



Findings and Recommendations of a Death Review Panel Convened To Examine Winter 2008-2009 Avalanche Related Deaths Involving Snowmobile Operators

Report to the Chief Coroner of British Columbia

December 2009

Preamble

On November 9 and 10, 2009, a Death Review Panel was convened in Kamloops to examine the circumstances surrounding the deaths of 19 recreational snowmobile operators who died in British Columbia as a result of being buried in avalanches.

Sixteen Panel members were appointed under Section 49 of the *Coroners Act*. The Panel represented a wide cross-section of stakeholder interests and subject matter experts including members of snowmobile clubs from British Columbia and Alberta, representatives of the commercial adventure tourism sector, avalanche safety professionals, and members of academia specializing in adventure tourism, risk management and decision-making processes in avalanche terrain. Government officials from agencies with mandates in public safety, land management and adventure tourism were also included.

The purpose of a death review panel is to review the facts and circumstances of deaths in order to provide advice to the Chief Coroner with respect to matters that may impact public health and safety and the prevention of deaths.

Following the review, the panel's chairperson reports to the Chief Coroner any findings respecting the circumstances surrounding the deaths that were the subject of the review and any recommendations respecting the prevention of similar deaths.

Members of the death review panel must not make any finding of legal responsibility or express any conclusion of law.

Terms of Reference

The terms of reference for this Panel were established under Section 49(2)(c) of the *Coroners Act* and were as follows:

- To review coroners' investigative findings and additional information provided by other organizations with respect to the 19 deaths;
- To discuss environmental and human factors involved in those incidents;
- To explore the presence of trends, patterns or themes associated with these deaths;
- To discuss the level of public avalanche awareness and education as applicable to these deaths;
- To discuss the state of public avalanche safety programming, as applicable to these deaths, in place at the time of the incidents, and/or currently in place;
- To discuss any potential gaps in the applicable safety network; and
- To provide the Chief Coroner with advice on how to prevent similar deaths in the future.

While the deliberations of the Panel are subject to the privacy provisions of the *Coroners Act*, the Chief Coroner may publish and distribute materials for the purpose of informing the public respecting the prevention of deaths.

After examining the circumstances related to the 19 fatal incidents, the Panel reached several conclusions and suggested strategies for preventing similar deaths in the future. The Panel's findings and conclusions were reported to the Chief Coroner by the Chairperson, who endeavoured to accurately document the will of the Panel, but who is solely responsible for any errors or omissions in the content of this report.

Findings

During the winter of 2008-2009, a total of 24 avalanche deaths were reported to the British Columbia Coroners Service (BCCS). Nineteen of those deaths involved recreational snowmobile use in the backcountry, while the remaining five cases involved skiing or snowboarding.

The Panel was informed that winter backcountry use by all groups, including skiers and snowmobilers, has been on the increase in recent years. While recognizing that large numbers of snowmobilers managed to recreate safely in the backcountry, the panel also acknowledged that there was a growing gap in the level of avalanche awareness, preparedness and the patterns of backcountry use during elevated risk conditions, between snowmobilers and the most often compared group, the backcountry skiers. Skiers were more likely to engage in avalanche safety training and more likely to utilize avalanche safety tools such as the Avaluator, a decision support utility designed to help recreationists manage avalanche risk.

Modern snowmobile technology allows riders to access more terrain than ever before. This almost unimpeded and rapid access to vast, often complex terrain creates a requirement for intricate decision-making, comparable to that exercised by professional mountain guides in helicopter-accessed ski operations. The heli-ski operations are also characterized by quick access to almost boundless mountain terrain, but the guides have the benefit of advanced professional training and make their decisions in the context of daily observations of local conditions and professional team-based planning. The Panel recognized that the level of expertise required in order to make safe travel choices in complex terrain and under difficult avalanche conditions was beyond that which could be gained through entry-level recreational avalanche courses. Furthermore, in some of the cases examined by the Panel, the persons involved in avalanche incidents did not have the benefit of even the most basic avalanche training.

Last season's 19 snowmobile deaths resulted from 11 separate avalanche incidents. The first incident of the winter, on December 28, 2008, resulted in eight deaths. One other incident resulted in a double fatality; the remainder involved single fatalities. In a number of these incidents, additional persons were also buried by the avalanche, but were subsequently rescued. The last fatal incident of the season occurred in April of 2009. Asphyxia, or lack of oxygen resulting from burial in the snow, was the cause of death in all 19 snowmobile-related cases.

Most of the incidents (12) involved individuals in their late twenties and early thirties. Three decedents were in their early twenties, two in their mid-forties and two in their early fifties. Eleven of the deceased were residents of British Columbia and eight were residents of Alberta. In terms of separate avalanche events, four of the fatality-causing incidents involved British Columbians and seven incidents involved Albertans.

Most, but not all, snowmobilers involved in last season's fatal avalanches (the decedents and the surviving members of their groups) were equipped with avalanche safety gear. However, in some cases the equipment was not properly deployed (transceivers turned off; avalanche airbags either removed or not activated at the time of the avalanche). In other incidents, the safety equipment was deployed properly, but the length of time it took to locate and extricate the buried persons prevented live recovery. It is important to note that asphyxial deaths can happen in minutes.

The season of 2008-2009 was beset by the presence of persistent weak layers, which formed in the snowpack during periods of dry weather between storm cycles. The earliest of these problem layers formed in December and were subsequently buried under new snowfall. Additional weak layers formed in January, February and March. Although the weak layers were becoming less reactive the deeper they were being buried in the snowpack, when eventually triggered, they had a tendency to result in large, destructive avalanches. These conditions resulted in significant challenges for both the avalanche forecasters and backcountry recreationists.

Avalanche conditions were reported throughout the winter in the form of public advisories issued by the Canadian Avalanche Centre (CAC). This not-for-profit corporation serves as Canada's national public avalanche safety organization and operates with self-generated revenue, donations and additional funding from the British Columbia, Alberta and federal governments.

In addition to regularly scheduled Public Avalanche Forecasts and Public Avalanche Reports, during the winter of 2008-2009, the CAC also issued six Special Public Avalanche Warnings (SPAWs) in times of elevated avalanche risk. Further, the CAC, in collaboration with its governmental partners, produced six press releases intended to raise avalanche awareness. Some of this messaging specifically addressed the snowmobiling community. Panel members expressed an opinion that this extensive public messaging likely prevented many additional deaths that would have otherwise resulted given last season's difficult conditions.

At the same time, evidence suggested that in many cases, avalanche forecasts were not consulted by members of the snowmobiling parties prior to the trip; in others, the groups were aware of the hazard ratings, but did not establish a connection between the conditions being reported in the advisories and the situations they experienced in the field. In many cases, there appeared to be a lack of understanding of the complex relationships between the various terrain features, the critical snowpack conditions and how all those factors interacted, resulting in devastating avalanches. In general, there was an absence of methodical snow stability observations or risk assessments appropriate to the given terrain and snowpack conditions. In some cases, the groups either ignored or were not aware of cardinal safety rules, such as not placing more than one snowmobile on a given slope, as this increased the group's exposure to avalanche risk. Similar errors were observed in the execution of some companion rescues when, following the initial avalanche, too many members of the group stayed on the slope, where they were exposed to additional avalanches.

The Panel acknowledged that regardless of the extent of public avalanche programming, safety advisories and public warnings, some elements of any user group, be it skiers or snowmobilers, may fail to take the warnings under advisement and may choose to take undue risks. However, following this review, the overwhelming sentiment of the Panel was that many of last winter's fatal incidents resulted, not so much from willful exposure to insurmountable known risk, but from underestimation of the actual risk involved. In some cases, the parties attempted to make safe travel choices, but failed in their attempts due to their apparent lack of understanding of avalanche processes.

