the avalanche journal

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SUMMER 2017

COVER DAVID HANSON // **CONTENTS** TROY GRANT

in this **issue**

Contributors

VAL VISOTZKY
Val Visotzky has been a professional member of the CAA since 1998 and is currently the avalanche district supervisor for the Ministry of Transportation in Revelstoke. After several years of ski patrolling at Sunshine Village, Norquay, New Zealand and France in the nineties, Val started working with the BC Ministry of Transportation in Stewart, BC in 1999. Val took on the responsibility of supervisor in Revelstoke in 2013. Val has many years of hands-on experience with many methods of avalanche control, including heli-bombing, bomb trams, Daisy Bell, avalanche guard, Wyssen towers and artillery.

STÉPHANIE LEMIEUX
Stéphanie a commencé à travailler dans l'industrie des avalanches en 2005. Elle a travaillé dans les Chic-Chocs, au Chili et en Colombie-Britannique. En cours d'étude pour son certificat de traduction, elle aime la vie à Fernie avec sa famille, sa pêche à la mouche et son vélo en été.
Stéphanie started working in the avalanche industry in 2005. She has worked in the Chic-Chocs, Chile and BC. Currently studying for her translation certificate, she enjoys life in Fernie with her family, fly fishing and biking in the summer.

GARTH LEMKE
Garth Lemke started his avalanche career in 1991. He works as a Jasper National Park Search and Rescue Technician. In his spare time, he is an assistant ski guide and CAA instructor in a variety of disciplines. In the summers, he instructs swiftwater, rope, and jetski rescue courses for Raven Rescue. He plays in the mountains and is always on the lookout for a good rock and roll concert.

THE MOST OBVIOUS GIANT AVALANCHE PATH IS "BRENT'S RUN," OR MS-6. BARELY VISIBLE IN THE RUNOUT IS A DEFLECTION BERM CONSTRUCTED TO PROTECT THE INTAKE INFRASTRUCTURE FOR THE MONTROSE CREEK POWER PLANT // BRUCE KAY

The Naming of **Brent Mathieson Peak**

Bruce Kay

BRENT MATHIESON: OUR FRIEND, WORK MATE AND ONE OF THE PRIMARY PEOPLE to push for beginning the North Shore mountain public avalanche bulletin. A few years ago, I managed to convince the Federal Office of Geographical Names to name a relatively obscure lump deep in the BC Coast Mountains in honour of Brent Mathieson. The guidelines for naming features were narrowly defined by the individual's public contribution and not, for example, their employment or other institutional association. To some extent this conflicted with what I had in mind so I carefully left out a few details in my submission. Now that it is a fait accompli I think the membership and the broader community might appreciate the real background.

The idea germinated during a spell of avalanche safety work in Toba River country where Chris Stethem, Kevin Fogelin, Richard Berry, Johan Slamm, Mike Gadja, Darry Hemmons and I were training workers in basic awareness and rescue skills. With some surprise, we found that our lessons with these blue-collar guys (not many girls unfortunately!) were often reasonably literate discussions, not just one-way lectures. Many were remarkably well-versed in avalanche risk, often by way of their recreational sledding, skiing or similar. While some of this literacy could be attributed to training courses, it was obvious that their most basic communication tool was the public avalanche bulletin. We had all noticed a similar gain in literacy back on the ski hill, but it really registered seeing it here, deep in the pits of a large industrial project. It was then that I really started to understand the remarkable impact the now ubiquitous public bulletin has had on not just us mountain geeks, but with the public as well.

As fate would have it, Brent had skied a first descent of one of our avalanche paths during his tenure as a Tyax heli ski guide. It became known as Brent's Run, but for our purposes this path gained another name—MS 6—as a distinct and present danger to our run of river hydro project down below in Montrose creek. It is a real eye catcher: an ultra-classic 2000 metre hourglass that goes size 4 on occasion and could certainly go bigger. The summit is now known as Mt Mathieson.

What I didn't tell the naming people at the time was that in my view, this mountain was as much a recognition of the entire evolution of the public avalanche bulletin as it was of Brent's initial efforts to get it off the ground. I'm only guessing, but I suspect Brent himself would agree and certainly he would be pleased to see the present-day result of those humble beginnings.

Letters to the **Editor**

Dear Editor,

In December 2016, I submitted a researched and documented Safety Bulletin earmarked for ALL Avalauncher users. It was not printed in the CAA journal as I was led to believe. The piece appeared later in the CAA e-news with edits that I did not approve. Specifically, the CAA altered text from a hydraulic hose expert that works for Gates, one of the largest manufacturers of hydraulic hose in the world. This text formed the cornerstone of the piece. In the aftermath of these blunders, I was told in writing by WorkSafeBC that: "A supplier who manufactures equipment that could be sold in BC must ensure that all the sub components parts being used on their equipment are used in accordance with that manufacturer's recommendations."

If anyone would like to get a copy of my original Safety Bulletin they can contact me at: jb@avalanchemitigationservices.com. If they have any additional questions, I can direct them to the hydraulic hose expert quoted in the piece to get info straight from the horse's mouth.

Best wishes, John Brennan

JASON CHRYSAFIDIS ENJOYING THE AVALANCHE JOURNAL VOLUME 114 IN MEXICO // JASON CHRYSAFIDIS COLLECTION

The **New Kid**

Jill Macdonald
Managing Editor

IT'S WITH RESPECT AND HUMILITY that I join the CAA as the new Communications Specialist. Coming from Vancouver, where I worked with Arc'teryx as copywriter and editor in marketing communications, my experiences were varied and I often crossed paths with snow industry professionals. I look forward to bringing that knowledge into this role as I learn how best to serve and represent this community. There is a wealth of information held within the membership and it's inspiring to witness the reverence with which that is treated.

Bruce Kay opens this issue with a story behind the naming of Brent Mathieson Peak. As a tribute to one of the members and founder of the North Shore public avalanche bulletin, this story seems a fitting intro to the Journal. We have a report on phase one of the Three Valley Gap avalanche mitigation installation; some important updates from the Explosives Committee; and stories from Japan and Sweden that highlight the reach of our instructor group. Emily Grady and ITP personnel have been working hard evaluating course content, structure and delivery. New information is here. Be sure to read and take note.

This past season was one that had avalanche professionals on edge. Multiple storm cycles, heavy snowfall and deep persistent layers created conditions that unfortunately produced some tragic results. Presenter Lisa Larson shared methodology on a root cause incident investigation process and from Peter Marshall, a site management perspective on the Mt Harvey accident that resulted in the death of five recreationists.

A common topic at the Spring Conference amongst both presenters and informal conversations around the room was the importance of asking questions and challenging assumptions. Familiarity and precedent is frequently helpful, even essential to follow in decision making. Other times, a conflicting instinctive response suggests something is not right. Being made aware of our habits causes us to reflect. In the fall issue, before heading into another season, is a good moment to follow up on these thoughts. If you have content to contribute, do not hesitate to get in touch.

Good, bad, ugly, funny, odd or ethereal: please send in your ideas, thoughts, questions and suggestions. There are no roaming charges on email: jmacdonald@avalancheassociation.ca

Jill Macdonald

President's Message

Walter Bruns
CAA President

IT WAS GREAT TO SEE so many of you at this year's Spring Conference and AGM. After a year in the role of president, I now have a much better appreciation for the huge effort your CAA staff put in to prepare for the week, and how well it came off.

Again, warm congratulations to the members we recognized at the AGM: Brad Harrison and Scott Flavelle both received service awards. Anton Horvath nominated Brad for his commitment to the InfoEx Advisory Group (IAG) over the past decade. The IAG is more effective than ever under Brad's leadership as chair. James Blench explained how Colin Zacharias harnessed the feedback of Scott Flavelle's fellow ITP (Instructor Training Program) instructors for the nomination. In turn, Scott recounted how he got into teaching to break out of his shell. Hundreds of students later, Scott is fully out (of his shell) and so many students and fellow instructors are the better for it!

After a heartfelt nomination by fellow BC Ministry of Transportation traveller Steve Brushey, Mike Boissonneault joins our esteemed list of honorary members. Steve detailed Mike's career, from working in the 90s with Bernie Protsch to bring CIL into the community (when so many other manufacturers were leaving the avalanche patch), to more recent achievements in the Avalanche and Weather Programs branch. With the humility we so admire, Mike struggled to accept the recognition, but he did persevere over shyness to tell us one story from his days at the Grand Duc mine that brought the house down with laughter!

These members embody the spirit of contribution that has advanced the CAA over the years. We draw on their inspiration to motivate us for the work that lies ahead.

The member update session at this year's Spring Conference focused on two main challenges: competency-based training, assessment and continuing professional development; and terrain guidelines for avalanche education instructors.

The CAA competency profiles (see members-only section of our website) are the foundation for the ITP program, the assessment framework to join the CAA as an Active or Professional member and ongoing professional development. ITP Manager Emily Grady explained how we have already applied the profiles to develop the AvSAR courses. Under a new project generously funded by the National Search and Rescue Secretariat, we will overhaul the remainder of the Avalanche Operations Level 1 and 2 programs so that they too conform.

The competency profiles also shape how new members will join the CAA. Thank Doug Wilson for his diligence in developing an assessment framework for new members. As Doug and Joe outlined in their presentation, this effort required considerable background research. Now decisions need to be made periodically and quickly in order to bring a model of assessment to the membership. A group comprised of the board, Steve Conger (Education Chair) and Emily Grady, called the "Thursday Group" for the day we typically meet, reviews and approve draft work which Doug Wilson will advance from the earlier competency working group.

