

**POLICY BULLETIN**  
Emergency Management British Columbia

**INTERIM POLICY – February 2011**  
**SEARCH AND RESCUE RESPONSE - AVALANCHE RISK ZONES**

**General**

The following policy supersedes that contained in:

PEP Policy Bulletin No. 00.3 dated March 1, 2010

The policy is in effect whenever a search and rescue (SAR) Group is conducting training, exercises or is tasked to a known avalanche incident, avalanche recovery or if a ground or inland water search and rescue operation is or may be taking place in an avalanche risk zone<sup>1</sup>.

**Purpose**

The purpose of this policy is to:

- Reduce the risk of avalanche to search and rescue responders;
- Promote a coordinated, integrated and layered response to SAR incidents in avalanche risk zones;
- Increase the effectiveness and efficiency of the Avalanche Search and Rescue operations; and
- Provide a provincial framework that enables a rapid response to avalanche incidents, while maintaining a balance between rescuer safety and subject survivability.

**Policy**

A task number will be issued to the Search and Rescue Manager of a Search and Rescue Group that meets the following criteria:

- Has an Avalanche Rescue Response Plan.
- Has an Avalanche Safety Officer available.<sup>2</sup>

---

<sup>1</sup> WorkSafeBC Occupational Health and Safety Regulation.

<sup>2</sup> Availability can be either remote or on-site.

## **Conditions for On-site Operations**

Onsite operational requirements include the following:

1. The Emergency Management British Columbia (EMBC) Interim Avalanche Safety Plan is implemented.
2. The completion of an Avalanche Risk Assessment by an Avalanche Safety Officer to ensure situational awareness and identify the level of avalanche danger to SAR personnel.
3. The establishment and documentation of an Active Avalanche Safety Program to implement risk mitigation measures identified in the Interim EMBC Avalanche Safety Plan.
4. The activation of an avalanche trained Dog Team for all avalanche rescue and/or recovery operations.

All Search and Rescue personnel working within an Avalanche Risk Zone must have completed, as a minimum, one of the following training courses:

- The Canadian Avalanche Association (CAA) Recreational Avalanche Course;
- The CAA Avalanche Skills Training Level 1 Course;
- The Justice Institute of British Columbia's (JIBC) Organized Avalanche Response Team Member course.

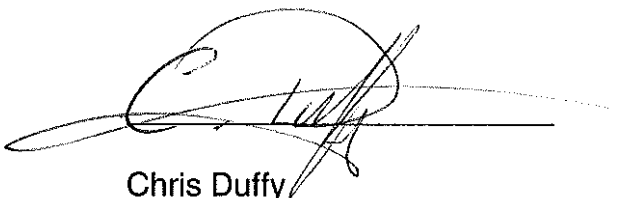
Evaluating the potential consequences of anticipated avalanche activity in specific situations is critical to determining potential avalanche risk. The Avalanche Safety Officer, in consultation with the SAR Command staff and the Avalanche Site Safety Officer, exercises expert judgement in making an overall evaluation of the risk to SAR personnel and the subject versus the benefit of an immediate and rapid response and the exposure of SAR personnel to Avalanche hazard. No Search and Rescue personnel are to conduct on-site operations in

an Avalanche Risk Zone prior to the approval and direction of the Avalanche Safety Officer or their delegate.

The Avalanche Safety Plan identifies specific active safety measures. Typically CAA qualified avalanche workers (with a level 2 or 3 certificate) will fulfill the role of Avalanche Safety Officer and oversee and implement the program. The Active Avalanche Safety Program establishes condition for onsite operations such as; the qualifications of the volunteers who will fulfill the role of Avalanche Site Safety Officer and implement the Active Avalanche Safety Program.

The member of the search and rescue team tasked with fulfilling the role of Avalanche Site Safety Officer and with supervising the measures specified in the Active Avalanche Safety program will normally have completed, at a minimum, a CAA Level 1 certificate or JIBC Organized Avalanche Response Team Leader Course.

This policy and the EMBC Interim Avalanche Safety Plan will be reviewed annually.

A handwritten signature in black ink, appearing to read 'Chris Duffy', is written over a horizontal line. The signature is stylized and includes a large loop at the beginning.