One of the all-encompassing conclusions is that more collective effort needs to be committed by all stakeholders towards building greater avalanche awareness and creating a culture of avalanche safety within the snowmobiling community.

Tom Pawlowski, Chair

Recommendations

The *Coroners Act* directs that, following each review by a death review panel, any findings and recommendations made by the panel respecting the prevention of similar deaths must be reported to the Chief Coroner.

The Chief Coroner may bring the findings and recommendations of a death review panel to the attention of appropriate persons, public authorities or the public.

The Panel submits to the Chief Coroner the following recommendations for review, consideration and distribution, as deemed appropriate by the Chief Coroner:

1. To the British Columbia Coroners Service

Expand on the information routinely collected in the course of coronial inquiries into avalanche fatalities to include detailed information on the deceased's and companions' level of avalanche awareness, preparedness and the risk assessment and decision-making processes involved in avalanche incidents.

Chair's comment: While undertaking the analysis of contributory factors associated with these fatal incidents, the Panel was at times challenged by a lack of information pertaining to the level of avalanche preparedness or the risk assessment and mitigation techniques employed prior to the avalanche. For example, in some cases, the information obtained in the course of investigations indicated that the deceased had received some avalanche safety training, but it was not always clear exactly what this training comprised. Similarly, it was not always evident what risk assessment techniques and decision-making processes took place prior to the fatal incidents. Recognizing that such information may not always be available to the investigators, the Panel urged the BCCS to endeavour that this information be collected and documented whenever possible, as it may be of value to organizations developing avalanche safety programming.

2. To the Provincial Emergency Program, Province of British Columbia

Partner with the Canadian Avalanche Centre (CAC) to develop and deliver avalanche awareness programming for snowmobilers, similar to the Snowmobile Outreach Program funded by the Government of Alberta and delivered in that province under the auspices of the CAC.

Chair's comment: The goals of the Snowmobile Outreach Program funded by the Government of Alberta and delivered by the CAC and private educators, are to promote awareness of avalanche risks associated with snowmobiling activities; to encourage the use of avalanche safety products and equipment; and to encourage participation in Avalanche Skills Training courses. The Outreach Program is built around the concept of low-cost safety

seminars delivered in communities across the province to snowmobilers and their families. The Panel concluded that, in the face of the growing popularity of snowmobiling, a reduction in avalanche accidents can only be achieved through creation of greater awareness and cultivation of a culture of avalanche safety in the snowmobiling community.

3. To the Canadian Avalanche Centre (CAC) and the Insurance Corporation of British Columbia (ICBC)

Develop avalanche awareness materials to be distributed, in partnership with ICBC, at point of registration of all snowmobiles purchased in British Columbia.

Chair's comment: One of the challenges to effective dissemination of avalanche safety information has been in ensuring that the information reaches all participants in the activity of snowmobiling. Registration of vehicles provides an opportunity for widespread distribution of safety material. On November 10, 2009, the Government of British Columbia introduced a new Off-Road Vehicle (ORV) Management Framework. The implementation of service delivery for all ORVs will be the responsibility of ICBC. The Panel recognized that, whereas the CAC has the expertise to develop appropriate avalanche safety information for snowmobilers, ICBC is well positioned to effect the distribution of such material to the user group. The CAC may also wish to explore opportunities for additional distribution through secondary outlets, such as provincial government offices (FrontCounter BC, Service BC Centres), and voluntary participants, such as ORV retailers.

4. To the Canadian Avalanche Centre (CAC) and the Government of Alberta

It is recommended that the CAC partner with Service Alberta to distribute avalanche awareness materials at the point of registration of snowmobiles.

Chair's comment: A significant percentage of snowmobilers who lost their lives in avalanches in B.C. during the winter of 2008-2009 were visitors from Alberta. Any measures designed to ensure avalanche safety of the snowmobiling community must be directed to snowmobilers in both provinces. Distribution of avalanche safety materials at the point of registration of snowmobiles would be an effective means for ensuring the widest possible dissemination. Service Alberta provides motor-vehicle-related services, including registration and licensing, through the network of community-based registry agents who deliver services on behalf of the Government of Alberta. Whereas the CAC has the mandate and expertise to develop appropriate avalanche safety information for snowmobilers, Service Alberta may be in the best position to effect the distribution of such material to the user group, through the registry agent network.

5. To the Canadian Avalanche Centre

Develop a Competency Matrix that clearly outlines qualification criteria and explains the limits of training offered through the AST programs.

Chair's comment: The CAC has developed the curriculum for Avalanche Skills Training (AST) programs and provides the training materials to independent instructors who deliver AST courses as a small business or public service ventures within numerous communities. The AST1 and AST2 courses offer a combination of classroom and field instruction and provide, respectively, entry-level and intermediate-level decision-making frameworks for recreationists. The Panel heard that the combination of complex terrain and difficult avalanche conditions, which formed the backdrop of many of the incidents from last season, represented challenges beyond the skills and training obtained through the AST courses. The Panel was of the opinion that the CAC should develop a competency matrix to help AST students understand the limits of their training.

6. To the Canadian Avalanche Centre

Explore the need to either expand the current AST course component dealing with companion rescue or develop an additional course to specifically address companion rescue skills for recreationists.

Chair's comment: Examination of the avalanche incidents revealed challenges faced by recreationists who were called upon to execute rescues of their companions. In one particular case, the actual manner of execution of companion rescue led to loss of additional lives. Recreational Avalanche Safety Training courses (AST 1 and AST 2) include segments on companion rescue, but due to the short duration of these courses, the companion rescue modules are subject to limitations. While recognizing that any training must place emphasis on avalanche avoidance in the first place, the Panel also acknowledged that it is critical for all recreationists to develop solid companion rescue skills.

7. To the Canadian Avalanche Centre

The Panel recommends that the CAC provide web feeds, such as RSS, in order to enable the public to receive updates on avalanche conditions reported through Special Public Avalanche Warnings.

Chair's comment: In addition to the regularly issued Public Avalanche Forecasts and Public Avalanche Reports, the CAC also issues Special Public Avalanche Warnings (SPAWs) in times of elevated avalanche risk. SPAWs can be viewed on the CAC website and the warnings are also communicated to media outlets. During the 2008-2009 winter season, the CAC issued six SPAWs. Whereas members of the public can subscribe to receive the regularly issued CAC

avalanche forecasts via email, the CAC website is currently not set up to offer web feeds with special updates on avalanche conditions. Feeds such as RSS contain updates to information published by websites. Web feeds can be viewed through web browsers or received via email as updated information is added to web content. Feeds with updated avalanche conditions would thus be readily available to any subscriber with access to email. Given the proliferation of mobile communication devices capable of receiving emails, large segments of the public would have instant access to updates on avalanche conditions.

8. To the Canadian Avalanche Roundtable

Work towards and expedite the implementation of an enhanced Public Avalanche Forecast System by decreasing the size of bulletin regions and increasing the coverage and frequency of forecasts issued by the Canadian Avalanche Centre.

Chair's comment: During the 2008-2009 avalanche season (from November 14, 2008, to April 24, 2009), the CAC issued Public Avalanche Forecasts on Mondays, Wednesdays and Fridays, for the regions of Northwest, South Coast, North Columbia, South Columbia, Kootenay-Boundary and South Rockies. Daily forecasts were issued during Christmas, New Year's and Easter holiday periods. In the North Rockies region, instead of avalanche forecasts predicting the anticipated avalanche conditions for the upcoming days, the CAC issued weekly Public Avalanche Reports, which represented a snapshot of the conditions on a given day. No forecasts or reports were generated for areas of the province not covered by the above-listed regions (other than national parks, which produced their own daily forecasts).