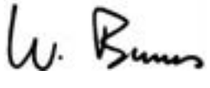
Revised CAA courses and a new entrance to membership assessment framework sound great for future members – but what are we doing for current members? We tasked the Ethics and Standards Committee to develop clear guidance for *personal scope of practice* and to support this with an updated Continuing Professional Development (CPD) program. This tool for existing members is overdue. We know that as our most advanced professionals grow in their careers, they also tend to specialize. The competency profile model works for entering the profession, but existing CAA members need more nuanced tools to define their scope as their career evolves.

We also continue to work on terrain guidelines for CAA members instructing avalanche courses. Avalanche instruction is somewhat of an outlier to the competency profile model, which is based on avalanche practitioners working under supervision and increasingly taking on more independence. Avalanche instruction often means operating very independently of readily accessible supervision or mentorship.

Seen from another perspective, the CAA brought in *Technical Aspects of Snow Avalanche Risk Management* (TASARM) as a standard in 2016, with little guidance for smaller operations. While larger operations have the capacity and expertise to implement TASARM, we need to help smaller scale operations, including instructors, to achieve this standard. Terrain guidelines will help in this regard.

All of this must respect the crucial need for accessible public avalanche instruction in Canada. The competency-based model the CAA has adopted looks at risk of harm. While the *risk of harm* to students in avalanche terrain is front and centre, we cannot lose sight of the risk which arises from unreasonable barriers reducing access to avalanche education for the thousands of Canadians who seek it annually.

Best wishes for some fun in the sun in the summer.



Walter Bruns, CAA President

CAA Executive Director's Report

BEYOND PENTICTON

Joe Obad
CAA Executive Director

THE TIMING OF THIS EDITION of the Journal offers an opportunity for reflections on the 2017 Spring Conference and AGM. Likely the best attended to date, which shows strong engagement by CAA members and our community of stakeholders, the Board and staff continue to look at ways to ensure the Spring Conference and AGM are engaging and accessible for both members coming to Penticton and those are unable to make the journey.

As numbers increase, we have lost some of the intimacy of years past as we shifted more events to the Penticton Convention Centre. With that in mind we are considering solutions, as new options in Penticton emerge. Our goal remains to create welcoming environments, encouraging formal and informal dialogue among members and stakeholders. While we sort that out, dates are already in place. The Spring Conference 2018 takes place in Penticton April 30-May 4, 2018. Mark your calendars.

We surveyed attending members on the CPD sessions and Technical and Case studies. True to form, you were not shy. Some of the feedback is challenging to interpret, but some key themes emerged. You told us that if the CPD sessions require reflection that we should give you the questions or themes for reflection in advance. As one member said, "I would have like to have thought about the topic on my 6-hour drive instead of the ten minutes in the session." Members also strongly supported being pushed out of their silos through assigned seating. This produced richer exchange in group conversation. You also told us that hearing from other high reliability professions is helpful.

Board Director Scott Garvin leads a small group of members who help us conceive of the CPDs. We'll work with Scott's gang to further analyze the feedback you've offered to make future sessions even better.

Now, if you have read this far, you might have asked "When is he going to get to the *beyond* part of the title?"

At the AGM, both Walter and I spoke to the need to bring the developments and content of the Spring Conference to the whole membership – including the those who could not attend. In that spirit, the CPD and Technical Sessions were recorded and available via the members only section of the CAA website. We originally imagined the highest value would be to members unable to join us in Penticton. We were surprised by the number of members at Penticton who wanted access to the recordings right away for reference. We look forward to hearing how you use these recorded sessions in the future.

As Walter mentions in his piece, we need to build on this momentum and make sure the competency-based projects and other initiatives like terrain guidelines are communicated and accessible beyond Penticton. Look to future editions of the Journal and CAA member news for us to make good on that promise.

It was great to see so many of you this spring. On behalf of all the staff in Revelstoke, I wish you the best this summer before your full attention turns to the snowy hills again!

Joe Obad, CAA Executive Director

Ryan Buhler
Director

New Board Member

RYAN BUHLER is a native of Revelstoke and started his avalanche career in 2007 as a ski patroller. He has since worked as a public avalanche forecaster, an industrial avalanche forecaster, a highway avalanche technician, an avalanche researcher, and a volunteer search and rescue technician.

Ryan joined the board to become more actively involved with the CAA and to learn about the governance of non-profit organizations. He has been involved in the competency project in various roles over the past few years and wants to see this project through to completion. Please welcome Ryan as the new lead of the Membership Committee.

// RYAN BUHLER

front lines

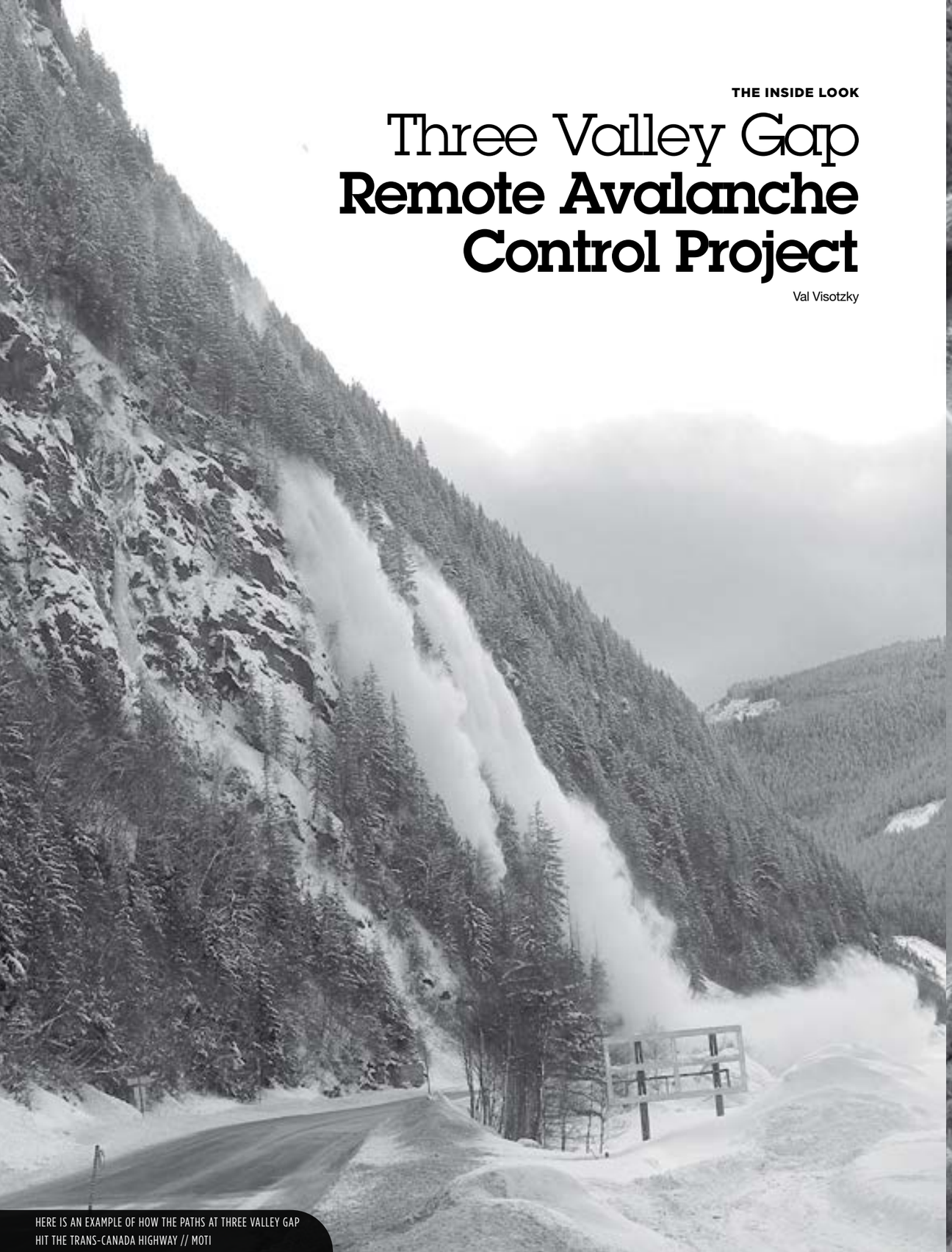
in this **section**

// DAVE SMITH

THE INSIDE LOOK

Three Valley Gap **Remote Avalanche Control Project**

Val Visotzky



HERE IS AN EXAMPLE OF HOW THE PATHS AT THREE VALLEY GAP HIT THE TRANS-CANADA HIGHWAY // MOTI

INSTALLATION OF THREE VALLEY GAP #3 TOWER // WYSSEN

IN 2010, A HIGHWAY RELIABILITY STUDY IDENTIFIED THE THREE VALLEY GAP AREA AS BEING A PRIORITY TO IMPROVE THE RELIABILITY OF THE TRANS-CANADA HIGHWAY IN BC.

Since the reliability of this critical highway in the winter is largely driven by avalanche risk, the Ministry of Transportation decided to investigate the feasibility of installing remote avalanche control (RAC) devices in the Three Valley Gap avalanche area, 20 km west of Revelstoke.

At Three Valley Gap, there are seven separate avalanche paths within a one kilometre stretch of highway, each capable of producing up to size 3 avalanches. The paths are north facing with vertical falls between 450-800 metres, with start zone elevations ranging from 900 -1300 metres.

An average of nine helicopter avalanche control missions are carried out per winter, averaging three hours of highway closure time per mission. Additional or preventative closures, due to weather or daylight issues, exacerbate wait times.