Chris Duffy  
Executive Director, Emergency Coordination  
February 2010

## **Definitions**

### **Incident Commander**

The individual responsible for the management of all incident operations at the incident site. The term 'Incident Commander' includes Unified Command. During SAR operations in British Columbia the role of the Incident Commander is filled by a representative of the police, BC Ambulance Service, Fire Services, Coroner or Parks Canada.

### **Search and Rescue Manager<sup>3</sup>**

Under the general direction of the Incident Commander, the SAR Manager will manage the volunteer SAR response during a SAR response.

### **Avalanche Safety Officer<sup>4</sup>**

A member of the Command Staff responsible for assessing the avalanche hazard, monitoring weather and avalanche conditions, and for developing and implementing the Active Avalanche Safety Program.

Typically CAA qualified avalanche workers (with a CAA level 2 or 3 certificate) will fulfill the role of Avalanche Safety Officer and oversee and implement the program.

### **Avalanche Site Safety Officer<sup>5</sup>**

A Site Safety Officer is located at the site of an avalanche and is responsible for evaluating the risk of further avalanches, identifying safety hazards or unsafe situations, monitoring on-site rescue operations, conducting field assessments and gathering observations, and for implementing and supervising measures for ensuring personnel safety.

The member of the search and rescue team tasked with fulfilling the role of Avalanche Site Safety Officer and with implementing and supervising the measures specified in the Active Avalanche Safety program will normally have completed, at a minimum, a CAA level 1 certificate or JIBC Organized Avalanche Response Team Leader course.

---

<sup>3</sup> JIBC SAR Management Manual, 2008

<sup>4</sup> Supra at 1.

<sup>5</sup> Supra at 1.

### **Avalanche Safety Plan<sup>6</sup>**

Means a documented plan meeting CAA guidelines, specifying passive measures to mitigate or reduce the avalanche risk to any person working at the workplace and any active avalanche safety program necessary to monitor and manage any avalanche risk that has not been mitigated through use of passive measures.

### **Active Avalanche Safety Program<sup>7</sup>**

Means a program for monitoring daily, or more frequently if conditions warrant, the weather, snow and avalanche conditions, determining temporal fluctuations of avalanche hazards and implementing safety measures, closures or other methods specified in the program to reduce avalanche risk that has not been mitigated through use of passive measures.

### **Avalanche Risk Assessment<sup>8</sup>**

The determination of the characteristics of the terrain in and around a geographic area based on an analysis of topographic variables, the snow climate, the estimated return periods and magnitudes of avalanches, and the type of activity that is to be done in that area.

### **Avalanche Risk Zone<sup>9</sup>**

A workplace or part of a workplace where an avalanche risk assessment determines that avalanches pose a risk to any person working at the workplace and risk control measures are required to make the area safe for work to be conducted.

### **Rescue Response Plan<sup>10</sup>**

The response plan is a set of guidelines developed by the SAR group that specifies a series of steps that a SAR manager would take to respond to a particular type of incident.

---

<sup>6</sup> Supra at 1.

<sup>7</sup> Supra at 1.

<sup>8</sup> Supra at 1.

<sup>9</sup> Supra at 1.

<sup>10</sup> Supra at 3.

## **QUESTIONS AND ANSWERS**

### **Avalanche Safety Planning**

#### **Q: Are SAR Groups required to develop their own Avalanche Safety Plan?**

No. EMBC has created an interim avalanche safety plan for all public safety lifeline organizations that meeting the guidelines of the Canadian Avalanche Association. EMBC does not expect volunteer search and rescue groups to develop their own avalanche safety plans. SAR groups are required, as indicated in the policy, to develop avalanche specific rescue response plans which would provide specific information in regard to group equipment specific operational procedures.

#### **Q: What is the process to provide feedback on the Interim Policy and Avalanche Safety Plan?**

The BC SAR Association, as the organization tasked with providing SAR Advice to government on behalf of the volunteer community, will be actively soliciting feedback from SAR Groups in regard to these documents. The resulting feedback and recommendations will be presented to EMBC for consideration prior to the September 2011 WorkSafeBC deadline.

