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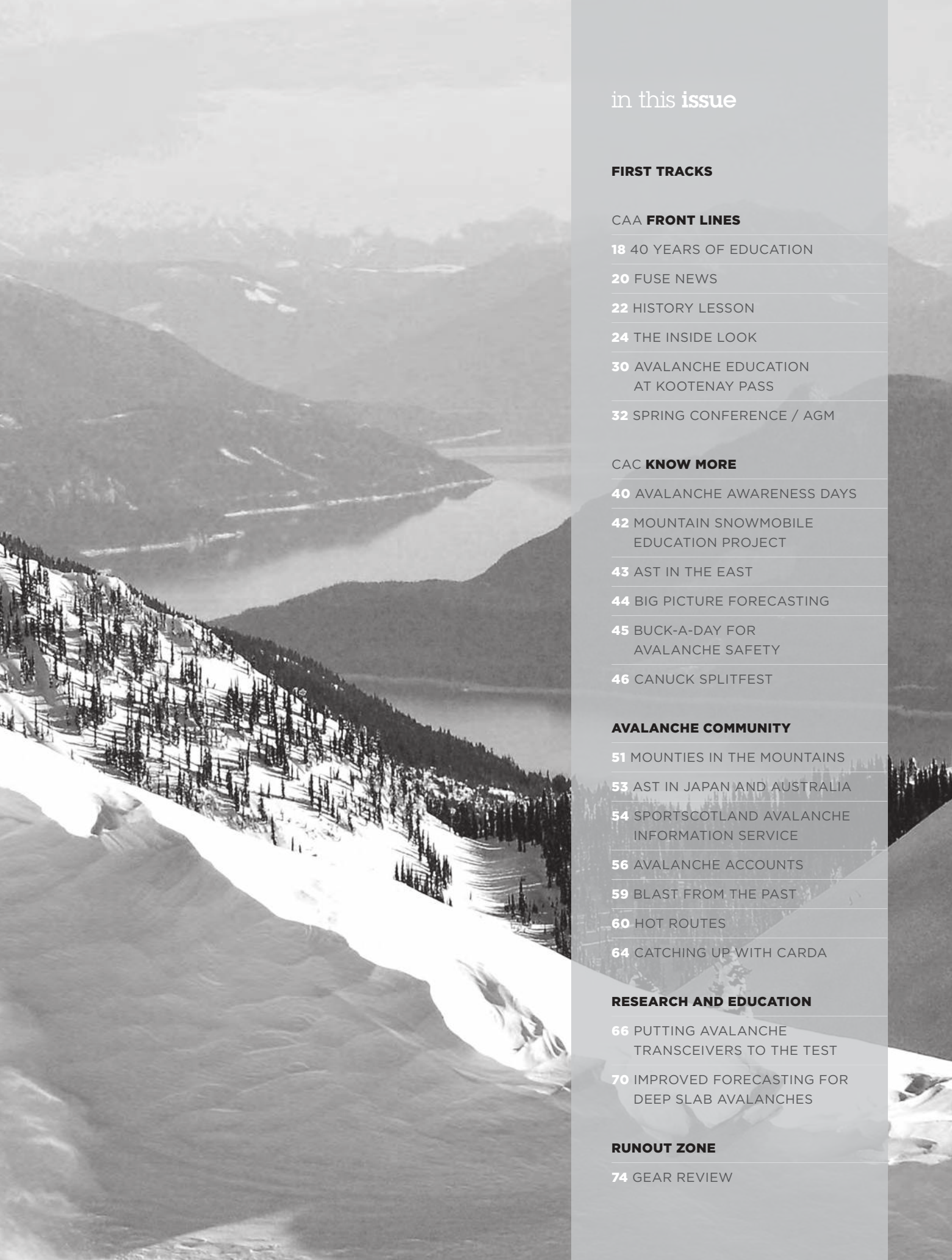