The three-times-per-week (or once per week for the North Rockies) frequency of the advisories issued by the CAC has to be considered in view of the highly changeable weather and snowpack conditions. Further, the CAC bulletin regions are vast in size, resulting in significant variation within the forecast areas. These factors present significant challenges for the forecasters who generate the advisories and the public who uses them for guidance. In contrast to the Canadian Public Avalanche Warning System, in many other countries with mountainous areas (such as Austria, France, Germany, Romania, Slovakia and Switzerland), avalanche forecasts are provided on a daily basis and cover regions much smaller in size. In Switzerland, in spite of increasing mountain use by recreationists, improvements in the delivery of avalanche safety programming, including the frequency of bulletins, have been identified as contributing to reduced numbers of avalanche fatalities.

The Canadian Avalanche Roundtable (CAR) is an advisory body to the CAC. Its members are official representatives of the federal and provincial governments, non-government organizations providing funding to CAC operations and other stakeholders in public avalanche safety. CAR co-ordinates and facilitates public avalanche safety initiatives across Canada.

9. To the Canadian Council of Snowmobile Organizations (CCSO)

The Panel recommends that the CCSO engage in a dialogue with the Canadian Avalanche Centre and commit to provide support for core avalanche awareness programs, which include avalanche forecasts and public warnings, development and distribution of avalanche safety educational materials and avalanche safety training.

Chair's comment: The Canadian Council of Snowmobile Organizations is the national body representing snowmobile associations and federations in Canada. Some of the Council's stated objectives are to promote the betterment of snowmobile recreational activities and to be the public relations agency regarding the advertising and promotion of safety programs. The Panel recognized that the organized segment of the snowmobiling community has the ability to assume leadership in the area of avalanche safety and showcase commitment to developing avalanche awareness within the snowmobiling community. While only a small segment of the snowmobiling public is represented on club rosters, the safety message will likely trickle down from the organized segment to the rest of the snowmobiling public. Recognizing that the CAC is currently the driving force in delivering avalanche safety programs in Canada, the Panel suggested that the CCSO partner with the CAC in promoting avalanche safety and preventing snowmobile-related fatalities. Core services at the CAC include public warning products, such as avalanche forecasts and special avalanche warnings (SPAW); educational and awareness products such as pamphlets, DVDs and website materials; and avalanche safety training through the Avalanche Skills Training courses.

The Panel learned that the backcountry skiing community collectively went through lengthy awareness-building before it could reduce its fatality numbers. The snowmobiling community appears to be at the beginning of this process. Snowmobile clubs have an opportunity to contribute to shortening of this deadly learning curve by partnering with the CAC.

10. To International Snowmobile Manufacturers Association

and

Arctic Cat Inc.,

Ski-Doo/Bombardier Recreational Products,

Polaris Industries,

Yamaha Motor Canada Ltd.

The Panel recommends that the above-named entities engage in a dialogue with the Canadian Avalanche Centre and commit to provide support for core avalanche awareness programs, which include avalanche forecasts and public warnings, development and distribution of avalanche safety educational materials and avalanche safety training.

Chair's comment: There are four major snowmobile manufacturers (Arctic Cat, Bombardier Recreational Products, Polaris Industries and Yamaha Motor Corporation). International Snowmobile Manufacturers Association (ISMA) is an organization representing the four manufacturers. ISMA's activities include promoting the snowmobiling lifestyle, collecting snowmobiling-related statistics, and co-ordinating industry committees to handle concerns such as snowmobile safety.

Snowmobiling is a popular recreational activity enjoyed by thousands of Canadians. Snowmobiling is also an important economic generator. According to figures posted by ISMA, the economic impact of snowmobiling in Canada is estimated at \$6 billion annually. In 2009, the estimated retail sales of new snowmobiles in Canada totaled 49,510 units. Although many snowmobilers enjoy their machines on flat trails away from avalanche hazards, some ride in mountainous terrain where avalanches are a reality. All four major manufacturers offer high-performance machines capable of hill climbing. The Panel wished to encourage the snowmobile manufacturers and their umbrella organization to demonstrate corporate social responsibility by taking leadership in the area of building avalanche safety awareness and promoting avalanche safety programs.

The Canadian Avalanche Centre, a not-for-profit organization, is currently the driving force in delivering avalanche safety programs in Canada. Its core services include public warning products such as avalanche forecasts and special avalanche warnings (SPAW); educational and awareness products such as pamphlets, DVDs and website materials; and avalanche safety training through the Avalanche Skills Training courses.

A partnership should develop between the snowmobile manufacturers and the CAC in order to establish a concerted effort to promote avalanche safety and prevent snowmobile-related fatalities.

11. To the Ministry of Tourism, Culture and the Arts, Ministry of Public Safety and Solicitor General, and the Canadian Avalanche Centre, along with the Ministry of Transportation and Infrastructure

Develop seasonal signage, with a message raising avalanche awareness, for highway routes leading to popular snowmobiling areas.

Chair's comment: Many snowmobilers travel to popular recreation areas from out of town or out of province. Strategically placed highway signage could be a powerful tool for delivering avalanche awareness messaging and reminding travellers to consult public avalanche advisories for conditions relevant to a given snowmobiling area.

12. To the Integrated Land Management Bureau and the Ministry of Tourism, Culture and the Arts

Co-ordinate and undertake the development of avalanche terrain classification for popular snowmobiling areas.

Chair's comment: The Avalanche Terrain Exposure Scale (ATES) is a terrain classification system developed by Parks Canada to describe the most common destinations in mountain national parks in relation to exposure to avalanches. The efficacy of the system has also been recognized outside of the national parks system. The Panel has heard that ATES is an effective tool that can help recreationists assess the level of exposure to avalanches and, with the help of the avalanche forecast, allow them to choose trips and activities that are appropriate for the current avalanche conditions. The Canadian Avalanche Centre (CAC) publishes ATES ratings on its website and promotes its use by the recreating public. Although to date a number of popular snowmobiling destinations have been classified to ATES criteria, many other popular areas remain unrated.

Integrated Land Management Bureau (ILMB) manages the use of Crown land and resources and provides British Columbians with access to Crown land authorizations. ILMB has the mandate to provide client-focused land and resource management and information services to British Columbians.

Ministry of Tourism, Culture and the Arts (MTCA), through its Recreation Sites and Trails Branch, develops, maintains and manages a network of recreation sites and trails to provide safe, quality recreation opportunities for the public.

ILMB and MTCA are uniquely positioned within the provincial government to undertake the development of avalanche terrain classification for the most popular snowmobiling areas.

13. To the Integrated Land Management Bureau/GeoBC, the Canadian Avalanche Centre and the Ministry of Tourism, Culture and the Arts

Engage in a collaborative effort to provide the public with access to Avalanche Terrain Exposure Scale (ATES) information for popular snowmobiling areas.

Chair's comment: The Panel was informed that the Avalanche Terrain Exposure Scale (ATES) is an effective tool that can help recreationists assess the level of exposure to avalanches and, with the help of the avalanche forecast, allow them to choose trips and activities that are appropriate for the current avalanche conditions. Ease of access to ATES ratings and other terrain information for areas that have been classified according to ATES criteria is critical to ensuring widespread use of this avalanche safety framework. The Canadian Avalanche Centre (CAC) publishes ATES ratings for some popular snowmobile trips on its

website. Currently, however, there is a lack of graphical interface to relevant geospatial information that, if available, would assist the end user in safe trip planning in the backcountry.

Integrated Land Management Bureau (ILMB) manages the use of Crown land and resources and provides British Columbians with access to Crown land authorizations. ILMB also has the mandate to provide client-focused land and resource management and information services to British Columbians. Land and resource information is integrated, managed and delivered to the public through GeoBC, which provides public access to this information through its website. Online applications allow display of geographic information and interaction with the data through tools such as interactive maps.