After several studies, six avalanche paths were identified for RAC devices. As well, the Ministry is constructing a diversion berm in an additional path to divert the flow of an avalanche away from the highway. Wyssen won the contract to install eight RACS. Four of the installations were completed in the fall of 2016 and four more are scheduled to be finished by the fall of 2017.

The construction part of the project started after the September long weekend to avoid high traffic volumes during summer months. This was done to minimize the impact on the travelling public and the local communities.

COLUMBIA AVALANCHE PROGRAM NUMBERS

- 2 offices: Revelstoke and Golden
- 3 staff in Revelstoke; 2 in Golden
- 3 Mountain Ranges: Selkirks, Monashees and Rockies
- Area: 250 kms north to south; 100 kms east to west+ 27km Kicking Horse Canyon
- 240+ avalanche paths
- 3 weather forecasts areas: North Columbia, West Columbia, and Rockies
- 10 remote wx stations, 8 roadside wx stations
- Elevations from 440 m to 2,600 m
- All aspects
- Approximately 8,000 vehicles/day on Trans Canada Hwy

CONSTRUCTION PHASE, FALL 2016:

- 4 of the 8 Wyssen towers were installed
- 37 on-site days
- Typical crew size: 5-7 people
- Approx. 59 hours of helicopter time
- 4 x 3 hour closures of the highway
- 30 short term closures of 20 minutes or less

EXPERIENCE AND BENEFITS:

- Good application for terrain
- Air blast
- 24-hour capability
- Easily constructed with small foot print
- Decreased closure times: 2-3 hours reduced to 1 hour
- Decreased time to do control: 30-60 minutes reduced to 5 minutes
- Pre-mission prepararion time reduced significantly. This frees up time to manage the many other avalanche areas
- Reduced exposure to hazards of heli-bombing

LIST OF PROPONENTS WORKING ON THE PROJECT:

Main contractor: **Wyssen**
Client: **Ministry of Transportation and Infrastructure**
Avalanche consulting: **Dynamic Avalanche Consulting Ltd.**
Geo tech/rock fall: **Ecora**
Safety: **Canadian Rescue Systems**
Rock fencing: **Geobrugg**

SCALERS WORKING ON CLEARING ROCK FACE PRIOR TO INSTALLATION // WYSSEN

THE COLUMBIA AVALANCHE PROGRAM CREW L TO R: MARK KARLSTROM, GREG PALTINGER, VAL VISOTZKY (MANAGER), IAN KIRSCHNER, AND NEVILLE BUGDEN. // MOTI

LOADING THE DEPLOYMENT BOX, WHICH CAN CARRY A CHARGE OF UP TO 5KG // MOTI

THREE VALLEY GAP #4 TOWER TO CONTROL PATH 19.7 // MOTI

Incident Investigation using **Incident Cause Analysis Method**

Lisa Larson

IN 2008, WE BEGAN TRACKING HIGH-POTENTIAL INCIDENTS, which are defined as incidents that have a reasonable likelihood to cause or have caused a significant but not life-altering injury to a worker. In 2013, we standardized our approach for identifying the root causes and contributing factors for such incidents through a technique called the Incident Cause Analysis Method (ICAM).

ICAM involves the identification of systemic health, safety or environmental deficiencies. It outlines an investigative process and a set of tools that consider, but also look beyond, human error and examines all of the contributing factors leading to incidents. It also enables the development of recommendations aimed at preventing incidents from reoccurring. (www.teck.com, 2014)

Incident investigation starts with good data collection. Putting a team together that includes members with technical or operational experience relevant to the nature of the event, with no potential conflict of interests with the investigation. Once assembled, the group determines which data needs to be collected. The collection of data covers five categories: People; Environment; Equipment; Procedures/ Documents; and Organization (PEEPO). This first round of data collection can result in a mountain of information; each piece needs to be analyzed to determine if it is verified as fact and it contributed to the event, for example, the incident occurred at 18:30 hours (fact); the sun was low in the sky making the track difficult to see (contributing factor).

The next step is to organize the data by creating a timeline using the relevant information from the initial evidence gathering. Descriptions are recorded with a timestamp, where available, for any observed action or inaction that may contribute to the timeline. Constructing a detailed chronology provides a clear picture for the investigation team of events leading up to, before and after the incident.

Once the timeline is in order, the team works through each event and determines if it did indeed contribute to the incident. Where events have contributed to the incident, the team performs a process called 5 Whys. Beginning with why did it contribute, the process then continues to ask why, until it arrives at one of three possibilities:

- A point of control
- A point beyond control
- A point that requires further information to answer "why?"

The 5 Why process will help identify organizational factors/root causes of an incident by encouraging the team to avoid assumptions/biases and dig deeper into the conditions that led to each contributing factor.

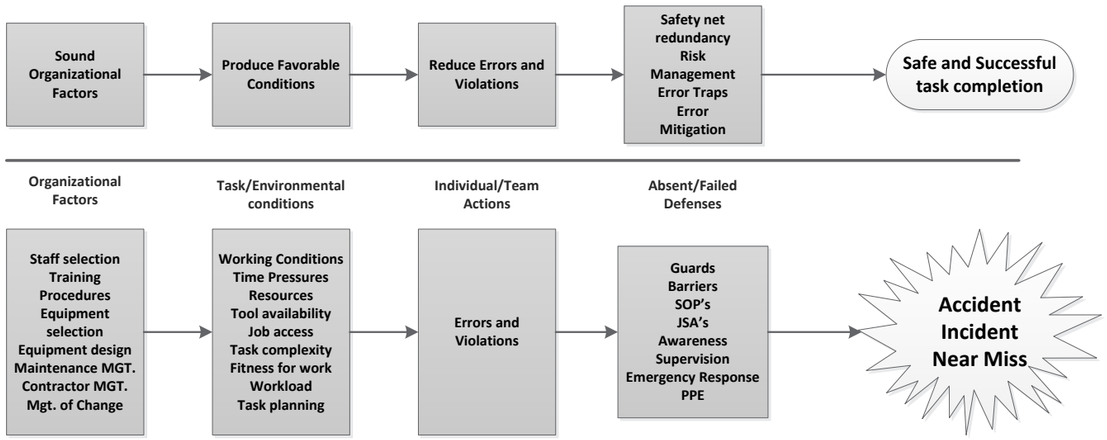


FIG. 1: ICAM RISK MANAGEMENT CHART

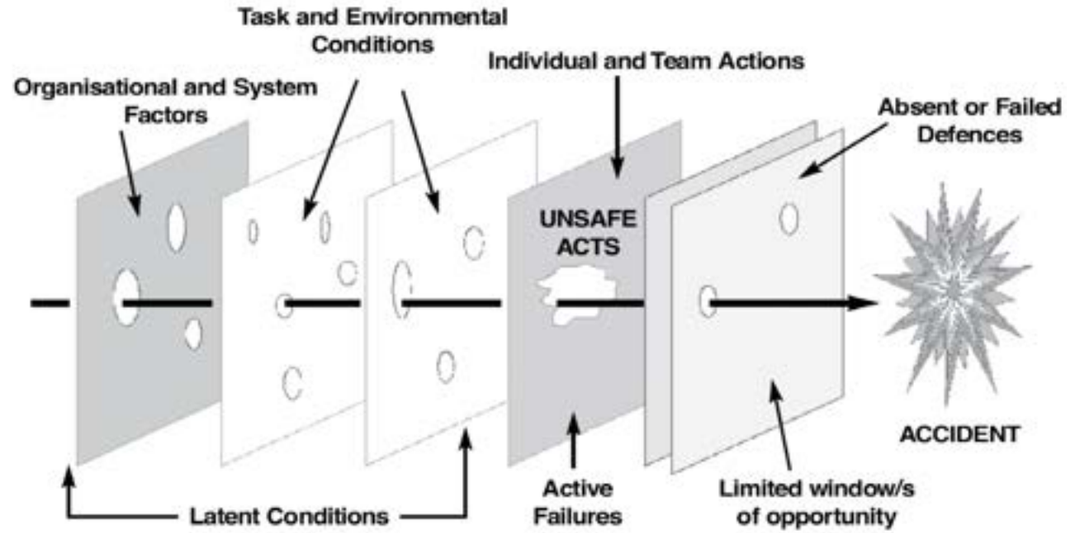


FIG. 2: SAFETY WISE SOLUTIONS INCIDENT INVESTIGATION REFERENCE GUIDE, NOVEMBER 2006

The ICAM process is then used to pinpoint underlying causes of the incident, rather than focus on potential errors of the people involved. ICAM is based on principles developed by James Reason, an expert in human factors and author of many books on the subject. James Reason also developed the Swiss cheese model as a metaphor for how incidents occur.

Each layer of cheese represents defenses in our safety systems. Ideally each layer would have no holes, but defenses are like Swiss cheese. A hole in one layer may not cause an incident, however, when holes in the defenses align briefly, it provides opportunity for an incident to occur.

Holes occur for two reasons:

- Active Failures: Errors and violations having immediate negative results, usually caused by an individual
- Latent Failures: Caused by circumstances such as scheduling problems, inadequate training, or lack of resources. Latent failures can lay dormant in the system for many years before combining with active failures to provide opportunity for an incident to occur (AviationPros, 2006)

Having organized the data to create a timeline, probed contributing events using the 5 Why process to pinpoint underlying causes, the next steps in the ICAM process are to classify factual information in order to identify:

- Absent and Failed Defenses
- Individual/Team Actions
- Task/Environmental Conditions
- Organizational Factors

Once the information is classified, the team must develop clear recommendations to address deficiencies. Recommendations will be developed for all absent or failed defenses and organizational factors identified.