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the avalanche journal

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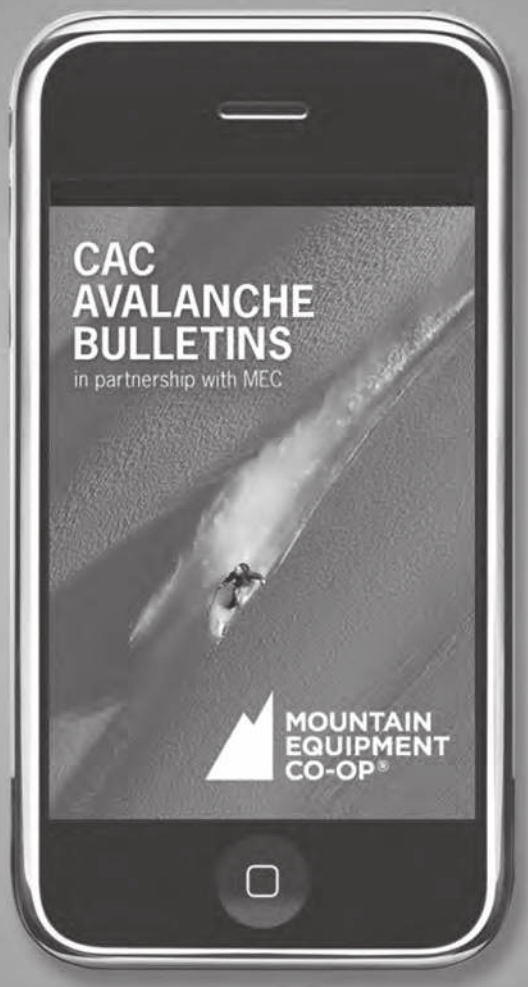
"NOW I CAN CHECK THE CONDITIONS BEFORE I SKIN UP."



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CAA ARCHIVES

Balance

LIFE IS ALL ABOUT BALANCE. MY WINTER HASN'T QUITE GONE AS PLANNED, BUT I'M MAKING IT WORK.

A FAMILY ILLNESS has kept me off of the snow and out of BC for much of the season. It has been hard for me to make the time for recreation, but it's oh-so-necessary to create that work/life/family/fun balance. When I have been back out ski touring, it has been like spending time with an old friend. Time seems to slow down as you glide uphill, and then stops altogether as you charge back down, whooping with joy. As backcountry enthusiasts we must also always strive to find our own balance between risk and reward as we venture ever further.

We are trying to strike a new balance with *The Avalanche Journal*. It has always looked inward to the professional Canadian avalanche industry as its main readership, but we hope to branch out and make it a publication that recreationists will subscribe to and enjoy as well—we would love to see it on more store shelves eventually. As such, we are trying to strike a content balance between the CAA, the CAC, and the Canadian and global avalanche community, along with interesting research and new regular sections. What would you like to see more or less of? As always, contributions are warmly welcomed: articles, research papers, product reviews, trip reports, first-hand accounts of avalanches, on-the-job anecdotes, historical tales, letters, photos and more. Email editor@avalanche.ca.

Thank you for your support through my first few issues as Managing Editor. I look forward to meeting many of you at the AGM, in the mountains, and beyond.

Cheers,

Karilyn Kempton Managing Editor

Letters to the **Editor**

Volume 99

CSGA JOINING HELICAT CANADA

This article is misleading. CSGA certification may be recognized by Helicat Canada as equivalent to ACMG certification in a mechanized ski setting, but CSGA and ACMG certifications are not equivalent to each other as implied in the second paragraph in this article and by the graphic accompanying it.

The two organizations train guides differently. The CSGA certification is for mechanized ski guiding only. ACMG certification allows the guide to work in a broader scope, consisting of mechanized skiing, ski touring and ski mountaineering.

TRU recognizes that the CSGA certification has some similar training with its CMSG programme and CSGA guides are able to apply for CMSG equivalency through their Prior Learning Assessment and Recognition process. I am aware of one CSGA Level 3 guide (previously certified as an ACMG Apprentice Alpine Guide) who, with some additional training provided by TRU, successfully achieved an Apprentice Ski Guide certification without having to attend the CMSG ski exam. Future PLAR applications will be assessed on a case-by-case basis as the two certifications are not considered equivalent by the CMSG programme or by the ACMG.

CSGA members are good guides. ACMG members are good guides. But the two certifications are not equivalent, with the exception of mechanized ski guiding jobs with the few Helicat Canada members who hire both CSGA and ACMG guides.

There are a lot of acronyms here, and the issue is not simple. This article deserved more research and clarification.

Mark Klassen; Banff, AB

CORRECTION TO CAC EXECUTIVE DIRECTOR'S REPORT ON ICAR 2011

Thank you for your report in the Volume 99, Winter 2011, on medical treatment of avalanche victims and ICAR MEDCOM recommendations. Ian Tomm cited my brief presentation at the ICAR general assembly in Åre, Sweden, of a recent study on the triage of arrested avalanche victims in Austria, quoting compliance to ICAR MEDCOM guidelines of 4% only.