The snowmobiling public would benefit from improved access to relevant terrain information, including Avalanche Terrain Exposure Scale ratings for popular snowmobiling areas. Linking and integration of the avalanche safety planning tools, currently available through the CAC website, with the land information managed by GeoBC and enhanced to display ATES ratings, would be of further value.

It is important to note that the CAC is recognized as the one-stop resource for the public seeking avalanche safety information. This status of the CAC needs to be maintained to preclude any potential confusion on the part of the public and to ensure that avalanche-related safety information is easily accessible and widely utilized.

14. To the Ministry of Tourism, Culture and the Arts

Continue the development of avalanche signage policy and standardized formats for avalanche safety signs to be posted at popular snowmobiling areas across the province.

Chair's comment: The Panel was informed that the Recreation Sites and Trails Branch of the Ministry of Tourism, Culture and the Arts is in the process of developing a comprehensive policy addressing management of snowmobiling activities on trails established on Crown land in B.C. (outside of parks). It is anticipated that the new policy may address the issue of standardized avalanche-safety signage for popular snowmobiling areas. The Panel recognized the importance of reinforcing avalanche safety messaging at all opportunities, including strategic placement of signs in snowmobiling areas. In a number of cases examined by the Panel, the snowmobiling groups involved in avalanche incidents were not aware that they were travelling in avalanche terrain or became complacent because of their familiarity with the area. In many cases, obvious indicators pointing to high avalanche hazard were not recognized. The Panel acknowledged that avalanche awareness can be greatly enhanced through signage strategically placed in popular snowmobiling areas, and wished to encourage further efforts to develop standardized signage and establish policy regarding message content, placement and frequency.

**15. To Alberta Snowmobile Association,
Association of British Columbia Snowmobile Clubs,
British Columbia Snowmobile Federation,
BC Commercial Snowmobile Operators Association
and
Canadian Avalanche Centre**

The Panel recommends that the above-listed organizations form a joint committee, working towards establishing ongoing dialogue between the Canadian Avalanche Centre (CAC) and the organized segment of the snowmobiling community, raising avalanche awareness and cultivating a culture of avalanche safety within the snowmobiling community.

Chair's comment: The Panel heard that through the efforts of the Canadian Avalanche Association, the Canadian Avalanche Centre and various partner clubs and organizations, the backcountry ski community was able to develop a level of avalanche awareness that has since been considered contributory to reducing the overall number of fatal avalanche incidents involving backcountry skiers. At the same time, the number of incidents involving snowmobilers is on the rise.

The Panel was informed that the CAC experienced challenges in its attempts to engage the snowmobiling community in a constructive dialogue aimed at developing co-ordinated strategies to prevent avalanche incidents and securing greater involvement of snowmobile stakeholders in prevention programs.

Whereas the CAC has the required expertise and is the leader in avalanche safety programming in Canada, the organized segment of the snowmobiling community has demonstrated its ability to harness resources and deliver results in various areas of interest to snowmobilers, including general riding safety. In order to ensure universal avalanche safety awareness, the CAC and the snowmobiling clubs need to be committed to working together.

The purpose of a snowmobiling advisory committee would be to provide constructive feedback to the CAC on the effectiveness of its safety programming specific to snowmobilers and to ensure that the CAC is able to deliver an effective avalanche safety message that resonates with the snowmobiling community.

Ministry of Public Safety and Solicitor General
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Findings and Recommendations of a Death Review Panel Convened To Examine Winter 2008-2009 Avalanche Related Deaths Involving Snowmobile Operators

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December 2009

RESPONSES

Alberta Snowmobile Association (Recommendation: 15) *

Association of British Columbia Snowmobile Clubs (Recommendation: 15) page 1

Emergency Management BC, BC Coroners Service (Recommendation: 1) page 2

BC Commercial Snowmobile Operators Association (Recommendations: 9, 15) *

BC Snowmobile Federation (Recommendation: 15) *

Canadian Avalanche Centre (Recommendations: 3, 4, 5, 6, 7, 11,13, 15)..... page 3

Canadian Avalanche Roundtable (Recommendation: 8) page 7

Canadian Council of Snowmobile Organizations (Recommendations: 2, 3, 4, 9) page 9

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Integrated Land Management Bureau/GeoBC (Recommendations: 12, 13)..... page 13

Insurance Corporation of British Columbia (Recommendation: 3)..... page 15

International Snowmobile Manufacturers Association (Recommendation: 10)..... page 16

Ministry of Public Safety and Solicitor General (Recommendations: 2, 11)..... page 17

Ministry of Tourism, Cultural and the Arts (Recommendations: 11, 12, 13, 14)
and on behalf of Ministry of Transportation and Infrastructure regarding Recommendation: 11).... page 19

* Response will be added to this report when received.


ABC Snowmobile Clubs
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Promoting Safe and Responsible Snowmobiling



BACKCOUNTRY
ACCESS



"IF WE ABUSE IT-WE'LL LOSE IT"

Email: info@abcsnow.ca

January 18, 2010

Ministry of Public Safety and Solicitor General
Office of the Chief Coroner
800 - 4720 Kingsway Avenue
Burnaby, BC, V5H 4N2

Attention: Norm Liebel, Deputy Chief Coroner

Re: Death Review Panel, Snowmobile Deaths 2008-2009

Dear Sir,

On behalf of our membership and the recreational mountain snowmobile community in British Columbia, I would like to express our gratitude to the Coroner Service for convening the Death Review Panel and bringing all of the parties together. I would also like to express appreciation for the professional manner in which Mr. Tom Pawlowski chaired the Panel and his success in funneling our efforts into truly viable recommendations. I believe that the recommendations of this panel will lead to the saving of the lives of many recreational mountain snowmobilers.

We look forward to participating in our part of the implementation of the Panel's recommendations.

Sincerely,



Al Hodgson
President
The Association of British Columbia Snowmobile Clubs

It is the mission of ABC Snowmobile Clubs to share, protect and expand winter outdoor recreation areas on behalf of all members for the purposes of Snowmobiling; to endorse collaborative decision making with all levels of Government and other users of Crown Lands, and to promote the Safe, Lawful, and Responsible use of Snowmobiles on both Crown and Private Lands.



Emergency ManagementBC

January 18, 2010

Mr. Norm Leibel
Deputy Chief Coroner
British Columbia Coroners Service
Metrotower II
Suite 800 – 4720 Kingsway
Burnaby BC V5H 4N2

Dear Mr. Leibel:

Re: Recommendation directed to BCCS from the Death Review Panel established to examine Winter 2008-2009 Avalanche Related Death

Thank you for your letter of December 14, 2009 enclosing a copy of the above mentioned report. Recommendation #1 was directed to our organization by the Panel.

The Coroners Service already has in place an Avalanche Death Investigation Protocol designed to assist coroners in conducting avalanche-related inquiries. The Protocol aims to provide information and guidelines regarding the technical aspects of avalanches. While the Protocol also emphasizes the need to examine the human factors associated with the incidents, we have come to recognize that, in order to fully examine the circumstances, the investigators must have the ability to understand avalanche processes and be able to analyze the various risk assessment and mitigation measures relevant to avalanches. To that effect, all avalanche-related investigations will be conducted with the active support of a coroner specializing in avalanche investigations.

The BC Coroners Service recognizes the value of detailed accounts of the level of avalanche awareness, preparedness, risk assessment and decision-making processes to researchers and organizations that may rely on this information for the purpose of gauging the effectiveness of existing avalanche safety programs or developing new programs.

The BCCS fully supports the Panel's recommendation and will undertake to collect all relevant information whenever it is available.

