

INTRODUCTION

People engaged in avalanche work in Canada have expressed the wish to keep informed about new developments and to maintain contact with others working in the same field. In response to this need the Canadian Avalanche Committee is planning to mail a newsletter about three times per year. Peter Schaerer has agreed to be the editor and Geoff Freer through the offices of the B. C. Ministry of Transportation, Communications and Highways will be responsible for the printing and mailing.

Anybody interested in snow avalanches may regularly receive Avalanche News. This first issue is mailed to organizations and individuals who have their name on the mailing list for the avalanche course brochure. Future issues will be mailed to only those who either fill out and mail the form at the end of this letter, or request it in any other form. Supervisors should pass this letter to their avalanche field personnel who, perhaps would like to receive separate copies.

Avalanche News shall contain information about:

- Avalanche occurrences;
- Statistics and comments concerning accidents;
- Development and sources of equipment for observations, control, personal safety, search and rescue;
- New techniques;
- Meetings, training opportunities;
- Literature;
- Resource agencies, for example updated lists of dog masters;
- Personnel, open positions.

*J. Bay*

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**AVALANCHE NEWS**  
**OCTOBER 1979**

The newsletter can be a successful vehicle of communication only with the assistance of the personnel working with avalanche safety programs. This means you, the reader are expected to make contributions. If you have developed new techniques, discovered better equipment, observed interesting snow and avalanche features, experienced a close-call or an accident that might be educational, wish to announce training opportunities or open positions, then write to Peter Schaerer in a form that can be copied and printed.

#### THE CANADIAN AVALANCHE COMMITTEE

The Avalanche Committee responsible for the initiation of the Avalanche News is an informal small group that was formed in 1975 for the purpose of exchanging information and co-ordinating programs.

Presently the avalanche committee consists of the following regular members:

Peter Schaerer, National Research Council (Chairman)

Ron Perla, Environment Canada

Geoff Freer, B.C. Ministry of Transportation, Communications & Highways

Jim Sime, Parks Canada

Additional individuals usually join the meeting of the committee for discussions about specific topics. The committee held a recent meeting on 30 August 1979 and will again meet at the end of November.

#### REPORTING OF AVALANCHE INVOLVEMENTS

Every year there are numerous encounters with avalanches in which people are touched by an avalanche or buried, but escape serious consequences. Other avalanches catch vehicles, damage buildings, powerlines, telephone lines and other structures. Most of these incidents go unreported and probably there are more of them than is assumed. We wish to collect statistics about the extent of involvements with avalanches with the principal objective of impressing the public about the hazards and selling safety programs to authorities.

After discussing several drafts the Avalanche Committee has prepared a simple reporting form that should be completed for every encounter with avalanches and be mailed immediately to Peter Schaerer. A summary of the reports will be published regularly in the Avalanche News. All organizations and individuals known to be engaged in avalanche safety work will receive a set of forms together with instructions at the beginning of this coming

winter. The avalanche committee strongly encourages you to fill out a form whenever a person or an object was inconvenienced by an avalanche.

The reporting form asks for the most basic information only, such as location, date, number of people buried, or partially buried, damage, size of the avalanche. Of large accidents that cause death, serious injury or property damage in excess of \$10,000, the observer should obtain additional relevant information, such as the terrain of the starting zone, track, and runout zone, dimensions and type of the avalanche, weather, snow conditions (for example fracture line profile), circumstances of the accident, search and rescue, and write a complete report on special request.

#### CASE HISTORIES OF AVALANCHE ACCIDENTS

Avalanche accident histories were collected by Chris Stethem working under a contract with the National Research Council of Canada. He obtained the information from published reports, from files of agencies, and through interviews with people who were either eye witnesses of the accident or involved with the rescue operation. Each accident case history contains a summary of the weather, the snow conditions, the accident, the rescue, the characteristics of the avalanche, and a comment.

A first publication containing 40 cases of avalanches that resulted either in fatalities, injury, or property damage is available under the title:

Avalanche Accidents in Canada I:  
A Selection of Case Histories of Accidents, 1955 to 1976;  
by C. J. Stethem and P.A. Schaerer  
National Research Council Canada  
Publication NRCC 17292

The publication costs \$1.50 and may be obtained by mailing the appropriate remittance ( a money order, or cheque made payable to the Receiver General of Canada and credit NRC) to the Publications Section, Division of Building Research, National Research Council, Ottawa, K1A 0R6.