This seems to me not correct, as I reported 75-80% of correct implementation of the triage guidelines when referring to short burials (up to 35 minutes) and 74-75% referring to long burials (exceeding 35 minutes). So this must have been a misinterpretation, and maybe my presentation was too short to explain the figures. I would also like to say that this data is preliminary and we have still to go into further detail, e.g. why some of the victims have not been resuscitated in spite of the presence of an air pocket (maybe they have been lethally injured). So, it is a bit too early to make a conclusion. One thing we can say right now is that many emergency physicians are well trained in emergency medicine, but are still not familiar with special alpine accidents such as avalanches. This is not a deficiency of the recommendations, but a lack of information. EMS personnel are perfectly skilled in BLS and ALS algorithms as proposed by the American Heart Association (AHA) and European Resuscitation Council (ERC) (ILCOR Resuscitation guidelines), but, at least in Europe, many EMS physicians and paramedics do not know ICAR MEDCOM recommendations. One consequence of this study will certainly be that we have a lot to do to better advertise our recommendations. One big step has already been accomplished — to incorporate ICAR MEDCOM recommendations into the AHA and ERC ALS and BLS Resuscitation Guidelines 2010. I am confident that this will raise the compliance to ICAR MEDCOM recommendations. The second step will be the simplification of the triage algorithm, as proposed in Åre, which is to be published in 2012.

Hermann Brugger; Innsbruck, Austria

NEW-ISH WARNING SYSTEM

I just wanted to drop a quick note to say how pleased I am with the new bulletins on avalanche.ca. The added data on wind loading and persistent slabs in quite important, the displays informative and easy to understand, the additional comments quite helpful for route-planning and decision-making. As an intermittent user with a growing aversion to unnecessary risks, I have to give your staff a big "thumbs up." As a researcher who deals with warnings and human factors, thanks for the effective translation of knowledge.

C.T. Scialfa; Calgary, AB

Failure Plane

We credited our last cover photo to CAA ITP archives, but it was actually taken by Jim Bay. It shows the results of early heli-bombing in the Bugaboos, 1992. **Thank you for the photo, Jim.**

Editors' Retrospective

TO CELEBRATE THE 100TH VOLUME OF *THE AVALANCHE JOURNAL*, PREVIOUS EDITORS (AND LONG-TIME PUBLICATIONS AND PROPERTIES MANAGER BRENT STRAND) TOOK A TRIP DOWN MEMORY LANE TO SHARE THEIR EXPERIENCES AND MEMORIES. WE THANK THEM FOR THEIR HARD WORK, AND WE THANK YOU FOR READING.

PETER SCHAERER

Launched in October 1979, the first CAA journal was called *Avalanche News*. It was a typewritten newsletter, copied and stapled, which appeared regularly three times per year. *Avalanche News* was created by the Avalanche Committee because professional avalanche workers in Canada wanted to be informed about new developments and maintain contact with others in the field. The Avalanche Committee was a group of four formed in 1975, and may be considered the forerunner of the Canadian Avalanche Association.

When the Avalanche Committee decided to issue *Avalanche News,* I worked for the Avalanche Research Centre of the National Research Council of Canada and agreed to be the editor. Geoff Freer, who was the Senior Avalanche Coordinator of the British Columbia Ministry of Transportation, Communication and Highways, assumed the responsibility of printing and mailing. His assistant Janice Johnson became the copy editor. The offices of the Ministry generously printed and mailed the publication free of charge to anybody who was interested in receiving it, and the Minister ordered that it be sent to all Highways staff in avalanche areas of BC.

The offices of the Ministry generously printed and mailed the publication free of charge to anybody who was interested in receiving it.

In pondering possible names for the newsletter, the Avalanche Committee resolved that it should simply be *Avalanche News,* rather than Canadian Avalanche Newsletter or Information for Canadian Avalanche Workers or anything similar. This decision was already true to the vision that was later adopted by the CAA and CAC: to be a world-wide leader of avalanche awareness, education and safety. To our knowledge, *Avalanche News* was the first regular publication on avalanche concerns. Similar publications (e.g. in the USA, France, Italy and New Zealand) appeared a few years later.

In scanning early copies of *Avalanche News,* one discovers much interesting historical information about the annual weather and snow conditions; statistics and descriptions of avalanche accidents; types, numbers and attendance of avalanche courses; the development of the mountain weather forecast; special events; and personal news. Furthermore, summaries of technical meetings reflect the activities and the growth of the CAA. Once per year, a resource list was published of agencies that are available for information about snow and avalanche conditions and assistance with rescues. With a growing interest and need for safety measures, the list grew every year and it was a pain to keep it current. No paid advertisements were carried, but notes were published when new equipment was considered to have value in avalanche work and safety: notable examples were transceivers, rescue balloons and explosives. The notes about equipment took little space in the publication, because in the 1980s, the market was not flooded with new gadgets.

Volume 8, published in January 1982, was significant: it announced the registration of the Canadian Avalanche

Association and invited qualified individuals and companies to apply for membership. Simultaneously and without formality, *Avalanche News* became the voice and communication channel for the members of the Association. At that time, the publication had reached a wide distribution to individuals and agencies in Canada, the USA and overseas. It was on desks of government offices and on library shelves such as the Vancouver Public Library and the Library of the National Research Council of Canada.