By using ICAM framework to identify root causes and key contributing factors, the investigation team, employees and organization can feel confident that the recommendations are based on fact, not bias, and when acted upon will lead to continual improvement of safety systems to prevent the reoccurrence of a similar incident.

Fuse News

Explosives Committee Update

Steve Brushey
Explosives Committee Chair

ONE OF THE CLEAR TAKE-AWAY MESSAGES from the 2017 Spring AGM was the importance of sharing information within our avalanche community. Relevant to all acts and aspects of avalanche practitioner work, yet particularly with potentially high hazard activities such as explosives handling, in today's era of alternate facts it is important that our Explosive Committee share correct information.

Two blasting incidents were reported to the Explosive Committee this past season. Both are good opportunities for all explosive operations to reflect on current blasting practises.

The first reported incident involved a ski patrol conducting a standard avalanche control work routine at a US ski resort. The incident involved detonation of the handled explosive charge in close proximity to the worker and resulted in a fatality.

Although the US investigation into the incident is not complete, potential contributing factors have been identified.

- Charge preparation
- Multiple task focus
- Worker fatigue
- Working without direct assistance

The charge deployed involved use of a rope tether; this may have contributed to the charge's detonation position relative to the worker. At the scene, the worker's knife was found open, indicating it had been used as a tool for management of the work. The worker did play a supervisory role at the operation and was in this role on the day in question. A route assistant was present, however the two were deploying charges individually, in isolated areas relative to one another. Their work was part of the continued management of a storm cycle. The exact variable that contributed to the incident will likely never be known.

Handling high hazard material in a challenging environment, under stressful conditions, is a common combination for avalanche workers. An incident like the above stresses the importance of safe handling procedures and well-structured supportive routines. Human factor contributions are a notable potential; the operation did acknowledge high output from all its team members for extended periods at the time of the incident. Fatigue and how it affects decision making serves as a reminder to be thoughtful of how standard routines can both manage and affect potential worker performance, especially in high stress periods.

Post-traumatic stress was a major outcome of this incident. Immediate and lasting effects are potentially severe for family, friends, co-workers and colleagues. It is important for operations to have critical incident management plans that address both immediate and post-incident challenges, with a large enough sphere. Does your workplace have a process in place to manage post traumatic stress? An ounce of prevention is worth a pound of cure. Review approved WSBC blasting procedures often and incorporate regular training sessions. Practise makes perfect.

The second incident occurred at an operation in British Columbia. A guiding team was conducting a standard routine of explosive packaging container disposal when it was discovered that some product had gone undetected and was subsequently burned. Specifically, a package of one metre Mildet safety fuse assemblies, obscured by a cardboard partition. Fortunately, no injuries or other damages occurred. The reporting operation issued a report to WorkSafe BC and launched an internal investigation to examine contributing factors.

Key points that surfaced:

- Worker familiarity with packaging standards
- Packaging disposal procedures
- Worker supervision

Packaging familiarity for workers who may not handle explosive products on a regular basis can present product detection challenges. Direct supervision for even nominal tasks is at times important. A blaster in charge working with an assistant can offer reminders related to key handling procedures. Developing procedures that support avoidance of dangerous incidents is optimal. Recommendations included removal of partitions at appropriate times and disassembling containers prior to disposal.

This past year the CAA acted as an advocate to assist lift access ski areas in managing a regulatory change. A cooperative group was formed, including: Canada West Ski Areas Association, CAA Explosive Committee, ski hill stakeholders and a team of explosive risk consultants. Joe Obad adopted a key role in managing all stakeholders and structuring meaningful dialogue.

To review, the policy in question was the G06-03 policy. Implementation of the regulation involved inspections and orders, rather than consultation and advice, which created major challenges for many, and subsequently resulted in a potential for increased risk conditions. The group, under Joe's guidance, developed a strategy to request that the Explosives Regulatory Division (ERD) rescind, change or defer implementing this policy. It was a major task and involved numerous meetings, investigative and strategic expertise selection and numerous letters and points of dialogue with the Chief Inspector of Explosives for Canada.

Efforts to date resulted in a decision to put the G06-03 policy into a state of abeyance and maintain the 2007 guideline for the 2016/17 season. The ERD has recently confirmed that the 2007 guideline remains in effect and that any proposed change will include due notice to the CAA. Interested members can expect potential updates and developments by the end of June 2017 from the ERD. The Explosive Committee will continue to monitor any changes as the CAA continues to work with related members and the ERD to ensure the interests of the avalanche community are considered.

One result from this process is that the CAA recognized there is little understanding of how many members have explosive control programs. Understanding sector scale, awareness for outreach and potential scale of representation is important should the CAA require future advocate roles to facilitate and represent dialogue between our industry and regulatory bodies. Conclusion: we need an inventory of operations that have explosive programs. Strategy to gather this knowledge is pending.

Last but not least, we all recognize the InfoEx is an incredible platform to disseminate avalanche hazard information to InfoEx subscribers. The Explosive Committee is working with the IAG to determine if InfoEx is also an appropriate tool to share explosive news between relevant stakeholders. Hopefully we can have an answer prior to this coming winter.

Enjoy your summer. If you have suggestions, feel free to contact me at Steve.Brushey@gov.bc.ca.

The Explosive Committee met with WorkSafeBC at the Spring 2017 AGM.

It is refreshing to work so closely with one of our regulators to promote shared values and interests… which is a SAFE work place. If you missed the Member E-News, there are now changes to the WSBC Blasting Exam.

1. Proof of Character is required that demonstrates security clearance for access to explosives. Valid documents include NEXUS, PAL, or Explosives Regulatory Division clearance letter.
2. Proof of Character is required for both new examinations and re-tests.
3. Candidates writing the exam must bring their log book and a letter from their employer or their supervising Blaster in Charge that endorses and confirms the candidate's experience. Wording within the letter needs to endorse the candidate's abilities and state specifics to numbers of missions and shots managed by the candidate.
4. Anyone requiring a Cornice Endorsement must meet rope access Regulation 34 re: SPRAT, IRATA, ACMG rope certification. (The Explosive Committee recognizes the importance of separating the two certifications. The Explosive Committee is working with WSBC to better clarify this regulation.)

First time license issues will now be valid for a two-year term. This adjustment will affect future exam price structure. Re-certification will maintain the standard 5-year term.

HELICOPTER WAS ABLE TO PLACE CREWS DIRECTLY ON THE DEBRIS // PETER MARSHALL

Mount Harvey Case History: **Incident Response and Learning Outcomes**

Peter Marshall

THE INCIDENT RESPONSE

On April 8 2017, a group of six hikers set off from Lions Bay with plans to climb to the summit of Mount Harvey. This is a popular hiking route and scramble that abruptly gains 1,400m in elevation, and gives amazing views of Howe Sound and surrounding peaks. Mount Harvey summit sits at 1,652m, and its sheer northwest face makes it a prominent landmark. Spring was very slow to come to the BC south coast; the day was cool and unsettled, with thick low clouds and fresh snow falling above 900m elevation.

The hikers made good progress on their climb to the summit. Close behind them was a separate individual hiker, an experienced Lions Bay local. Just below the summit, this individual hiker came across a snowshoer; he had fallen behind the rest of his group. The hiker continued, and as he approached the summit, he was surprised not to see anyone. Tracks following the ridgeline headed downhill, to the northeast. These tracks continued for around 10m before disappearing at a drop-off. The hiker continued to search around the summit, but it became very clear what had happened: The group of five, from which the snowshoer had become separated, had plummeted off the northwest face of Mount Harvey.

Quickly, the witness descended back down the trail to try and acquire cell reception. Eventually he met another person near the bottom of the trail and used their phone to call 911.

VIEW FROM BOTTOM OF DEBRIS // BARRY MASON

Around 5pm on April 8th, Lions Bay Search and Rescue was notified of a cornice collapse on Mount Harvey involving up to 5 people. At the same time, North Shore Rescue (NSR) was dispatched to assist with air operations. At the time, members of NSR were conducting helicopter rescue training with Talon Helicopters in Pemberton. Crew members quickly jumped in the helicopter and headed south, arriving in Lions Bay at around 6pm.

NSR was first to arrive on scene. They flew a reconnaissance flight around Mount Harvey and surrounding drainages. Widespread wet loose avalanche debris was evident in all steep terrain, and a large debris deposit was seen directly below Mount Harvey. The crew confirmed there were articles of clothing and gear on the debris but the subjects were not visible. At this point NSR and Talon returned to Vancouver harbour to refuel and develop a response plan with Lions Bay SAR. All evidence suggested a very low probability of survival. It was clear that this was now a recovery mission.

The British Columbia Search and Rescue Association (BCSARA) has developed a Rescue Response Assessment and Decision Making Support tool. This tool is designed to assist SAR teams in assessing hazard and response capabilities during SAR operations. Using this tool, the initial operational risk score was assessed as being high. It was a complex response in very steep terrain. Visibility was poor and nightfall was less than two hours away. Given the weather and time of day, responders could not adequately assess the risk of additional cornice falls or avalanches above. Additionally, the initial response capability score – based on personnel experience and training, planning, and resource availability – showed high risk and a need to re-evaluate and improve response capabilities.

After some debate, SAR managers agreed to hold off on inserting any rescuers into the field that night and planned to reassess the situation early the next morning.

SAR personnel from all over the Lower Mainland began assembling in Lions Bay at 6 am the following morning. At least 10 different SAR teams were represented, with additional support from local ski areas, the RCMP, and the Coroners Service.