A second publication containing an additional 27 accident cases between 1943 and 1978 is in the editing and printing stage. Unfortunately it was too late to have included the accidents that occurred in the winter 1978-79. They will be part of a third book to be published when a sufficient number of new cases are collected. Presently Paul Anhorn of the National Research Council is maintaining the file of case histories and is responsible for assembling all the information about accidents.

### AVALANCHE FILM

The Avalanche Committee has received a proposal for the production of a 16 mm color/sound avalanche film of about 20 minutes running time intended to promote awareness of the dangers of avalanches. After discussions about the objectives of the film and problems in financing it the Committee has resolved that there is a strong need for an educational film on avalanche safety in back country travel rather than for a film aimed at a general audience. Subsequently Ron Perla has assumed the task of drafting a concept for such a film.

It is the intention to finance the film - cost about \$60,000 - by sponsors from industries and organizations that have an interest in avalanche safety. The Alpine Club of Canada has agreed to assist by assuming the role of a collection agency and trustee for the funds.

In the early part of 1980 the Avalanche Committee will invite sponsors to make commitments. The producer will be selected, and the script finalized in Summer 1980. Shooting of the film will take place in the winter of 1980-1981 and editing in Summer 1981.

The recipients of this newsletter are requested to suggest sponsors that are prepared to pay about \$3,000 or more toward the production cost and should be approached. The sponsors will receive a free copy of the film and will have the right to obtain additional copies at cost.

### EXPLOSIVES CONTROL

The National Ski Area Association (NSAA) in the U.S.A. is presently studying the use of explosives to control avalanches in ski areas and within the coming season a report should be issued on recommended procedures. Information can be obtained from Kent Hoopingarner, Chairman NSAA Avalanche Committee, Snowbird, Utah 84070.

### WEATHER FORECASTS

Many operators are dissatisfied with the daily weather forecast issued by the Atmospheric Environment Service, therefore some of the complaints were discussed with Frank Williams, Officer in charge and Peter Haering, Chief Meteorologist of the Pacific Weather Centre at Vancouver on 31 August. The following resulted from the discussion:

Due to the great variation of terrain and elevation in Western Canada improvements to the weather forecast are limited. One can not expect the

weather office to predict exactly the weather including the amount of snow fall for each remote valley and given elevation. In view of the great variation of the weather in the mountains the weather forecast is kept rather general, and users must supplement it with their own local observations.

Presently the mountain forecast from the Atmospheric Environment Service contains:

- a) The Synopsis giving the location and motion of weather systems,
- b) The Freezing level, temperatures,
- c) The Expected amount of snow fall
- d) Information about wind when it is significant.

It should be remembered that the amount of snow fall is most difficult to forecast, therefore it is the least accurate information of the forecast. The amount of snow fall contained in the weather forecast should be considered a guidance only. It may also be worth knowing that the Pacific Weather Centre makes a prediction of the probable amount of precipitation, then multiplies this by 10 in order to obtain the amount of snow fall. As snow observers know, the specific gravity of the new snow is usually less than 0.1, therefore the actual depth of new snow would tend to be greater than forecasted.

It should also be pointed out that the forecasts for wind speed and direction refer to the mountain tops, and the wind can be significantly different in the valley.

Avalanche hazard forecasters are recommended to make use of the weather services as follows:

1. Make your local weather observations.
2. Obtain the mountain or public weather forecast from the radio, by telex, telephone, etc. Write it down.
3. Call the nearest weather office and ask for a weather briefing. Give the operator at the weather station your present weather and discuss with him the expected changes. The weather office is better able to give information about expected changes of the weather rather than a full picture on how the weather will be.
4. Use your own local observations and experience to make adjustments to the forecast. Observe the weather continuously during the day and compare with the forecast.
5. Post the forecast for use by skiers, road crews, maintenance staff.

Weather briefings should be requested in the first choice from the weather offices at Vancouver, Edmonton, Kamloops, Castlegar, Prince George where trained meteorologists are available. Good services, however, can also be obtained from other offices such as Cranbrook, Revelstoke, Kelowna.

It may become clear from this recommendation that a satisfactory local weather forecast is based on a mutual exchange of information. At the beginning of the winter the person in charge of an avalanche safety program should visit the nearest weather office, and discuss with the forecaster his operational needs. It also helps to invite the weather forecaster to the avalanche area and to ask him to participate in avalanche safety seminars for the local staff.