Yours truly,

Jeff Dolan
Director Provincial Operations
British Columbia Coroners Service

Ministry of Public Safety and
Solicitor General

Emergency Management BC
BC Coroners Service

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Norm Leibel
Deputy Chief Coroner
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V5H 4N2

Dear Mr. Leibel,

**Re: BC Corner's Service Death Review Panel Report and Recommendations
Regarding BC Snowmobile Fatalities in 2008/09**

Thank you for your letter of December 14th 2009 regarding the BC Coroners Service Death Review Panel regarding the deaths of 19 recreational snowmobilers in avalanches last season. This letter is in response to Review Panel recommendations that are directed to the Canadian Avalanche Centre.

BCCS Recommendation #3.

To Canadian Avalanche Centre (CAC) and the Insurance Corporation of British Columbia (ICBC)

Develop avalanche awareness materials to be distributed, in partnership with the ICBC, at point of registration, for all snowmobiles purchased in British Columbia.

AND

BCCS Recommendation 4.

To Canadian Avalanche Centre and the Government of Alberta

It is recommended that the CAC partner with Service Alberta to distribute avalanche awareness materials, at point of registration of snowmobiles.

The Canadian Avalanche Centre supports these recommendations and will work with ICBC and Service Alberta to implement them.

The Canadian Avalanche Centre currently distributes a basic snowmobile avalanche safety brochure titled "*The Thrill is Gone*". This pamphlet would be appropriate for immediate distribution (subject to supply limitations).

Looking forward we propose a joint process with ICBC and Service Alberta to evaluate this product and build additional awareness materials for mountain snowmobilers.

BCCS Recommendation 5.

To the Canadian Avalanche Centre

Develop a Competency Matrix that clearly outlines qualification criteria and explains the limits of training offered through the AST programs.

The Canadian Avalanche Centre supports this recommendation. In consultation with the Avalanche Skills Training (AST) committee the CAC will:

- Review and renew the competency matrix that currently exists in the AST program
- Identify ways to increase the profile of competency information in the course
- Target implementation of the changes for the 2010-11 season

**BCCS Recommendation 6.
To the Canadian Avalanche Centre**

Explore the need to either expand the current AST course component dealing with companion rescue or develop an additional course to specifically address companion rescue skills for recreationists.

The Canadian Avalanche Centre supports this recommendation. Currently the Canadian Avalanche Association (CAA) is completing a National Search and Rescue Secretariat project that will provide a professional training module for search and rescue. Once this project is completed the CAC will request assistance from the CAA to build a recreational training module.

Creating a specific recreational avalanche rescue course will be a major task that will require careful planning, funding and allocation of resources. The CAC will endeavor to use the resources it has currently available to expedite this recommendation however additional funding may be required to fully implement this recommendation in its entirety.

**BCCS Recommendation 7.
To the Canadian Avalanche Centre**

The Panel recommends that the CAC provide web feeds, such as RSS, in order to enable the public to receive updates on avalanche conditions reported through SPAW.

The Canadian Avalanche Centre supports this recommendation. Currently regional avalanche bulletins are available by RSS. The CAC commits to implementing an RSS feed for special avalanche warning information by Fall 2010. Users will be able to subscribe to this service through highly visible links on the CAC website.

Furthermore, the CAC will explore opportunities to distribute special avalanche warnings through other new media venues including social networking websites and mobile device applications.

**BCCS Recommendation 11.
To the Ministry of Tourism, Culture and the Arts, Ministry of Public Safety and Solicitor General, and the Canadian Avalanche Centre, along with the Ministry of Transport and Infrastructure**

Develop seasonal signage, with a message raising avalanche awareness, for highway routes leading to popular snowmobiling areas.

The Canadian Avalanche Centre supports this recommendation. We are currently working in partnership with district highway managers in Alberta and British Columbia on a pilot project that has erected seasonal signs at main entry points from Alberta to British Columbia.

The CAC has a sign template, print-ready graphics and has identified sign-making contractors capable of producing quality products. We are pleased to be able offer these resources to accomplish this task and look forward to working collaboratively with the above named organizations to further realize this recommendation for the 2010-2011 winter.

BCCS Recommendation 13.

To the Integrated Land Management Bureau/GeoBC, the Canadian Avalanche Centre and the Ministry of Tourism, Culture and the Arts

Engage in a collaborative effort to provide the public with access to Avalanche Terrain Exposure Scale (ATES) information for popular snowmobiling areas.

The Canadian Avalanche Centre supports this recommendation. Currently the trip planner webpage on the avalanche.ca website lists 700 popular backcountry trips in BC and Alberta. As an ongoing, multi-year undertaking we commit to collaborate with the Integrated Land Management Bureau, GeoBC and the Ministry of Tourism Culture and the Arts. Our ultimate goal for trip planning is to provide a venue that links avalanche information to:

- Terrain rating (ATES)
- Bulletin and warning information
- Local incident reports
- Summaries of professional field observations for the area
- Summaries of professional avalanche observations for the area
- Photo analysis resources
- Information from automatic weather stations
- Peer observations
- Further map and guidebook resources

Building this capacity will take several years, however we commit to collaboration with the Integrated Land Management Bureau, GeoBC and the Ministry of Tourism Culture and the Arts to shorten its development and improve its quality. In order to expedite this recommendation additional funding may be required.

BCCS Recommendation 15.

**To the Alberta Snowmobile Association,
Association of British Columbia Snowmobile Clubs,
British Columbia Snowmobile Federation,
BC Commercial Snowmobile Operators Association
and
Canadian Avalanche Centre**

The Panel recommends that the above listed organizations form a joint committee, working towards establishing ongoing dialogue between the Canadian Avalanche Centre (CAC) and the organized segment of the snowmobiling community, raising avalanche awareness and cultivating a culture of avalanche safety within the snowmobiling community.

The Canadian Avalanche Centre supports this recommendation. The CAC Board of Directors formally established a standing Snowmobile Committee in December 2009, inviting participation from the Alberta Snowmobile Association, the Association of British Columbia Snowmobile Clubs, the British Columbia Commercial Snowmobile Operators Association and British Columbia Snowmobile Federation.

On behalf of the Board of Directors of the CAC, our members, stakeholders and users of our public avalanche safety services I would like to thank the BC Coroners Service for the work of the Death Review Panel and its findings. The unprecedented number of avalanche fatalities in the snowmobiler user group last year is part of a longer term trend with this user group that has the Centre and its stakeholders very concerned. We feel that the findings of the Death Review Panel contained in this report will help further enhance public avalanche safety programs and services in support of improved avalanche safety in the snowmobiling sector.

The CAC has worked hard since its inception in 2004 to develop current programs and services in support of our federal and provincial mandates as Canada's national public avalanche safety organization. The CAC takes on this role at the request of federal and provincial governments as a not-for-profit corporation. We are challenged to deliver our current programs at existing levels due to uncertain funding and other economic challenges. Within our limited means the CAC is dedicated to fulfilling these recommendations. Our partnerships with stakeholders in public avalanche safety are, and will remain, strong. However to fully realize these recommendations in a timely manner additional funding and greater funding stability will be required.

Best regards,



Steve Blake
President



Ian Tomm
Executive Director

Norm Leibel
Deputy Chief Coroner
Office of the Chief Coroner
Suite 800 – 4720 Kingsway
Burnaby BC
V5H 4N2

January 22, 2010

Dear Mr. Leibel,

Re: BC Coroner's Service Death Review Panel Report and Recommendations

Thank you for your letter of December 14, 2009, regarding recommendations arising from the recent BC Coroner's Service Death Review Panel on snowmobile related avalanche fatalities. This letter is in response to Review Panel recommendation #8 which was directed to the Canadian Avalanche Roundtable (CAR) and which states:

"Work towards and expedite the implementation of an enhanced Public Avalanche Forecast system by decreasing the size of bulletin regions and increasing coverage and frequency of forecasts issued by the Canadian Avalanche Centre".