The year 1991 brought a major change when the Avalanche Centre of the National Research Council closed its doors and I retired from employment. In order to continue serving the avalanche community, the CAA President Chris Stethem formed the Avalanche Centre of the CAA in Revelstoke and hired Alan Dennis as the manager. I edited *Avalanche News* for another year and in 1992 with Volume No.38 Alan Dennis became the managing editor. A new era had begun.

ALAN DENNIS

When I was signed on by Chris Stetham and Jon R. Bezzola to work at the CAA in September 1991, I don't remember Editor of *Avalanche News* being part of the job description. That was Peter Schaerer's job, and who could follow that. He had done it forever and would continue to do so, right? Workmates and I eagerly read *Avalanche News* wherever we were, so taking on the editor role was another challenge for the new guy. Some of the first issues I worked on were collated by committee, who had diverging (sometime converging) views on what was to be included or excluded (and that led to the 'mystery' I'll mention when I was publisher).

Looking back at old issues, I am struck by both huge changes and continuity for both *Avalanche News* and the CAA/CAC. Some examples of huge change include: growth for the 1-800 number—in the first winter of the avalanche bulletin, there were 500 calls; staffing—we had a part-time staff of Inge Anhorn, Chris Whalley, Lise Normandeau and the editor; and design—it was a huge leap forward when Karl Klassen took on design layout of *Avalanche News*.

Where do I see continuity? Bruce Jamieson was and still is a frequent contributor, always reliable when we requested a piece. I see continuity in the Avalauncher issues: we do like the Falcon 2000 and bless Gary Walton for his commitment. And there has been good slow and steady progress with ICAR meetings (for example, RECCO®, transceiver frequency salad and forecast terminology salad). Considerable thanks to everyone involved.

The mystery that remains is who the artist was that came up with the resource list cover that nearly got me fired for the first time, and showed up on many avalanche office notice boards.

LYNN FREELAND

When asked to write a little something for the 100th issue, I had a rush of emotion back to a fun, exiting place that seemed like lifetime ago. It was almost twenty years ago since I walked through the door and met Alan Dennis, who offered me an avalanche incidents data entry job. That project got both Audrey Defant and I involved in the Canadian Avalanche Association.

Most people would ask why a person who does not really like snow and hates the cold would do it. For me it was a sort of rite of passage—after all, I was married to a backcountry ski guide, so why not try to understand what he deals with on a daily basis. Then there was the fact that I lived in Revelstoke; no matter how hard you try, you cannot hide from the snow.

I began working for the InfoEx department, then had the job of school coordinator added to my daily roster, then came the job of editing *Avalanche News*. That was the really fun part of working there, and I must admit that I learned so much. It was the best office

1979

1993

1996

1998

2000

2006

job situation that I have ever been involved in.

Brainstorming the *Avalanche News* main story ideas was always fun, although a few times I had my hands slapped for what some said were inappropriate cartoons or pictures. All in all, it was a fun time in my life and I cherish the memories of working at the CAA and of the dear friends I made. I am now pursuing my main passion of raising and training my horses in the sunny Okanagan. Happy 100th issue and thank you for letting me be a part of it.

TODD BEERNINK

Snow drew me to Revelstoke in 2001. Through volunteer ski patrolling that winter, I met some great guys who happened to work for the CAA. Phil Johnston, the sponsorship and self-proclaimed events "dude," and graphics guru Brent Strand both volunteered for CAT Powder and Powder Springs Resort with me and my roommate Owen Day. Owen eventually became the InfoEx scribe for the CAA. Phil, who could sell trees to a forest, talked me into volunteering to help organize Avalanche Awareness Days in Revelstoke. The following year I was asked to help guide *Avalanche News* in a new direction. I accepted, since working with friends who had a direct line to Ullr was about as good as it could get.

In 2002, Janod Contractors and Vertec Contractors signed on as presenting partners of the CAA. They wanted to help bring the *Avalanche News* to a new level. Clair Israelson and Evan Manners envisioned reaching a slightly wider readership. New potential partners in the private and public sectors were needed to help the CAA meet the growing demand for its public avalanche services. To reach them the publication needed an overhaul.

That winter we did a survey to see what "a whole new level" might look like to readers of *Avy News*. We found that most readers at the time were ski guides who wanted to see more research papers and case studies they could use in the field. We set out to publish as many of those as we could. In order to reach a broader audience, we also added new features such as survivor stories, snowmobile-specific articles, humour, and magazine-like covers with big, attention-grabbing shots.