An initial reconnaissance flight was conducted to assess hazard and determine operational objectives. During the flight, incident command planned to insert four dog teams, a site safety officer, and site command to start the search. A helicopter was able to place crews directly on the debris. Dog teams went to work, locating four subjects in less than an hour. Six additional searchers and the coroner were then brought to scene to assist with excavation and evacuation. All subjects were buried between 50 and 100cm deep. Crews began to tire and by 12:00pm the decision was made to remove all searchers and return to staging to debrief and reassess.

> This was a very tragic and traumatic event, and a difficult SAR operation to be involved in. We would not hesitate to see a massage therapist or physiotherapist after running a marathon. The same approach should be true after we experience a taxing mental event.

Dog teams were considered the best tool in this situation given the size of the debris and nature of the terrain. New searchers were inserted in the afternoon, accompanied by two additional dog teams. RECCO was also used, and successfully found a buried jacket. The fifth subject was located by a dog late in the afternoon. This subject was located very close to the primary heli-spot.

LEARNING OUTCOMES

1. **Searching for Subjects Without Transceivers:** It cannot be overstated how effective dog teams are at searching a large debris field. This would certainly have been a multi-day response without dogs. Minimizing searchers and utilizing dogs was a good approach. However, choosing a heli-spot on the debris may have contaminated the area near the fifth subject, resulting in a delayed find. Options for nearby landing spots were very limited, but efforts should be made to keep the debris field as clear as possible. It would also have been better to locate site safety and site command off the debris to avoid any additional site contamination.
2. **Minimizing Exposure for Responders:** Despite having close to 80 SAR members available, only 12 rescuers (including dog handlers and the coroner) were initially launched to the scene. This helped minimize debris contamination for the dogs, and reduced overall exposure for SAR responders. However, around 35 responders were inserted onto the debris in the afternoon to search for the last subject. This may have been done because SAR managers were concerned with a deteriorating weather forecast the following day and felt a need to conclude the search that afternoon. Having a large pool of keen and restless responders standing by all morning may have also played a role. In this situation, keeping tight control of the response and scene was important.
3. **Critical Incident Stress Management (CIS):** This was a very tragic and traumatic event, and a difficult SAR operation to be involved in. Every first responder experienced this event differently depending on their role, past experience, and personality. We all develop strategies to cope with the memories and emotions relating to events like this. Some will dissociate from the event, while others will talk about the event at length. Regardless of how we feel, taking advantage of an organized CIS debrief is worthwhile.

There is still a negative stigma associated with mental health. Those who seek psychological care can be seen as weak or inferior. This stigma might cause some first responders to hesitate in seeking CIS management, or make them reluctant to fully engage in the process. We would not hesitate to see a massage therapist or physiotherapist after running a marathon. The same approach should be true after we experience a taxing mental event. Participating in a CIS debrief, or seeking counselling should feel completely natural. SAR managers should actively promote these programs and regularly check in with team members after an incident. Taking care of our mental health will help prevent a buildup of bottled negative emotions and will keep us healthy and ready to respond to the next incident. Make CIS management an active part of your return-to-service routine.

MOUNT HARVEY // DOUG RIED

Avalanche Incident Management (AIM) Beta Course for Incident Commanders

Garth Lemke

A NEW PILOT COURSE FOR THE CAA this year, Avalanche Incident Management (AIM) focuses on management skills and best practices for those taking the lead in an avalanche response from the incident commander level.

The course is intended for avalanche professionals who may be moving into, or already occupy, a program management position eg: manager at a mechanized ski operation; forecaster or area manager at a ski area; or SAR rescue team manager. Participants must have ICS 200 certificate, basic avalanche understanding (Avalanche Skills Training, Organized Avalanche Response, or equivalent training and experience), and be currently performing or moving towards becoming command staff.

AIM is based on a previous version of the AvSAR course (pre-2014). Although created 10 years ago, the existing manual provides the foundational material and remains relevant in its application of best practices.

AIM is a 16-hour, classroom-based course with a variety of student activities that revolve around avalanche rescue plans. During the course, specific systems, strategies, and forms are presented with an emphasis that operations should adapt what works for their needs, make adjustment for their own purposes, improve what they do, improve integration in the larger avalanche industry, and promote best practices.

Course topics include:

Legal framework

- Pre-plans
- Preparation
- Response levels
- Documentation and investigation
- Supporting operations
- Risk evaluation and reduction strategies
- Coordinating information
- Public information management
- Tracking resources
- Demobilization procedures
- Post-event actions

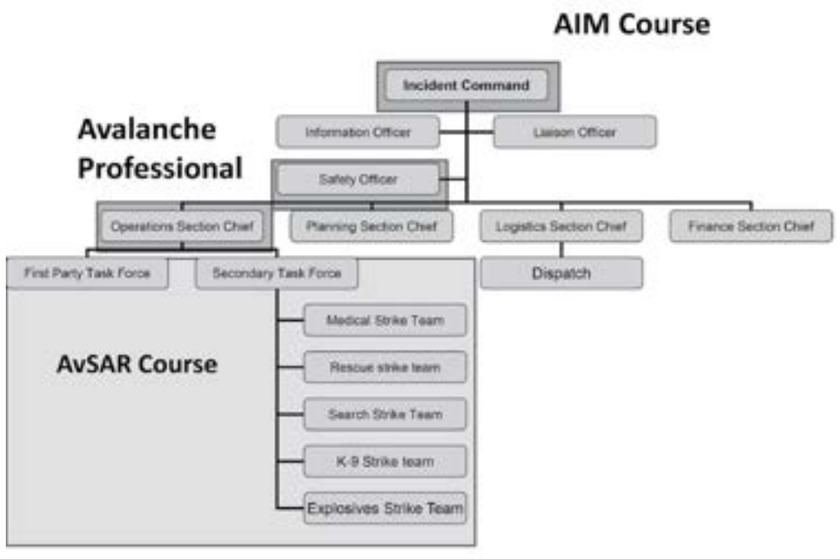


FIG. 1: DISPLAYS AN INCIDENT COMMAND SYSTEM (ICS) CHART WITH THE CAA'S AVALANCHE SEARCH AND RESCUE TRAINING PROGRESSION OVERLAID.

In March 2017, AIM instructor training occurred with Martin Buchheim, Jennifer Coulter, Kyle Hale, and Garth Lemke taking part. Following the training, a select group of students from various SAR groups took part in the pilot course. Collectively, there was 180 years of experience in the classroom and as a result, the pilot course helped to address curriculum gaps, fine-tune student activities, and formalize the assessment process.

Students were:

- Ryley Bennett (Calgary paramedic),
- Chandrima Lavoie (Nelson SAR),
- Steve Leclair (Whistler SAR + retired RCMP dog-handler)
- Keith Schultz (Hemlock ski patrol)
- Andy Lewis (Rossland SAR, Red Mountain ski patrol, + CARDA dog handler)
- Dale Mason (Robson Valley SAR manager)
- Ken Gallant (Kimberley/Cranbrook SAR),
- Andrew Duncan (Rossland SAR + Red Mountain ski patrol)

Creation of the AIM course was part of a larger standardization of avalanche rescue instruction project. This project was possible due to a Search and Rescue New Initiative Fund (SAR NIF) grant awarded in 2015. The proposed assessment process is to have students take home the AIM knowledge and apply it to their AvSAR response plan. This type of assessment is similar to that used for Avalanche Operations Level 3, but not as involved. The pilot course students felt this was a good way to apply the course concepts directly to their operation rather than an end-of-course multiple choice exam. At the time of writing, the assessment process has not been finalized.

This fall, as part of the SAR NIF grant, a second AIM pilot course will be offered in eastern Canada to increase access to higher level AvSAR training nationwide, and to continue to fine tune the curriculum for official course delivery in winter 2019/20. ◥

FIG. 2: ICS BOOKLET WITH AIM MANUAL

FIG. 3: CLASS PICTURE T: KEITH SCHULTZ, RYLEY BENNETT, DALE MASON, STEVE LECLAIR, KEN GALLANT, ANDREW DUNCAN, GARTH LEMKE. B: MARTIN BUCHHEIM, CHANDRIMA LAVOIE, KYLE HALE, ANDY LEWIS.

Japan Avalanche Network 2017 Update

Story and Photos by Garth Lemke

LEVEL 1 FIELD SITE IN HAPPO-ONE SKI RESORT SLACK COUNTRY

THE CAA HAS A 15-YEAR RELATIONSHIP WITH THE JAPAN AVALANCHE NETWORK (JAN). Over this time, JAN adopted CAA curriculum: Avalanche Operations Level 1and Level 2 courses. Each winter JAN invites CAA instructors to teach on the professional-level courses and this season the courses included a Level 1 and a pilot AvSAR course. As a result, the CAA instructor needed to be able to deliver both. For many years, I have wanted to visit Japan, so when asked I jumped at the chance to go.

There was a bit of travel from Edmonton, but on January 15th there I was in Tokyo, at dinner with JAN President and founder Azusa Degawa and Operations Manager Yukinori Saotome. Remarkable.