The CAR is an advisory body comprised of representatives from BC Government Ministries, Parks Canada, Government of Alberta, BC's tourism industry, snowmobiling organizations, Meteorological Service of Canada, the Canadian Avalanche Foundation and others to provide guidance and direction to the Canadian Avalanche Centre (CAC). The concept of establishing smaller bulletin regions and more frequent forecasts has been a topic of discussion since the CAC's formation in 2004.

When considering geography, climate, and backcountry use patterns the scale of avalanche problems in BC – based on order of magnitude – is significantly greater than in any other area in Canada. As a result, the CAR agrees that an enhanced and expanded public avalanche forecast system that incorporates smaller bulletin regions and more frequent forecasts would benefit BC. The CAR agrees to work towards this goal, and will ask the CAC to assess existing forecasting resources and resource gaps, as well as a prioritization of areas for future additional forecasting services.

The CAR is aware that funding remains a key determinant in how quickly implementation of an enhanced public avalanche forecasting system will occur. As such, a staged approach with additional incremental funding will be required to support a fully enhanced system. As referenced in the Death Review Panel Report, Swiss and other European forecasting agencies have annual budgets significantly larger than the CAC's for the generation of avalanche forecasts for geographic areas up to 20 times smaller than current forecast areas in British Columbia. It should be noted that the CAC is increasingly challenged to offer programs and services at existing levels due to

uncertain funding and other economic realities. The CAC's current focus is to maintain current levels and as support and funding dictates work with CAR members and other funders to enhance programs accordingly.

In sum, the CAR and its member organizations agree to work collaboratively in the spirit of cooperation towards an enhanced public avalanche forecast system that incorporates smaller bulletin regions and more frequent forecasts, however additional incremental funding and a staged approach will be required to meet this recommendation in its entirety.

Sincerely,



Ian Tomm
Executive Director
Canadian Avalanche Centre



Steve Bachop
Director Management Services and Programs
Provincial Emergency Program
Public Safety and Solicitor General

Canadian Avalanche Roundtable Members

Core Funding Agencies

Parks Canada
Meteorological Service of Canada
BC Government
AB Government
Canadian Avalanche Foundation

Sector Representatives

Association of Canadian Mountain Guides
Backcountry Lodges of BC
HeliCat Canada
Canada West Ski Areas Association
BC Snowmobile Federation
Association of BC Snowmobile Clubs
Alberta Snowmobile Association
Haute Gaspies Centre'd Avalanche
Alpine Club of Canada
BC Ministry of Transportation
Federation of BC Mountain Clubs

And numerous other stakeholders including law enforcement, other provincial and territorial governments and universities.

January 26, 2010
Mr. Norm Leibel
Deputy Chief coroner
Province of British Columbia

Dear Mr. Leibel:

Re: BC Coroners Service Death Panel Report and Recommendations

Thank you for the opportunity to comment on the 15 recommendations that will be put forward by the panel. The Canadian Council of Snowmobile Organizations (CCSO) will address each of the relevant sections and offer both guidance and feedback for your consideration. It is also understood that the CCSO feedback will form part of the official report.

Report Recommendation #2 - To partner with the Canadian Avalanche Centre (CAC) to develop and deliver avalanche awareness programming for snowmobilers, similar to the Snowmobile Outreach Program funded by the Government of Alberta and delivered in that province under the auspices of the CAC.

CCSO feedback on Recommendation #2 - The CCSO fully supports the funding concept by the BC government to deliver a snowmobile awareness program for snowmobilers and agree that with the growing interest of the sport of snowmobiling in BC that dedicated dollars towards this initiative will save lives by raising awareness of the dangers of avalanches. The CCSO would like to suggest the training and initiatives for snowmobilers may be better delivered in partnership with the provincial snowmobile organizations namely the Alberta Snowmobile Association (ASA) and the British Columbia Snowmobile Federation (BCSF). Snowmobile safety training raises awareness of all of the many facets of the safe handling of a snowmobile of which avalanche awareness is only one. If the government agrees with funding for training the CCSO highly recommends that a partnership needs to be developed through the BCSF for snowmobile training. An annual training program is in place in partnership with the provincial government that can easily be investigated in the province of Ontario. The Ontario Federation of Snowmobile Clubs (OFSC) on behalf of the Ministry of Transportation of Ontario (MTO) annually train and license over 5000 children and adults, some years as many as 7200! This operator licensing agreement has been in place since its inception in 1976 and has been deemed very successful with well over 205,000 individuals receiving a snowmobile operator's license that is recognized by the province of Ontario. When training is properly funded and fully developed by the snowmobilers the delivery agent can be negotiated to ensure that all are in agreement - avalanche training is but one piece of safety training for the safe operation of a snowmobile.

Report Recommendation #3 - To the CAC and the Insurance Corporation of British Columbia (ICBC) - Develop avalanche awareness materials to be distributed, in partnership with the ICBC, at point of registration of all snowmobiles purchased in British Columbia.

CCSO feedback on Recommendation #3 - The CCSO fully support getting additional educational material into the hands of new snowmobilers and can understand the recommendation to get it to the customer at the point of registration or insurance and would like to raise some points of clarification.

This needs to be discussed under the 3 headings of:

1. Registration
2. Annual Snowmobile licensing and
3. Insurance.

1. Registration - at a recent presentation in Vancouver Place the CCSO highlighted the missed opportunities with the current legislation and regulation in BC for snowmobile registrations. My understanding of the current legislation and regulations is that every snowmobile that is purchased in BC needs to be registered to the rightful owner. Many law abiding citizens both understand and support this government initiative but a great many do not and the backcountry is full of non-registered snowmobiles both new and used. This missed revenue for the BC government would assist in the much needed revenue to fund initiatives and recommendations on snowmobiling.

2. Snowmobile license - this speaks to the annual license fee charged for the snowmobile. BC and Newfoundland are the only remaining provinces or territory that does not administer this annual fee to ensure that every snowmobile is indeed registered to the rightful owner and the proper taxes have been paid for the transaction. It is estimated that of the 130,000 snowmobiles in BC, 15 to 20 percent change ownership (are sold) annually. An accurate data base of ownership could then be used to reduce the high rate of theft in BC of Off Highway Vehicles and in this example snowmobiles. Without a high compliance rate of registration and no annual license process to ensure correct data BC is behind the rest of the country in the enforcement and retrieval of stolen snowmobiles.

3. Insurance - In BC it is not mandatory to insure a snowmobile unless you legally cross a road. ICBC is but one way to deliver this message to snowmobilers as the many brokers across BC need to also distribute material to raise awareness to the owners of snowmobile. Insurance needs to be legislated as mandatory for all snowmobiles in BC to assist with this recommendation as a tool to annually distribute safety material to snowmobile owners and the delivery method needs to be expanded to include all brokers as well as ICBC.

Report Recommendation #4 - It is recommended that the CAC partner with Service Alberta to distribute avalanche materials, at the point of registration of snowmobiles.

CCSO feedback on Recommendation #4 - The CCSO fully support getting information out to the owners of snowmobiles at the point of registration and encourage Service Alberta to partner with the Alberta Snowmobile Association (ASA) and to distribute all of the safety material that has been developed to raise awareness of operator safety of which one piece will be avalanche awareness along with the many other safety features required for the safe operation of a snowmobile.

Report Recommendation #9 - To the CCSO - The Panel recommends that the CCSO engage in a dialogue with the Canadian Avalanche Centre (CAC) and commit to provide support for core avalanche programs, which include avalanche forecasts and public warnings, development and distribution of avalanche safety educational materials and avalanche training.