The use of the weather forecast will be treated in the future in avalanche courses and be discussed in workshops.

#### AVALANCHE WORKSHOP

The Avalanche Committee plans to hold a state of the art meeting similar to the workshop held at Banff 1-3 November, 1976.

Date: 3-5 November, 1980

Location: Vancouver, B.C.

Topics for discussion:

Safety in back country travel

Education, training courses

Avalanche size classification

Mountain weather forecast

Current state of the art of search and rescue, avalanche control, stability analysis, hazard forecasting.

A brochure containing a pre-registration form will be available in November, 1979 and will be mailed to those receiving this newsletter.

Additional brochures should be requested from Peter Schaerer or Geoff Freer.

Address:

Mr. G. L. Freer  
Senior Avalanche Co-ordinator  
Ministry of Transportation, Communications & Highways  
940 Blanshard Street  
Victoria, B.C. V8W 3E6



AVALANCHE COURSES

In the winter 1979-1980 a series of avalanche training courses for operational personnel will be held again. The brochure describing the courses was mailed in the first week of October, and information may be obtained from the course co-ordinator:

Mr. Garry Walton  
Industry Services Division  
British Columbia Institute of Technology  
3700 Willingdon Avenue  
Burnaby, B.C. V5G 3H2  
Telephone 434-5734, local 628

During a meeting on 17, 18, 19 September 1979 the content and training objectives of the courses were discussed. Present at the meeting were Willi Pfisterer (Parks Canada), Geoff Freer (B.C. Highways), Chris Stethem (Whistler Ski Area), Peter Schlunegger (Heliski operator and mountain guide), Peter Schaerer (National Research Council), Garry Walton (B.C.I.T.), Mel Sharpe (B.C.I.T., discussion leader).

It was decided to offer the courses in two levels of skills.

Level I (Introduction); Basic knowledge of avalanches and safety measures.

Level II (Advanced): Application of the knowledge in field work.

Students who apply for the level II courses must have attended a level I or equivalent course and have at least 100 days proven field experience. At the beginning of the course the students must prove their knowledge by passing an entry exam and presenting a field book with observations or a case history of an avalanche occurrence cycle.

The level II courses will contain a more comprehensive examination and evaluation of the students than the courses of previous years. The students will be evaluated not only on the last day but continuously during the course.

The knowledge instructed at the courses essentially is applicable in any avalanche area, but for reasons of organization and in order to stress certain applications of safety measures the courses are subdivided into user groups:

- a) Transportation and industry
- b) Ski areas
- c) Guiding, back country travel

Skiing ability in variable terrain and snow is essential for participants of the ski area and guiding courses.

In future years seminar-type courses will be offered to those who have completed a level II course and need to upgrade their knowledge.

#### EXAM QUESTIONS FOR AVALANCHE COURSES

At the meeting of operational avalanche personnel on 24/25 May 1979 Gary Walton requested that each participant prepare 10 multiple choice questions that could be used for the entry exam of the advanced avalanche course and perhaps for the exams at the end of the courses. Only 6 questionnaires and 2 apologies were received from 26 people attending the meeting.

For the sake of those who did not reply we shall assume that they found it quite difficult to ask questions that have only one definite answer.

In the avalanche business the answer to many problems usually depends on the circumstances.

We wish to thank the six avalanche specialists who took the effort to write and to mail a questionnaire.

#### SELIGMAN'S BOOK

The International Glaciological Society plans to reprint the book by Gerald Seligman: Snow Structure and Ski Fields. The book, originally published in 1936, soon became out of print, but being the classical work for the practical man a strong demand for it continued. In order to obtain an indication about the number of copies that should be printed the Secretary of the International Glaciological Society wishes to receive pre-orders. The price will be about \$25.00. Later the book will also be available through a commercial outlet in Western Canada at a higher price. People who wish to obtain a form for pre-orders should write to Mrs. H. Richardson, International Glaciological Society, Lensfield Road, Cambridge CB2 1ER, England.

#### NEXT ISSUE OF AVALANCHE NEWS

The next issue is planned for February, 1980.

Deadline for the submission of contributions: 31 January 1980.

#### Remember:

Only those making a request will receive the next issue.

No contributions from readers - no future issues.