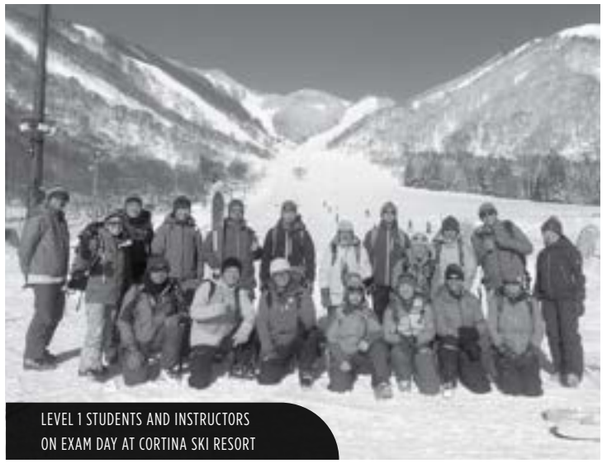
More travel ensued as the Level 1 course took place in Hakuba, January 25th to February 2nd at the Wing 21 Olympic building. A large multi-use facility built for the 1998 Nagano Olympics, the Hakuba area is a popular ski destination with eight ski resorts. Field sites were slack-country locations at Happo-One, Tsugaike, and Cortina. The 16 students were hiking guides, ski guides, a ski patroller, and mountain guides with an average age of 40 years old. On the instructor team: Makoto Kuroda, IFMGA Mountain Guide and Japan Mountain Guide Association (JMGA) ski guide; Iwao Yokoyama, Japan Mountain Association (JMA) rescue team leader, JMGA mountain guide, and ski patroller; and Chikako Hayashi, JMGA mountain guide and ski guide examiner. The course was well taught by the JAN instructors which is a credit to the depth of their experience, plus kudos to previous CAA instructors who helped with their development. I provided the instructor team with curriculum updates, access to the CAA's online instructor resources, instructor video resources, and feedback on their course delivery and instructional techniques.

AN UMBRELLA IS A STANDARD PIECE OF SAFETY EQUIPMENT

It's a four-hour drive from Hakuba to Minakami. Iwao and I made the journey together. Just before town, the vehicle filled with an eerily pleasant melody of classical music, yet there was no clear source. I noticed rumble strips that extended across the road; the patterns worked with the timing and vibration through the tires to create music. Only in Japan! We stayed at Doai Yomani House, which is over 100 years old and was originally used as a base camp for climbing the local mountains. It is a family operation, authentically Japanese. I tried to taste everything we were served, but just couldn't bring myself to eat the raw fish egg bladder for breakfast after a night of sake. I was relieved to notice that my Japanese colleagues did not eat much either.

In the fall of 2016, JAN had requested a pilot AvSAR course to be delivered in Japan for delegates from various SAR-related organizations to see how the CAA delivers this material. The pilot course was hosted at the Doai Yomani House using a nearby rice field for the outside stations. Attendees included:

- Makoto Kuroda from the JMGA: like the ACMG, the JMGA uses the Avalanche Operations Level 1 course as a prerequisite for their mountain guide program
- Yoshio Machida from the Japan Mountain Association (JMA) rescue leader of Gunma Prefecture
- Tatsunori Fukumaki is a JMA rescue team leader, JAN member, and JMGA mountain guide
- Iwao Yokoyama is a JMA rescue team member, JMGA mountain guide, ski patroller, and JAN Level 1 instructor
- Hidenori Higashi is a Japan Alpine Club (JAC) delegate, director of JAC youth club and advisor of mountain school in Nagano Prefecture. JAC is the oldest mountain club where the average age is 65 years old
- Naoyuki Kato is a JAN delegate, JMGA ski guide examiner, and Tengu snowcat guide.
- Tsutomu Inagaki is a JAN delegate, JMGA mountain guide, rescue team member, JAN instructor, and ski patroller
- Chikako Hayashi and Azusa Degawa are JAN delegates
- Sadatoshi Koike is a Risk Management ICS specialist and former Coast Guard



LEVEL 1 STUDENTS AND INSTRUCTORS ON EXAM DAY AT CORTINA SKI RESORT

Demand for Avalanche Operations Level 1 courses in Japan remains steady at 2-3 courses per season. JAN has also made some inroads with the Level 1 being adopted as a standard for some other avalanche-related organizations, yet many areas, both geographical and organizational, continue to disagree on a training standard. "It's complicated" sums up this situation. JAN has been coordinating with JMGA and JMA toward a consistent approach to their members' avalanche training standards and certifications. Both these organizations have incorporated the Level 1 course as part of their training regime.

JAN faces many future challenges. Currently, there is no nationally accepted avalanche training standard, minimal workplace avalanche regulations, and a patchwork of public avalanche information services. On November 23, 2013, on the west aspect of Masago-dake (2,861m) in the North Japan Alps (between Nagano and Toyama prefectures), 7 backcountry skiers were caught and killed in a skier triggered avalanche. JAN's offer to assist was declined and two members of the Snow and Ice Society of Japan were tasked to examine the situation. The local government responded by putting up trailhead signs to carry a transceiver, probe, shovel; and started a daily avalanche bulletin issued by an academic snow researcher from the local university. Interestingly, the local Toyama rescue police force started attending JAN courses of their own accord. One could surmise that Japan embraces science, technology, and engineering, and that practitioners are less valued or perhaps that few opportunities exist for practitioners to obtain further training and knowledge.

Several sad avalanche fatalities occurred in Japan this season. On Feb 13th four patrollers at a ski resort in Nagano Prefecture triggered a size 2.5 storm slab on a 37-degree slope, 40-60cm deep, 70m wide, 220 long, running on a crust, while ski cutting a slope. Attempting to open a run below a slope that had avalanched in the morning, three of the patrollers were caught and one died. He was buried 1.2m and found two hours later with a 50-person probe line. He did not have a transceiver as it is not considered necessary. The person who died was the spotter for the other two.

Avalanche Operations Level 1 graduates have few opportunities for mentorship, practice, or obtaining the prerequisite operational days if they are proceeding to the Avalanche Operations Level 2. As a result, there is minimal demand for Level 2 courses; they occur infrequently and only when there are enough students who meet the course prerequisites. There are a small number of cat skiing operations, some ski hills that do explosive control using fireworks, and very few ski patrollers that have Level 1 training to support standard mentorship. Over 300 people have taken the Level 1 course in the past 15 years. Amongst them are fewer than 10 ski patrollers. Overall, there seems to be little industry-driven incentive for avalanche workers to continue with the Level 2 training.

Despite these challenges and others, we may see some changes in Japan. On March 24th of this year, on the SE ridge below Chausu-dake (1,915m) just above Nasu Onsen family ski area in Tochigi Prefecture, 40 high school students and 8 custodians, all part of mountaineering clubs on an annual spring event, were on a slope when a size 2 storm slab released. The custodians had never experienced a major avalanche before nor did they carry avalanche equipment. The ski area was closed for the season but had received 30-50cm of new snow. According to Japanese media, 7 students and 1 custodian were killed while 40 others were injured. Those who died were buried 1-2m deep and were within a 10m x 20m area. JAN confirmed that 61 police officers, 80 fire fighters, 20 or more search and rescue people, and 117 self-defense forces conducted rescue efforts.

Because of this tragic incident and the ski patrollers mentioned earlier, I expect that we may see some changes in Japan in the coming years, just as we did following the 2003 accident where 7 students from Strathcona-Tweedsmuir highschool died in Glacier National Park.

We are fortunate in Canada to have government and other sources of funding for public bulletins, training services, initiatives, and the staff to support all of it. In contrast, there are no paid JAN staff other than the instructors who are supported by course revenues. Degawa and Nori, who make up the Japanese Avalanche Network, have regular jobs and work for JAN is done in their volunteer time.

LEVEL 1 STUDENTS EXAMINATION DAY AT CORTINA SKI RESORT

SNOWBLOWERS ARE THE SIZE OF SMALL CARS AND COST AS MUCH AS ONE

When not working, I enjoyed Japan. Two days before I arrived, the biggest storm since 1984 dumped 3m in 4 days. Then it snowed some more. Chest deep Japow did not disappoint.

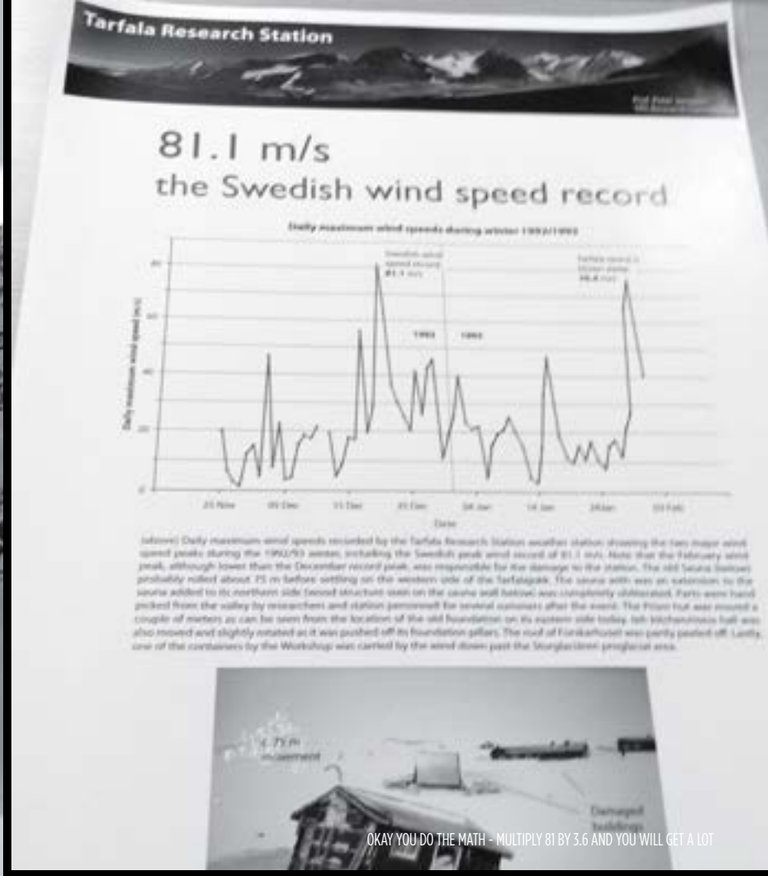
On the first day, the snowboarder in our group fell through a 4m deep creek hole. When I came onto it, she was supporting herself with her outstretched elbows dangling above the creek a few metres below. We lowered her into the hole, freed her snowboard, excavated some snow, and did a rope raise to get her out. No injuries or equipment lost. I wondered what was going to happen the next day, but it was just more fantastic skiing.