Brent Strand unleashed his graphics genius and did an awesome overhaul on the look of the journal from cover to cover. Our first "new and improved" edition was Volume 64, Winter 2002-03. That edition featured a retrospective on the birth of *Avalanche News* by Peter Schaerer, founding father of the publication 24 years earlier. It also featured several timely contributions on the Durrand Glacier and Connaught Creek avalanches.

Seeing those articles together showed me how the demand for public avalanche safety had grown over a generation. Despite the heavy tone on some of its pages, feedback from readers was all positive. After several months of work, we were proud of the overall look, content, and the new direction of *Avalanche News*.

I edited three more editions before moving to the coast in search of fresh tracks of a different kind, but I remember my time working with the CAA team as one of my best runs.

BRENT STRAND

I grew up in Revelstoke and learned to ski tour in Rogers Pass with two friends as a naïve teen. When we went out we carried safety gear—beer and one shovel between us. The guy with the shovel went last to dig out the others! I then spent ten years in Fort McMurray working in a commercial print house, became a graphic designer and eventually moved back to Revelstoke. It just so happened that the Canadian Avalanche Association needed someone to help out with *Avalanche News*. I met with Ops Manager Evan Manners who said he could pay me $8 per hour for 10 hours to layout the newsletter and add

a bit of flair. A keen backcountry skier, I was stoked to jump on board.

I was led to a storage room with a lonely computer. No problem, I thought. I got familiar with the publication and decided to add "fancy" fonts and photos rather than clipart—I thought it looked pretty good and Evan was happy. However, he was not sure if the Ministry of Transportation, who printed *Avalanche News* for us in Victoria, would agree to print a flashy newsletter. We sent it anyway, and the next day received an email: the new design was unacceptable, and not representative of the technical and professional publication it was known to be. It was back to square one.

That was Volume 60—wow, has there been a lot of change since then. A year or so later, we started printing in-house on our laser printer. That's right: 1,000 copies of a 60-page document on 11x17" paper, hand folded and stapled by yours truly. Since we printed in-house, it was time for dramatic changes: more photos, upbeat fonts and the start of a slick, professional look. We launched a new cover with Volume 64, and started spending more time on design and layout. Then we moved to having an in-house editor, rather than leaving it to the Ops Manager.

We realized it was an excellent way to communicate with our membership and the outside world. Until that point, anyone who wanted to receive an issue could call or email to join the mailing list. When we reviewed the list, we realized that several copies were being sent to American penitentiaries. This review prompted the start of subscriptions.

As the publication grew, more sponsors were keen to advertise. People started subscribing which helped recoup some losses. We were still producing the newsletter without generating much real income. This was also the time we launched our new website: avalanche.ca. We put our heads together and started another new design process to help increase quality, promote the new website and eventually make some retail sales.

We renamed it *avalanche.ca: The journal of Canada's avalanche community* for Volume 78. It had a new look and feel, with a perfect bound cover and glossy cover stock; it was printed at an actual print shop and was mailed out from a mail house. This was a huge step in creating a professional look for the rest of the world to see. For the 25th anniversary of the CAA, we did a full colour cover and received tons of positive feedback. By Volume 82, we started printing the journal on semi-gloss, partially-recycled paper, which again increased the quality and value.

I was led to a storage room with a lonely computer. No problem, I thought.

I feel that this was the turning point in making it a real magazine for all members and outside parties to enjoy. Here we are at Volume 100, and I am giddy! We have a full colour cover, a brand new name, new structure and a viable business plan to create a successful publication that will hopefully one day be on newsstands around the country and maybe even the world.

It has been an incredible journey. It has been my pleasure to work with many people through the years to really make this publication a proper representation of the dynamic professional community we are part of.

MARY CLAYTON

Our former Executive Director Clair Israelson offered me the job of editing *Avalanche News* late in 2003, along with the position of Communications Director. He had heard through the grapevine that I had left my job at CBC and was looking to move out of the city and back to the mountains. It was a great fit right off the bat; a perfect way to get back to my roots, and even more incentive for our family to make a permanent move to Revelstoke.

When I inherited *Avalanche News* at Volume 68, we were still calling it a "newsletter," a term that drove me a bit crazy. "This is a publication, not a newsletter," I would fume, splitting hairs that probably only I could see. Whatever we called it, this journal helped shape my new work life and thrust me back into the world of snow. I loved it.

My job was to take a good product and make it better. Editing this journal has been a great way to touch base with old friends in the avalanche patch, and meet many new ones. It's also been great working with Brent Strand over the years. Together, we made some big changes to this publication. We were very proud of a number of issues and I'm very excited to see where Karilyn and Brent take the journal next.