#### **Q: Can volunteer organizations develop their own avalanche safety plan?**

Yes. Any Avalanche Safety Plan developed by a volunteer search and rescue organization will need to be signed off by a Qualified Avalanche Planner<sup>11</sup> by September 2011 and filed with EMBC.

#### **Q: The Canadian Avalanche Association's recommended generic table of contents for Avalanche Safety Plans seems to be oriented to industrial workplaces and are not suitable for volunteer search and rescue organizations. Are we able to adjust the table of contents to meet our requirements?**

The intent of the recommended generic table of contents is to facilitate the development of Avalanche Safety Plans required under the recently approved WorkSafeBC regulation, and to encourage reasonable congruency within and between sectors. It is hoped that organizations such as Canada West Ski Areas Association, HeliCat Canada, Backcountry Lodges of BC, BC Commercial Snowmobile Operators Association and others will use this generic content to develop sector specific templates for their members to use when producing avalanche safety plans for their individual operations.

---

<sup>11</sup> Supra at 1.

**Q: What is the difference between the Avalanche Safety Plan and an Active Avalanche Safety Program?**

**Avalanche Safety Plans** are developed to characterize beforehand what your organizations planned approach will be to managing avalanche risk.

**Active Avalanche Safety Programs** are developed and implemented at the beginning of an operation and are specific to the location where you plan to conduct on-site operations, operational requirements, as well as weather, snowpack and avalanche conditions at the time of the incident. Specifically the EMBC interim Avalanche Safety Plan does not address issue of available equipment and operational procedures at the Group or site level. It is expected that SAR Groups include this information in their Rescue Response Plans.

**Q: What are the expectations of SAR Groups in identifying avalanche hazard in their response area?**

It is recognized that the vast majority of SAR Groups have avalanche hazard within their area of responsibility. The identification of avalanche hazard is accomplished a number of ways which are identified by the Canadian Avalanche Association (Canadian Avalanche Association, 2008). SAR Groups should endeavour to access existing Avalanche related information within their area of responsibility and where no information exists should refer to Figure 3.1 in the Land Managers Guide to Snow Avalanche hazards in Canada (CAA, 2008) as the recommended process to identify whether or not avalanche hazards is present in a specific area.

**Q: What are the expectations of SAR Groups in identifying and/or mapping avalanche risk zones in their response area?**

Where reasonably practicable, SAR Groups should access existing avalanche terrain inventories such as those completed by local authorities, industrial operators and other land managers.

For areas where no detailed risk assessment and/or no terrain classification exists the expectation is that major avalanche risk zones are identified.

Examples of methods used to accomplish this requirement include:

- A cursory review by the Avalanche Safety Officer utilizing a topographic map and/or Google Earth™, to identify and indicate the major avalanche risk zones. This information could then be faxed

and/or emailed to the Avalanche site Safety Officer. It is expected that with accurate information in regard to the incident location that this could be accomplished in a reasonably short period of time. It is also recognized that for historical / frequent response areas this can be done ahead of time in anticipation of future operations

- Using the 'Line Locator' method described in the Land Managers Guide to Snow Avalanche Hazard in Canada as part of the active Avalanche safety Program.

### **Avalanche Safety Officer**

#### **Q: What does the Avalanche Safety Officer do?**

The Avalanche Safety officer is responsible for determining the requirements of the Active Avalanche Safety Program such as identifying the qualifications of the volunteers who will implement the Active Avalanche Safety Program. The Avalanche Safety Officer will also set out the qualifications required by those who will be working in the Avalanche Risk Zone.

The function of Avalanche Safety Officer should be fulfilled by the most experienced and trained individual available.

#### **Q: Can the Avalanche Safety Officer fulfill the function of the Avalanche Site Safety Officer?**

Yes. This may be determined through their immediate available to do so and also identified within the requirements of the Active Avalanche Safety Program.

#### **Q: When will a remote vs. onsite avalanche safety officer be sufficient?**

This will be dictated by the specifics of each incident and the determination is ultimately made by the Avalanche Safety Officer and is a component of the Active Avalanche safety Program. For the most part consideration must be given to the following; avalanche, weather and snowpack conditions, incident location, accident site conditions, complexity of terrain, complexity of rescue requirements, proximity of the Avalanche Safety Officer to incident, availability of suitably trained personnel (Avalanche Site Safety Office, Avalanche Rescue Team Leader or CAA Trained Avalanche Workers), and the availability of information to establish an avalanche danger rating.