Before my return flight, I spent seven days in Tokyo. Enough time to experience subway rush hour, a rock and roll bar in Shinjuku, and the roller coasters at Fuji-Q. The trip was full of many memorable experiences making new friends, eating strange foods, and seeing new sights. I recommend the Japan experience to everyone.

Teaching in **Sweden**

Photo Essay by Scott Davis

IT'S MY BIRTHDAY AND I WILL SKI IF I WANT TO - APRIL 26-2017



OKAY YOU DO THE MATH - MULTIPLY 81 BY 3.6 AND YOU WILL GET A LOT

TIME FOR A FIELD OBSERVATION - REMEMBER THE MORE TIME YOU TAKE TO GET OBSERVATIONS THE LESS SKIING YOU WILL GET.

HUT ACCESS SWEDISH STYLE, LOADED TOBAGGAN, YES THEY DO GET STUCK IN SWEDEN TOO - NOTE THE TOBOGGAN AT BOTTOM OF HILL.

THE TEAM - OF COURSE THEY ARE SMILING - THEY ALL PASSED

YES - THOSE ARE THE WORLD FAMOUS SWEDISH MEATBALLS

IT IS SWEDEN - OF COURSE THEY HAVE AN AWESOME SAUNA

AvSAR Practical Skills Assessment and Level 2 Module 2 Update

Emily Grady

ATTENTION: INDUSTRY TRAINING PROGRAM STUDENTS TAKING
- **AVALANCHE SEARCH AND RESCUE**
- **AVALANCHE OPERATIONS LEVEL 2**

INTENT OF THE AVSAR PRACTICAL SKILLS ASSESSMENT

The practical skills assessment is offered as a separate assessment component to the AvSAR course. It is NOT a requirement for students who do not intend to pursue the Avalanche Operations Level 2 course. The assessment is offered separately so that students have a chance to practise the technical skills and strategies that they learn on the AvSAR course before being assessed on them (primarily the alternate search strategies for multiple burials in close and very close proximity, and for deep burials).

TIMING OF THE AVSAR PRACTICAL SKILLS ASSESSMENT

This season we had the practical skills assessment as part of the Level 2 Module 2, mainly to avoid students having to attend another course/assessment in another location. However, student and instructor feedback indicated that this was not conducive to a positive Module 2 learning environment. Students stated that they prepared mainly for the skills assessment rather than the Module 2.

This spring we offered an optional practical skills assessment at the end of an AvSAR course and separate from the Level 2 Module 2. We will continue to do this moving forward. However, we do NOT recommend that AvSAR students take the practical skills assessment immediately after the course unless they have an extensive background and training in alternate search strategies and transceiver technology.

CHANGES FOR NEXT SEASON

Looking ahead to next season, in order for those in the Level 2 program not to be greatly inconvenienced with the change in Module 2, we will be offering a practical skills assessment before each Module 2.

HOW IT ALL WORKS: TAKE NOTE

It has been asked what will happen if a student who is registered for the AvSAR Practical skills assessment, Level 2 Modules 2 and 3, should fail the AvSAR practical skills assessment. This person can continue to complete the Level 2 modules. However, even if they are successful in the Level 2 Module 3, they will not receive a Level 2 course certificate until they successfully complete the practical skills assessment.

Any questions or concerns relating to any of the above can be directed to Emily Grady, Industry Training Program Manager, egrady@avalancheassociation.ca 250-837-2435 ext. 224.

Please Note Course Name Change

The Avalanche Search and Rescue Response course has been renamed **"Avalanche Search and Rescue Advanced Skills".** This title better addresses the focus and intent of the course, which is to develop advanced avalanche search and rescue techniques and strategies.

avalanche community

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VISITE À AVALANCHE QUÉBEC
VISITING AVALANCHE QUEBEC

in this **section**

// HAL PORTER

LE MONT ALBERT REPRÉSENTE UN DES PRINCIPAUX MASSIFS DES MONTAGNES CHIC-CHOCS. DES TROUPEAUX DE CARIBOUS EN VOIE D'EXTINCTION Y VIVENT ET SONT PROTÉGÉS, CE QUI LIMITE L'ACCESSIBILITÉ AUX RANDONNEURS. / MOUNT ALBERT IS ONE OF THE MAIN MASSIFS IN THE CHIC-CHOCS. IT IS ALSO HOME TO THE ENDANGERED AND PROTECTED CARIBOU HERDS, WHICH LIMITS ACCESS TO THE MASSIF BY RECREATIONISTS.

Visite à Avalanche Québec

Visiting Avalanche Quebec

Article et photos par Stéphanie Lemieux/Article and photos by Stéphanie Lemieux

EN 2012, J'AI DÉMÉNAGÉ DE SAINTE-ANNE-DES-MONTS, QC À REVELSTOKE, C.-B. et passé d'Avalanche Québec (AvQ) à Avalanche Canada (AvCan). Je me sentais alors comme si j'avais été repêchée de la ligue junior majeur pour aller jouer dans la Ligue Nationale! Et il est bien vrai que je n'avais jamais fait face au défi de produire 4 bulletins d'avalanche par jour (en anglais) et à gérer une quantité faramineuse de données. En fait, je ne crois pas avoir eu autant le cerveau en compote qu'après une journée de prévision au cours de ma première année à AvCan! Avec du recul et suite à ma récente visite à AvQ cet hiver, je réalise qu'AvQ n'a rien à envier à personne (à part les montagnes à pertes de vue et la neige non-ventée) et qu'ils font eux aussi partie des joueurs d'élites dans le monde de la sécurité avalanche.

En janvier 2017, une belle opportunité s'est présentée à moi; celle d'enseigner sur le Niveau 1 Opérations d'avalanche dans les Chic-Chocs. Par la même occasion, AvQ m'a invité à présenter au séminaire des professionnels en avalanche au Québec et à passer quelques jours au sein de l'équipe terrain. Ce qui m'a le plus impressionnée durant ma visite, c'est à quel point AvQ s'est développé. Déjà au cours de mes années en tant que technicienne et prévisionniste à AvQ, j'ai pu voir à quel point la créativité, l'innovation et la capacité d'adaptation rapide de l'équipe faisait partie des valeurs intrinsèques de l'organisation. Je crois que c'est entre autres pourquoi AvQ a pu atteindre un niveau d'expertise si élevé en relativement si peu de temps.

AVQ EN CHIFFRE :

- 1999: Année de la création de AvQ, (précédemment Centre d'avalanche de la Haute-Gaspésie)
- 2: Nombre d'employés à l'époque
- 7: Le nombre d'employés durant l'année 2016-17
- 4: Le nombre de chercheurs partenaires à AvQ
- 2: Le nombre d'universités (UQAR et U de Sherbrooke)
- 300 000$: Budget nécessaire au fonctionnement régulier de l'organisation
- 70 kilomètres: La longueur de route dont AvQ est responsable en termes de gestion des risques d'avalanche.

Bref, en 15 ans l'idée d'un centre d'avalanche au Québec s'est déployée pour répondre aux besoins de l'industrie et des adeptes de plein air et ainsi se rendre « indispensable » au développement du tourisme hivernal. Une petite équipe de 7 employés occupent les rôles suivant:

- Prévisionnistes et/ou techniciens
- Produisent un bulletin d'avalanche pour les Chic-Chocs à tous les 2 jours
- Assument le rôle de sensibilisation aux avalanches auprès du public et des jeunes
- S'occupent d'un programme d'avalanche sur un tronçon de route
- Collaborent avec des chercheurs universitaires
- Offrent des formations professionnelles dont le Niveau 1 opération d'avalanche de l'Association canadienne des avalanches (ACA)
- Organisent des campagnes de levées de fonds
- Produisent la majorité de leurs publicités et de leurs produits partagés sur les réseaux sociaux

En travaillant pour AvQ, on sent qu'on a acquis une panoplie de compétences allant bien au-delà de l'aspect propre de la prévision d'avalanche.

En effet, cette belle équipe n'a rien à envier à qui que ce soit. Et je crois que ceci est en grande partie grâce au leadership exceptionnel de son directeur Dominic Boucher qui a été récipiendaire du lauréat « Service Awards » de l'Association Canadienne des Avalanches (ACA) en 2014. L'ACA n'est pas le seul à reconnaitre sa contribution à la communauté d'avalanche, plusieurs individus lui sont extrêmement reconnaissant. Comme moi, qui ne serait pas ici pour écrire cet article si ce n'était pas de son support lors de mes études dans le domaine des avalanches. Merci Dom et longue vie à AvQ!

IN 2012, I MOVED FROM SAINTE-ANNE-DES-MONTS, QC, TO REVELSTOKE, BC, and went from working at Avalanche Quebec (AvQ) to Avalanche Canada (AvCan). I felt as if I had been recruited from the junior leagues to go play in the NHL! Indeed, I had never faced the challenge of writing 4 avalanche bulletins per day (in English) and managing such an overwhelming amount of data. During my first year at AvCan, I recall my brain feeling like mush after a day of forecasting. With some retrospective and from my recent visit at AvQ this winter, I now realize that AvQ has no reason to envy others (besides the endless mountain views and the snow unaffected by wind) and that it too is an elite player in the world league of avalanche safety.