Contributors

DAVID WILSON
David Wilson, 49, is a businessman living in Vancouver with his wife and two teenaged sons. He loves the outdoors and is an avid sailor and downhill skier. He has recently returned to the backcountry after a 20 year hiatus, feeling much more confident after taking some long overdue avalanche training through Whistler Alpine Guides in Whistler, BC.
56 AVALANCHE ACCOUNTS

BILL EATON
Inspired by his friends' passion for the outdoors, William started photography as a personal hobby to capture those special moments and adventures of his friends doing what they love. This new passion for the camera has allowed him to express himself in new ways. From majestic landscapes to extreme sports, portraits to chill social gatherings, William's pursuit of a good challenge will take him just about anywhere.
24 THE INSIDE LOOK: RMR

MIKE CONLAN
Mike Conlan is a Ph.D. student with the Applied Snow and Avalanche Research Group at the University of Calgary (ASARC). Mike's thesis is improving forecasting for deep slab avalanches. The research will be conducted by means of fieldwork, cold laboratory experiments and database studies. He enjoys the mountain life in the winter, and canoeing, hiking and data analysis in the summer.
70 IMPROVED FORECASTING FOR DEEP SLAB AVALANCHES

WADE GALLOWAY
Wade Galloway is a entrepreneur and business owner presently residing in Lethbridge, Alberta. He was on skis at a young age, but has spent the last two decades sliding sideways. He discovered splitboarding in the winter of 06/07 and couldn't be happier. Having always enjoyed exploring, his splitboard has enabled him to combine this love of new things with his passion for snowboarding.
46 CANUCK SPLITFEST

MAREK BISKUPIC
Marek Biskupic is the head of the Avalanche Prevention Center of Mountain Rescue Service in Slovakia and is a Ph.D. candidate at Charles University in Prague. His primary research interest is avalanche modeling and monitoring using geographical information systems. He is an enthusiastic climber, skier and mountaineer. Avalanches are an essential part of his work as an avalanche forecaster and member of the IKAR Avalanche Commission.
66 PUTTING AVALANCHE TRANSCEIVERS TO THE TEST

FRANÇOIS DESROSIERS
Francois Desrosiers is an accomplished filmmaker and multimedia artist. He has produced hundreds of projects, including films on professional safety and educational training videos for the CAA. He survived an avalanche in 1999, and continues to spread the message on the importance of safety, education and experience in the mountains. Visit fdproductions.ca for more info.
24 THE INSIDE LOOK: RMR

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front lines

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40 YEARS OF EDUCATION
Highlighting 40 years of professional avalanche training

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THE INSIDE LOOK: RMR
Taking a look inside Revelstoke Mountain Resort's avalanche control program

in this **section**

RYAN BUHLER

CAA President's Message

AVALANCHE SAFETY OPERATIONS ACROSS WESTERN CANADA HAVE KEPT BUSY THIS WINTER. NOVEMBER STORMS CAME IN EARNEST, BUT DECEMBER PRECIPITATION DECLINED DRAMATICALLY, SETTING US UP FOR SOME CHALLENGING PERIODS WITH WEAK LAYER DEVELOPMENT DURING COLD, DRY PERIODS.

Phil Hein CAA President

PROMINENT warm-up cycles, including rainfall events to higher elevations, caused weak layers and crust interfaces, and decreased snowpack depths in many southern regions. It was not the La Niña conditions many anticipated, except in northern BC where the moist flow was channelled and amplified—there was talk of building arks to survive the spring melt.

A wide variety of operational activities and enterprises that employ avalanche professionals focus on managing hazard and risk to others in their care. From road and highway operations, to ski hills, forest and mining operations, to self-propelled and mechanized guiding operations, technically trained avalanche practitioners and professionals help provide a safety system for co-workers and clients.

The professional avalanche community is relatively small but spread out: we are a coast-to-coast avalanche nation. Managing the variations and extent of conditions is challenging, but is an important practice requirement. The exchange of information and insight is essential. Common standards and training is a requirement for all practitioners, and it is a life-long endeavour to stay current and deepen knowledge.

Focus on the technical training, skills and professional qualifications of CAA members has intensified over the last few years. Their work and skill sets are increasingly measured alongside other highly trained and qualified professions. Education and training requirements bridge between academic knowledge and hands-on technical skills. Demands on knowledge development, training and qualifications are increasing and must be met.

The new standards to meet Qualified Avalanche Planner (QAP) requirements are an essential step in our profession, in order to provide formalized avalanche risk assessments and avalanche safety plans that meet BC regulatory requirements. Other jurisdictions are following suit. These developments are in transition; we must continue working together in the avalanche safety profession, alongside other associated professions and the regulatory environment responsible for ensuring worker and public safety in many places.