CCSO feedback on Recommendation # 9 - The CCSO is very willing to bring the people resources and to be a full partner for the dialogue and the creation of avalanche awareness materials and delivery methods to snowmobilers. Annual input at a round table discussion must include the government of BC, the provincial organized snowmobile organizations, the snowmobile manufacturers and the national organizations (i.e.: CCSO & CAC). This national table discussion will develop the best materials and processes to educate the maximum number of snowmobilers and to raise awareness to the dangers of back country riding and other hazards of recreating in the great outdoors. The CCSO operates on limited resources and has no means to fund provincial organizations like the CAC but is more than willing to bring all of the people resources available to develop and create national awareness information and training programs and processes on the safe operation of a snowmobile of which avalanche awareness is only one part of the process. The CCSO through its member organizations, the British Columbia Snowmobile Federation (BCSF) and the Alberta Snowmobile Association (ASA) look to the provincial government for a funding mechanism to be shared with the snowmobile educators for proper training and education of all snowmobiler operators and future operators (delivered through the schools and directed at children of 12 plus years old). If the snowmobilers are full partners in the development and creation of the material then the end product will be the best that it can be.

In closing I would like to thank the Ministry of Public Safety and Solicitor General and the Office of the Chief Coroner for BC for the opportunity to forward this feedback and the national views for organized snowmobiling. The CCSO and its member organizations strive to operate with the highest regards for safety and education for all snowmobilers and with this mandate offer these proactive thoughts and rational towards the safe handling of a snowmobile. Snowmobiling is an inherently risky off-road activity that occurs in an unpredictable natural environment with changing conditions such as temperature, snow, quality, type of terrain and usage. Caution must be exercised at all times and the rider must be prepared for the unexpected. The great outdoors is providing the outdoors enthusiast with an off road experience that has inherent risks, because it occurs in an unpredictable and uncontrollable natural setting, which demands constant rider preparedness, vigilance, caution and unimpaired reaction.

Thank you

Dennis Burns

Executive Director

Canadian Council of Snowmobile Organizations

Telephone (807) 345-5299

Email ccso.ccom@tbaytel.net

Web site <http://www.ccsso-ccom.ca/>

There's no business like SNOW business

January 20, 2010

RECEIVED

JAN 26 2010

MINISTRY OF SOLICITOR GENERAL
OFFICE OF THE CHIEF CORONER

Mr. Norm Leibel
Deputy Chief Coroner
Province of British Columbia
Metrotower II
Suite 800, 4720 Kingsway
Burnaby, BC V5H 4N2

Dear Mr. Leibel:

Thank you for providing a copy of the B.C. Coroner's Review Panel report into the high number of deaths resulting from back country snowmobile use. As the Assistant Deputy Minister of Registries, the Minister has asked me to respond on her behalf.

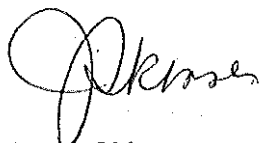
I can advise that the department would be pleased to lend assistance where it can in pursuit of fulfilling the recommendations arising from your review.

I agree that it would be appropriate for registrants of snowmobiles to receive avalanche awareness materials from the Canadian Avalanche Centre (CAC) at the point of vehicle registration. In Alberta, there are 227 such issuing offices; however distribution of inventory is centrally controlled. Dissemination at the point of registration would be readily achievable once the information is received from CAC.

Mr. Roger Grove, Assistant Director, Agent Support, will make arrangements for warehousing of the material(s). There are approximately 31,000 snowmobiles registered annually in Alberta. Mr. Grove can be reached by dialling 310-0000 and then 780-441-2027 or by email at roger.grove@gov.ab.ca.

Your shared concern for the wellbeing of Albertans is greatly appreciated. Thank you for the opportunity to play a role in enhancing safety for the users of Alberta based vehicles.

Sincerely,



Janet Skinner
Assistant Deputy Minister

Alberta ■



File: 280-30
Ref: 167525

January 20, 2010

Norm Liebel, Deputy Chief Coroner
Ministry of Public Safety and Solicitor General
Metrotower II
800-4720 Kingsway
Burnaby BC V5H 4N2

Dear Mr. Liebel:

Thank you for the opportunity to respond to the recommendations developed by the Death Review Panel that examined the facts and circumstances surrounding the deaths of 19 recreational snowmobilers who were buried in avalanches.

The tragic outcomes of these incidents is concerning, and the Integrated Land Management Bureau (ILMB) is prepared to participate in a collaborative effort to improve safety for snowmobilers and other backcountry recreationalists. The Panel Report made two recommendations (item numbers 12 and 13) that requested ILMB's participation.

Recommendation #12 – Coordinate and undertake the development of avalanche terrain classification for popular snowmobiling areas.

ILMB is prepared to work with the Ministry of Tourism, Culture and the Arts (MTCA) and other provincial agencies to identify popular snowmobiling areas and to coordinate the classification of avalanche terrain within those areas. The classifications would be prepared to a standard that meets the criteria required for inclusion into the Avalanche Terrain Exposure Scale (ATES). Once compiled, the data would be made available to the Canadian Avalanche Centre for inclusion in its forecasting and ratings communications, which are available to all snowmobilers.

Recommendation #13 – Engage in a collaborative effort to provide the public with access to Avalanche Exposure Scale information for popular snowmobiling areas.

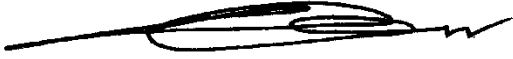
ILMB is also prepared to work with MTCA to explore options that will allow public access to online mapping that depicts popular snowmobiling areas that have been classified using ATES. This effort will include collaboration with the Canadian Avalanche Centre.

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Page 2

The collection of data and the preparation of effective information will be a complex task and will be undertaken in a phased approach. ILMB will work with other agencies to develop a creative work plan to accomplish these tasks that makes best use of available resources.

Sincerely,

A handwritten signature in black ink, appearing to read 'Steve Carr', with a long horizontal line extending to the left.

Steve Carr
President and CEO

pc Honourable Kevin Krueger, Minister of Tourism, Culture and the Arts



building trust. driving confidence.

RECEIVED

JAN 08 2010

MINISTRY OF SOLICITOR GENERAL
OFFICE OF THE CHIEF CORONER

January 7, 2010

Mr. Norm Leibel
Office of the Chief Coroner
Metrotower II
Suite 800 - 4720 Kingsway
Burnaby BC V5H 4N2

Dear Mr. Leibel:

Thank you for your December 14, 2009 letter addressed to Mr. Jon Schubert, President and CEO of the Insurance Corporation of British Columbia (ICBC), regarding the British Columbia Coroners Service Death Review Panel report and recommendations for avalanche related deaths involving snowmobile operators. Your letter and the report have been referred to me for response and I appreciate receiving the report and recommendation.

In a November 2009 news release, government recently introduced a new off-road vehicle management framework in British Columbia. ICBC has been given the responsibility for registration of these types of vehicles. The new rules that apply to off-road vehicles are expected to be implemented over the next two years.

Death Review Panel

Recommendation # 3: Develop avalanche awareness materials to be distributed, in partnership with the ICBC, at point of registration of all snowmobiles purchased in British Columbia.

As part of the development of the off-road vehicle framework, ICBC will consider this recommendation.

Thank you again for bringing your recommendation to our attention.