In January 2017, a great opportunity came along: to teach an Operational Level 1 in the Chic-Chocs (AvQ playground). On the same occasion, AvQ invited me to present at their annual CPD weekend and to work with their avalanche field team to offer training and feedback on their program. What impressed me the most during my visit is how much AvQ has developed. In my years working as a forecaster and Av Tech

LES ÉTUDIANTS SE PRÉPARENT À CREUSER LEUR PREMIER PROFIL DE NEIGE COMPLET EN « SOLO ». / LEVEL 1 STUDENTS GET READY TO DIG THEIR FIRST SOLO FULL SNOW PROFILE.

UNE PARTIE DE L'ÉQUIPE AVQ ET INVITÉS SPÉCIAUX: ALEX ROBERT, JEAN-RAPHAEL LEMIEUX, DOMINIC BOUCHER, STÉPHANIE LEMIEUX ET JULIE LEBLANC. / PART OF AVQ'S TEAM AND SOME SPECIAL GUESTS: ALEX ROBERT, JEAN-RAPHAEL LEMIEUX, DOMINIC BOUCHER, STÉPHANIE LEMIEUX AND JULIE LEBLANC.

LE RÉSEAU D'OBSERVATIONS MÉTÉO D'AVQ DANS LES CHIC-CHOCS COMPTE MAINTENANT 5 STATIONS, 3 MANUELLES EN VALLÉE ET 2 AUTOMATISÉES EN MONTAGNE. / AVQ'S WEATHER AND SNOW OBSERVATION PLOT NETWORK NOW INCLUDES 5 STATIONS: 3 MANUAL WEATHER STATIONS AND 2 AUTOMATED STATIONS.

for them, I had already witnessed how creativity, innovation and the team's great capacity to adapt to change were inherent values of the organization. I think this is one of the reasons why AvQ has been able to attain such a high level of expertise in such a short time.

AVQ IN NUMBERS :

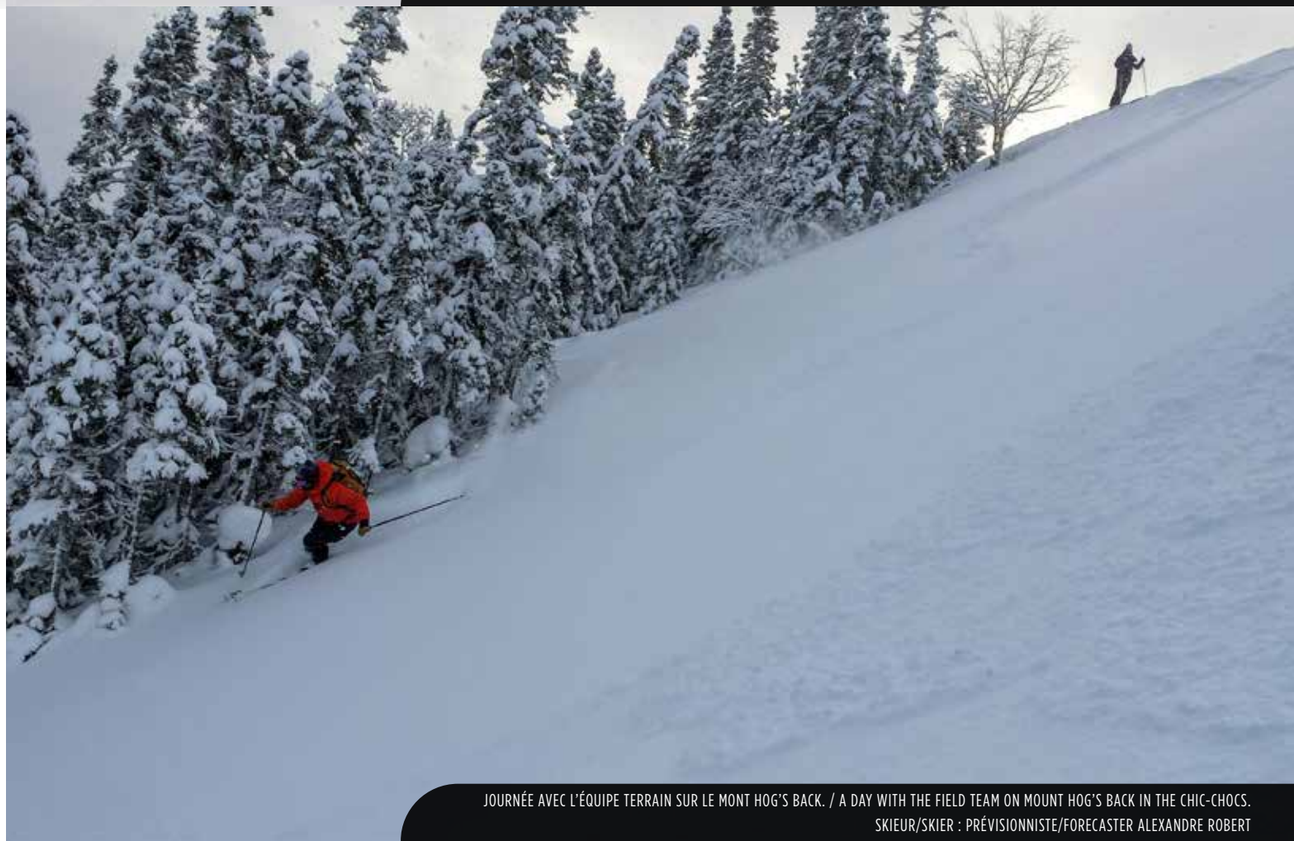
- 1999: Creation of AvQ, (previously Centre d'avalanche de la Haute-Gaspésie)
- 2: Number of employees at the start
- 7: Number of employees during the 2016-17 season
- 4: Number of graduate and post-graduate researchers in partnership with AvQ
- 2: Numbers of universities involved in the research programs (University of Quebec in Rimouski and University of Sherbrooke)
- $300,000: Budget required to run the organization
- 70 kilometres: Length of highway that AvQ is responsible for avalanche risk management

In 15 years, the idea of creating an avalanche centre in Quebec blossomed to meet the needs of industry and of recreationists and to play an "essential" role in the development of winter tourism. The relatively small team of 7 employees share the responsibility of these roles:

- Forecasters and avalanche technicians (rotating roles)
- Gather information in the data sparse area of the Chic-Chocs and produce a bilingual avalanche bulletin every second day
- Develop avalanche awareness programs for the public and youth
- Manage and run an avalanche program on a section of road in the Gaspé
- Collaborate with university researchers
- Offer professional training such as the CAA Operations Level 1
- Organize fundraising campaigns
- Produce the majority of their advertising and social media products

When you work for AvQ, you have no choice but to develop a diverse skill set that extends beyond the specifics of avalanche forecasting.

Indeed, this fine team can be proud of what they have become. And I believe that a big part of its success is due to the exceptional leadership of its director, Dominic Boucher. In 2014, Dominic was the recipient of the CAA Service Award. The CAA is not the only one to recognise Dominic's contribution to the avalanche community; many individuals are also grateful, myself included. Without his support throughout my avalanche studies and training, I would not be here to write this article. Thanks Dom and long life to AvQ!



JOURNÉE AVEC L'ÉQUIPE TERRAIN SUR LE MONT HOG'S BACK. / A DAY WITH THE FIELD TEAM ON MOUNT HOG'S BACK IN THE CHIC-CHOCS.
SKIEUR/SKIER : PRÉVISIONNISTE/FORECASTER ALEXANDRE ROBERT

Schedule of Upcoming **Events**

34TH ANNUAL SUMMER MEETING OF THE WILDERNESS MEDICAL SOCIETY
July 28-August 2, 2017
Breckenridge, Colorado
For more information:
wms.org/conferences/Breck17

HELICAT CANADA FALL MEEETING
September 27-28, 2017
Sun Peaks Resort, BC
For more information:
helicat.org

CWSAA BC YUKON FALL DIVISION MEETING
September 28-29, 2017
Sun Peaks Resort, BC
For more information:
cwsaa.org/calendar/

GEOOTTAWA 2017
October 1-4, 2017
Ottawa, ON
70 Years of Canadian Geotechnics and Geoscience.
For more information:
geoottawa2017.ca

ACMG ANNUAL GENERAL MEETING
October 12-13, 2017
Canmore, AB
For more information:
acmg@acmg.ca

ACMG CONTINUING PROFESSIONAL DEVELOPMENT SESSIONS
October 14-16, 2017
Canmore, AB
For more information:
acmg@acmg.ca

ICAR 2017 CONVENTION
October 18-21, 2017
Soldeu, Andorra
General topic: Rescue from Big Walls
For more information:
alpine-rescue.org

WILDERNESS RISK MANAGEMENT CONFERENCE
November 1-3, 2017
Portland, Maine
An outstanding educational experience to help you mitigate the risks inherent in exploring, working, teaching, and recreating in wild places..
For more information: nols.edu/en/courses/risk-services/wilderness-risk-management-conference/

WORLD EXTREME MEDICINE CONFERENCE AND EXPO
November 25-27, 2017
Edinburgh, United Kingdom
Taking medicine to the extremes.
For more information:
extrememedicineexpo.com

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Parks Canada - Banff - Bourgeau Gazex Avalanche Path Control

Images: Ian Jackson

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