Professional standards, duty of care, code of conduct and professional obligations are expected norms. Expectations push the avalanche profession to ever-higher technical and formal practices. The shift has been ongoing, but more work needs to be done. Everyone needs to be involved in the process. Get more involved in developing the future of your profession, to continue fostering the core competencies that have made Canadian avalanche professionals respected worldwide.

A NEW CAA EXECUTIVE DIRECTOR

The CAA board of directors would like to welcome new CAA Executive Director (ED) Joe Obad. Over the last year, we have split the boards and ED responsibilities of the CAA and CAC. Ian Tomm is moving to a full-time role as the CAC ED, and Joe Obad is full-time CAA ED as of February. Ian has been working in a transitional capacity to support the change for both organizations over the busy months, and is expected to focus fully on the CAC by April.

Joe brings a mix of experience in other endeavours. Ongoing engagement is required in many areas, including furthering the professional practice requirements and interfacing with other professional disciplines, government, regulators and other organizations associated with avalanche safety. Joe will be kept busy in the months ahead, assisting in these many endeavours along with the CAA board of directors, committees, and staff.

The CAA AGM and gathering of the avalanche community occurs the first week in May. We trust that all members are planning to attend, and that those from the north will safely float down the rivers to where the roads are dry. I look forward to meeting with all of you again. Remember, your association needs you. Be prepared to take on a new role as a board or committee member—it's your association and ours. We must all help row the boat.

Phil Hein, CAA President

Assessing Risk

JAMIESON AND JONES TEAMING UP TO AUTHOR NEW BOOK ON AVALANCHE RISK ASSESSMENT


DAVE SCOTT

THE CANADIAN AVALANCHE ASSOCIATION proposes to publish a new resource written by Bruce Jamieson and Alan Jones to provide an up-to-date analysis of permanent, static methods of controlling avalanche risk and snow avalanche risk assessment. The proposed book would fill a gap presented by the aging *Snow Avalanche Hazard Analysis for Land-Use Planning and Engineering* by Art Mears. Jamieson and Jones aim to tackle modern methods of risk assessment, mitigation and mapping.

The full-colour book will focus on the methods for avalanche risk assessment to meet the needs of avalanche consultants and avalanche planners. Both authors are professional members of the CAA and professional engineers with extensive experience in avalanche planning and risk mitigation.

The proposed publication date is July 2013. The CAA and those involved in the initiative are now sourcing direct or grant funding for the project. The CAA welcomes collaboration with professional organizations and/or associations interested in being involved or supporting the initiative either through technical and content reviews, financial support, or distribution.

CAA Executive Director's Report

AS THE CANADIAN AVALANCHE ASSOCIATION MOVES AHEAD WITH CLEARER SEPARATION FROM THE CANADIAN AVALANCHE CENTRE, IT SEEMS APPROPRIATE TO REMEMBER ITS ROOTS AS A STANDALONE ORGANIZATION.

Joe Obad
CAA Executive Director

The intention of Avalanche News is to assist communication between persons and organizations engaged in snow avalanche work in Canada. Short articles cover reports of accidents, upcoming and past events, new techniques and equipment, publications, personal news, activities of organizations concerned with avalanche safety, education and research. Contributions are expected from the readers.

Editorial note from Peter Schaerer,
Avalanche News Volume 8, January 1982

PETER SCHAERER'S editorial note captures the spirit of what he and the other first directors attempted to set forth for the CAA: exchange of information affecting professional practice; early standards for the Canadian avalanche community; development of key relationships with other organizations and government bodies; contributions to research and education; and the expectation that a community of avalanche experts can only grow through contributions of those who benefit.

As incoming Executive Director for the CAA, I'm humbled by the robust vision of the CAA's founders. Many challenges and opportunities we face today can be met by embracing that vision. Yet, this vision needs contemporary focus since industry and recreation are more active than ever in avalanche terrain, and scrutiny of avalanche incidents finds a global audience on Twitter with a few keystrokes.

Much of the early history of *Avalanche News* reflects the CAA's efforts to establish norms of practice, training, and professional standards. Today, the collaborative development of CAA's courses, weather services, and professional development are the envy of much of the world. While we still have much work to do on this front, our foundation is strong and thriving.

BRIDGES OF SNOW, IRON, WOOD

The CAA is looking outward to key stakeholder and government relationships that will define the next thirty years. In particular, WorkSafeBC's regulation 4.1.1 gives the CAA's *Land Managers Guide to Snow and Avalanche Hazards in Canada* and *Guidelines for Snow Avalanche for Risk Determination and Mapping* the status of regulation. Some describe this relationship with the BC government as "co-regulation." However one describes it, the expectations placed on the CAA and its members have increased as government and other stakeholders look to our members as subject experts, much as associations for lawyers, accountants, and engineers are called upon within their respective fields. The CAA has stepped to this level rapidly without the decades (or even centuries) of practice that have shaped other professionals in their fields. In some cases, we will need to work with other professions such as foresters and engineers to define appropriate fields of practice and boundaries, but WorkSafeBC's endorsement of the CAA through 4.1.1. provides a strong footing.

