "Snow Forces on Forest Plants" (in English); a discussion of the stabilizing effect of trees on the snow cover.

- M. deQuervaim: "Forest and Avalanches" (in German); a discussion of the conditions which a forest must meet in order to prevent avalanches.

- P. Föhn: "Avalanche Frequency and Risk Estimation in Forest Sites" (in English); a discussion of the problems in evaluating the risks at forested paths where large avalanches run infrequently.

Colin Fraser; Avalanches and Snow Safety. Published in 1978 by Charles Scribner's Sons, New York, 269 p.

The book is a revised edition of Colin Fraser's The Avalanche Enigma, which was published in 1966 and has been out of print for several years. The book gives an overview of the many facets and is a good introduction to the complex phenomenon. It contains descriptions of historical disasters and numerous anecdotes about avalanches.

HELICOPTER SKIING

The following news release was issued in October 1979 to clarify government policy on commercial ski guiding. Mr. Alan Carter, Director of the Extension and Information Branch, Ministry of Lands, Parks and Housing has been responsible for implementing the new policy.

New government policy on commercial ski guiding in the province was announced today by Lands, Parks and Housing Minister James Chabot.

"While the inherent nature of back country skiing makes absolute safety impossible to achieve, this policy should decrease some of the risks and dangers to the public. The government will also encourage and promote the development of a viable heli-skiing and ski touring tourism industry in B.C. that is self-regulating and safety conscious," Chabot said.

The policy is concerned with businesses, associations, and individuals who charge fees for guiding or leading skiing excursions and courses on Crown land. Activities covered by the policy include heli-skiing, and ski touring.

The policy features:

- Safety standards developed co-operatively by industry, involved non-profit groups, educational institutions and government.

- Standards include:

  i) avalanche, first aid and search and rescue training course requirements for ski guides
  ii) safety and rescue equipment
  iii) filing of an operational safety plan

- Standards will not be adopted by government regulations at this time, but will be promoted by the industry and government.

- commercial ski guiding operators will continue to require a permit to use provincial parks.

"My staff have been working with the industry, educational institutions, and avalanche experts from the Ministry of Highways and National Research Council for over a year to develop practical courses and measures that should improve safety, and I am today announcing that four grants totalling $32,750 are being made as part of this Ministry's new outdoor safety program which will be in place for the 1979/80 season," Chabot said.

- $23,500 to the British Columbia Institute of Technology to re-evaluate and upgrade their avalanche courses, and to increase their suitability for practicing and potential professional ski guides, and the interested public.

- $5,000 granted to Capilano College to develop an advanced Wilderness First Aid Course, in co-operation with St. John Ambulance, for the amateur, or professional guide, or first aid instructor working in the area of Outdoor Recreation.

- $900 to the Association of B.C. Heli-skiing Operators to assist the development and production of an operators manual outlining ski guiding safety practices and standards.

- $1,500 to the Association of Canadian Mountain Guides to assist in the development and production of a mountain guides manual.

Chabot noted that since 1974 more than 20 people have been killed in ski guiding accidents and that with the industry growing at a substantial rate the government in co-operation with the industry was taking positive action to encourage safety.

Geoff Freer

PERSONAL NEWS

Willi Pfisterer, Alpine Specialist with Parks Canada at Jasper was appointed regular member of the Canadian Avalanche Committee. He replaces Jim Sime who has retired from service in the National Parks of Canada.

Dave McClung has joined the avalanche research group of the National Research Council Canada. His primary task is to conduct and analyze the studies of the motion of avalanches including impact pressures at Rogers Pass. Previously, Dave carried out research on snow mechanics with the Norwegian Geotechnical Institute and with Environment Canada at Canmore, Alberta.

Chris Stethem has established himself as a free-lance avalanche consultant. Besides continuing to be responsible for the avalanche control at Whistler Mountain he is available for consulting work concerning avalanche safety plans, avalanche control and education.