## **Avalanche Site Safety Officer**

### **Q: What is the role of the Avalanche Site Safety Officer?**

The member of the search and rescue team tasked with supervising and implementing the measures specified in the Active Avalanche Safety program. They will normally have completed, at a minimum, a CAA Level 1 certificate or JIBC Organized Avalanche Response Team Leader course.

## **Active Avalanche Safety Program**

### **Q: When is an active Avalanche Safety Program Required?**

An active avalanche safety program is required for both training and response where on-site operations occur within an identified Avalanche Risk Zone.

### **Q: In the condition for on-site operations it states that the Avalanche Safety Officer has final authority on initiating on-site operations or he can delegate this decision. Who can he delegate this decision too?**

The Avalanche Safety Officer can delegate this decision to the Avalanche Site Safety Officer. It is recognized that the Avalanche Safety Officer may not have sufficient information available to them at the onset of the incident to make this determination and that a response may have to be initiated to investigate the avalanche accident site and/or gather weather, snowpack and avalanche observations in the response area.

### **Q: Active Avalanche Safety Programs appear to be very complex. What are the expectations for a Search and Rescue Response?**

Active Avalanche Safety Programs are incident specific.

Active Avalanche Safety Programs for search and rescue response should primarily identify the avalanche danger level and implementation of risk mitigation measures such as avalanche terrain avoidance, the implementation of travel advisories for field teams, the use of personal protective equipment and the ongoing monitoring of weather, snowpack and avalanche conditions.

For ongoing operations (multiple operational periods), such as a ground search or extended rescue operation, the importance of gathering weather, snowpack and avalanche observations and using this information to plan field activities becomes more relevant. The requirement to collect

such information would be identified by the Safety Officer when developing the Active Avalanche Safety Program.

To aid in the rapid development and documentation of an Active Avalanche Safety Program volunteer organizations can use the ICS 305A Active Avalanche safety Program form in conjunction with other supporting material. Examples of supporting material include those identified on the ICS 305A form, maps and the SAR Groups Avalanche Incident Response Plan.

**Q: What are active avalanche safety measures?**

These are strategies to mitigate avalanche risk that rely on SAR responders to maintain awareness of and implement when and where directed. Active Avalanche Safety Measures include terrain selection, personnel competency level, use of explosives and the use of personal protective equipment such as an avalanche transceiver, shovel and probe.

**Q: What are passive avalanche safety measurers?**

*"Passive measures"* means the application of CAA guidelines and other relevant standards and practices in engineering, geosciences, and forestry to worksite and facility planning, location, design and use to mitigate or reduce the risk from avalanches without reliance on an Active Avalanche Safety Program, and may include the design and construction of physical defences against avalanches.

**Q: When are SAR Managers required to activate an Avalanche trained Dog Team?**

SAR Managers are required to activate avalanche trained Dog Teams to all avalanche related incidents, including recovery operations. The Active Avalanche Safety Program will provide information in regard to the extent of the participation of the Dog Team.

**Q: Do we need to activate an avalanche validated dog to a non-avalanche rescue incident that occurs in an Avalanche Risk Zone?**

These operations require an Avalanche Safety Officer and Active Avalanche Safety Program. The Avalanche Safety Officer will make the determination of the need of specialised resources and identify these in the Active Avalanche Safety Program.

## **Recovery Operations**

### **Q: What level of risk is acceptable during recovery operations?**

There is inherent risk in avalanche rescue work that should be mitigated as much as reasonably practical. Although risk may not be fully eliminated it is expected that every reasonable effort will have been made to reduce the overall risk to rescuers to a minimum.

### **Q: Do search and rescue teams have a responsibility to recover the Subjects equipment?**

No. Search and Rescue teams have no obligation to recover a subject's equipment. The RCMP or Coroner may request as part of their investigation into the incident that certain items be recovered from an accident site. Individuals are responsible for their own property.