Yours truly,

Mark Francis
Manager, Provincial Vehicle Registration and Licensing

pc: Mr. Jon Schubert

P178373

January 21, 2010

Norm Libel
Deputy Chief Coroner of BC
Ministry of Public Safety and Solicitor General
Metro Tower II
Suite 800 – 4720 Kingsway
Burnaby, BC V5H 4N2
Claire.mcclean@gov.bc.ca

BC Coroner's Office:

The four snowmobile manufacturers of the International Snowmobile Manufacturers Association - ISMA (Arctic Cat, BRP, Polaris, and Yamaha) agree that through ISMA they will develop a long term partnership with the CAC in order to establish a concerted effort to promote avalanche safety and avalanche safety awareness. This letter is a collective response to the Review Panel Report of December 2009. The snowmobile manufacturers agree to enter into a dialog with the Canadian Avalanche Centre enabling the expansion of avalanche awareness programs, which include avalanche forecasts, and avalanche safety training.

The support from each of the manufacturers will include dialog and participation at the annual general meeting held each year during the month of May in British Columbia. We request adequate, advanced notification of the meeting date to enable the proper representation from each manufacturer to attend the event and participate in the dialog and planning of snowmobile safety awareness training.

The manufacturers will work closely with snowmobile dealers throughout the provinces of British Columbia and Alberta in emphasizing the need and importance for avalanche safety training and avalanche awareness with their customer base.

We would also request that a representative from the British Columbia Snowmobile Federation and the Alberta Snowmobile Association be invited to participate at a high level in dialog with the CAC and participate in the Annual General Meeting as well. The BCSF and the ASA are key conduits to snowmobile enthusiasts throughout the provinces and their involvement with the CAC and the manufacturers is an important link for success.

The manufacturers agree that through ISMA the www.snowmobile.org web site will include direct links to the CAC and emphasis on avalanche awareness and avalanche safety training issues will be noted and highlighted in safety related communications to the general snowmobiling populous.

We are looking forward to being active partners with the CAC and are looking forward to strong, consistent dialog and participation in the upcoming Annual General Meeting.

Sincerely,

Ed Klim
President

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JAN 22 2010

MINISTRY OF SOLICITOR GENERAL
OFFICE OF THE CHIEF CORONER



JAN 20 2010

Mr. Norm Leibel
Deputy Chief Coroner
Office of the Chief Coroner
Ministry of Public Safety and Solicitor General
Metrotower II
800 – 4720 Kingsway
Burnaby BC V5H 4N2

Dear Mr. Leibel,

I am responding to your December 14, 2009, letter regarding recommendations arising from the recent BC Coroner's Service Death Review Panel on snowmobile operator avalanche fatalities. In particular, the Review Panel's report and recommendation numbers 2 and 11 which are directed at the Ministry of Public Safety and Solicitor General:

Recommendation #2

"Partner with the Canadian Avalanche Centre (CAC) to develop and deliver avalanche awareness programming for snowmobilers, similar to the Snowmobile Outreach Program funded by the government of Alberta and delivered in that Province under the auspices of the CAC".

Recommendation #11

"Develop seasonal signage, with message raising avalanche awareness, for highway routes leading to popular snowmobiling areas".

All 26 avalanche related fatalities that occurred in British Columbia last year - 19 of which involved snowmobile users – were preventable. I strongly support both recommendations made to my Ministry in an effort to reduce the likelihood of similar tragedies occurring again in the future.

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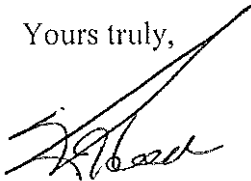
Mr. Norm Leibel
Page 2

I will ask senior Ministry staff to work directly with key organizations and partners identified in the Death Review Panel recommendations to ensure that strategies are implemented in an effective, timely and coordinated manner. As well, as one of the primary supporters of the Canadian Avalanche Centre, the Ministry of Public Safety and Solicitor General will engage CAC technical experts and specialists from the outset to ensure both recommendations are addressed in a collaborative and constructive manner.

The promotion of greater awareness of avalanche risks within the British Columbia snowmobile community, encouraging the use of avalanche safety products and equipment, and facilitating avalanche skills training through avalanche awareness seminars is very achievable. Amplified focus on these areas, in addition to targeted awareness programming, will help elevate the understanding of avalanche dangers and hopefully, over time, foster a greater culture of avalanche safety among all of British Columbia's winter backcountry users.

Thank you for your efforts to convene the BC Coroner's Death Review Panel on this topic and for the Panel's subsequent report and recommendations – this work will serve to benefit all British Columbians who value and wish to safely recreate in British Columbia's great outdoors.

Yours truly,

A handwritten signature in black ink, appearing to read "Kash Heed", written over a diagonal line that extends from the "Yours truly," text.

Kash Heed
Solicitor General



RECEIVED

JAN 25 2010

MINISTRY OF SOLICITOR GENERAL
OFFICE OF THE CHIEF CORONER

Ref: 29160

JAN 21 2010

Mr. Norm Leibel
Deputy Chief Coroner
Office of the Chief Coroner
Ministry of Public Safety and Solicitor General
Metrotower II
800 - 4720 Kingsway
Burnaby, BC V5H 4N2

Dear Mr. Leibel:

Thank you for your letter of December 14, 2009, regarding the BC Coroners Service Death Review Panel's report and recommendations to help to prevent future avalanche-related fatalities of recreational snowmobile operators on Crown land.

The Ministry of Tourism, Culture and the Arts (MTCA) supports the recommendations of the review panel, and will work in close collaboration with our partner ministries and stakeholders to determine the best approach from here. Below is our interim response to the recommendations directed to MTCA.

Recommendation #11: Develop seasonal signage, with a message raising avalanche awareness, for highway routes leading to popular snowmobiling areas.

MTCA, in collaboration with the Ministry of Transportation and Infrastructure (MTI), the Ministry of Public Safety and Solicitor General (PSSG), and the Canadian Avalanche Centre (CAC), will explore improved signage that includes appropriate information to raise public awareness of the avalanche risks in areas of Crown land popular to snowmobile enthusiasts. Many improved signs have already been posted for the 2009-10 winter season at established recreation trails.

.../2

Mr. Norm Leibel
Page 2

Recommendation #12: Coordinate and undertake the development of avalanche terrain classification for popular snowmobiling areas.

MTCA will work with the Integrated Land Management Bureau (ILMB), PSSG and other ministries, to identify popular snowmobiling areas and coordinate the classification of avalanche terrain. Our goal is to apply the Avalanche Terrain Exposure Scale (ATES) terrain classification system at all established and managed recreation trails.

Recommendation #13: Engage in a collaborative effort to provide the public with access to ATES information for popular snowmobiling areas.

In collaboration with ILMB and the CAC, MTCA will explore the possibility of linking geospatial data with ATES terrain information for established trails, thereby assisting snowmobile enthusiasts in safe trip planning.

Recommendation #14: Continue the development of an avalanche signage policy and standardized formats for avalanche safety signs to be posted at popular snowmobiling areas across British Columbia.

In collaboration with the CAC, MTCA has developed standardized avalanche safety signs for established recreation sites and trails used for snowmobiling. MTCA will continue to work with other ministries to ensure clarity of the information posted.

It is important to recognize that recreation enthusiasts take some measure of personal risk when they venture into remote and unmanaged areas of Crown land. Along with the improved safety measures described above, we will continue to encourage all recreational snowmobile operators to be well prepared before going into the backcountry.

MTCA is committed to improving snowmobile safety for our citizens and visitors to our province. Thank you for providing MTCA with an opportunity to comment.

Sincerely,



Kevin Krueger
Minister

.../3

Mr. Norm Leibel
Page 3

pc: Honourable Pat Bell
Minister of Forests and Range

Honourable Shirley Bond
Minister of Transportation and Infrastructure

Honourable Kash Heed
Minister of Public Safety and Solicitor General

Mr. Steve Carr
President and CEO
Integrated Land Management Bureau