I come to these challenges with humility and excitement. I am a passionate backcountry skier, but not a professional member of the CAA. For the last decade, I have worked in Alberta's environmental non-profit community, both as staff and board member of several organizations. I will draw upon my experience in government and stakeholder relations to work with CAA staff, board and members to navigate through challenges. I provided leadership to my ENGO community by starting from the hard truth that our sector had the least organization, capacity, and government access. Few environmental solutions could be achieved without creating formal or informal partnerships of shared interest with more established sectors. I hope to work with the CAA membership to strike appropriate dialogue with external stakeholders to present shared solutions on practical ways to implement 4.1.1. This, I believe, is our best hope to continue fostering these productive relationships with other key professional and stakeholders for now and the decades to come.

THE IMPORTANCE OF MEMBERS

Engaging WorkSafeBC requires strong involvement from the membership. Shaerer expected contributions from all readers. That remains true of members of the CAA,

but not just to *The Avalanche Journal*. The CAA's lifeblood is member contribution to the development and maintenance of governance, programs and projects. The committed CAA staff are here to execute the wishes of members, as shaped by the board and committees.

It is striking how many of the same names from the 1980s still contribute generously. However, this pattern warrants reflection. We must promote renewal of membership representation on committees and the board, or the CAA risks missing mentoring opportunities, burning out veteran leaders, and losing appropriate input of new ideas. Among non-profit societies and associations this is a common problem. Small numbers from which to generate renewal further challenge us. If you have interests and experience relative to the CAA's committees, please contact a board member, committee chair, or me. There's likely work to be had for interested members at some level. Our board will have some vacancies this spring as well. Interested members should contact the president, current directors, or me. Contributions support professional development of the CAA, and also demonstrate leadership. The wisdom and contributions of long-time members are valuable and needed as well.

APPRECIATION

I would like to thank some of the people who are helping to make my transition into this role more effective. Many thanks to the board who have provided insights, wisdom, and patience. Thanks to the staff who have made me feel welcome as part of the team. Out-going CAA executive director Ian Tomm deserves special credit for the many steps he has taken to help me be effective for the CAA. I could not ask for better support. I look forward to building on this introduction and the body of work started thirty years ago to set the stage for another thirty years of contributions to avalanche safety in Canada and beyond.

Joe Obad, CAA Executive Director

40 Years of Education

AS THE INDUSTRY TRAINING PROGRAM CELEBRATES 40 YEARS OF PROFESSIONAL AVALANCHE TRAINING, WE TAKE A LOOK BACK THROUGH THE DECADES.

1970s

PETER SCHAERER

1980s

CAA ARCHIVE

1990s

CAA ARCHIVE

2000s

WREN M'ELROY

Fuse News

THE CAA EXPLOSIVE COMMITTEE ENGAGES AS A GROUP ON A REGULAR BASIS TO KEEP ABREAST OF EXPLOSIVES RELATED ISSUES.

Scott Aitken
Chair of the CAA Explosive Committee

FEW PROBLEMS have arisen lately and we appreciate the responsible reporting in InfoEx of the isolated misfires experienced by operators this past year. Dud rates have fallen dramatically from past years.

Professional members will likely have seen advertisements from Transport Canada reminding explosive users of the need to have an up-to-date Emergency Response Assistance Plan (ERAP) when transporting explosives. While this is not a new regulatory requirement, it proves the mandate of the Feds, which is to be thorough. From my experience, any audit you receive is just that.

We procured a new product from CIL Orion this season in our operation. The "Heli Charge" a 13.6 kg (30 lb) Hydromite emulsion (Explosive, Blasting, Type E, 1.5D, UN0332, PG II). It has a faster detonation rate and should fire completely with a recommended minimum 0.15 kg (1/3 lb) primer. ANFO shots by comparison in unconfined blasts tend to scatter a significant amount of the blasting agent without detonating. The shelf life is one year under good conditions. So far I have used too few shots to form a firm opinion of the power, but they removed the cornice as intended. The wire tie must be cut and removed in preparation. We removed these wire ties and replaced them with tie wraps to speed shot preparation on the blast day. I recommend big lineman's pliers paired with bolt cutters for this. The primer is inserted in the open end until it is in contact with the putty-like emulsion and then folded over and electrical tie wrapped and the fuse assembly taped.

The package is a long sausage shape. I expect less shots tobogganing down the starting zone than with ANFO. This is from extra snowpack penetration.

We appreciate news of any explosive issues that folks encounter.

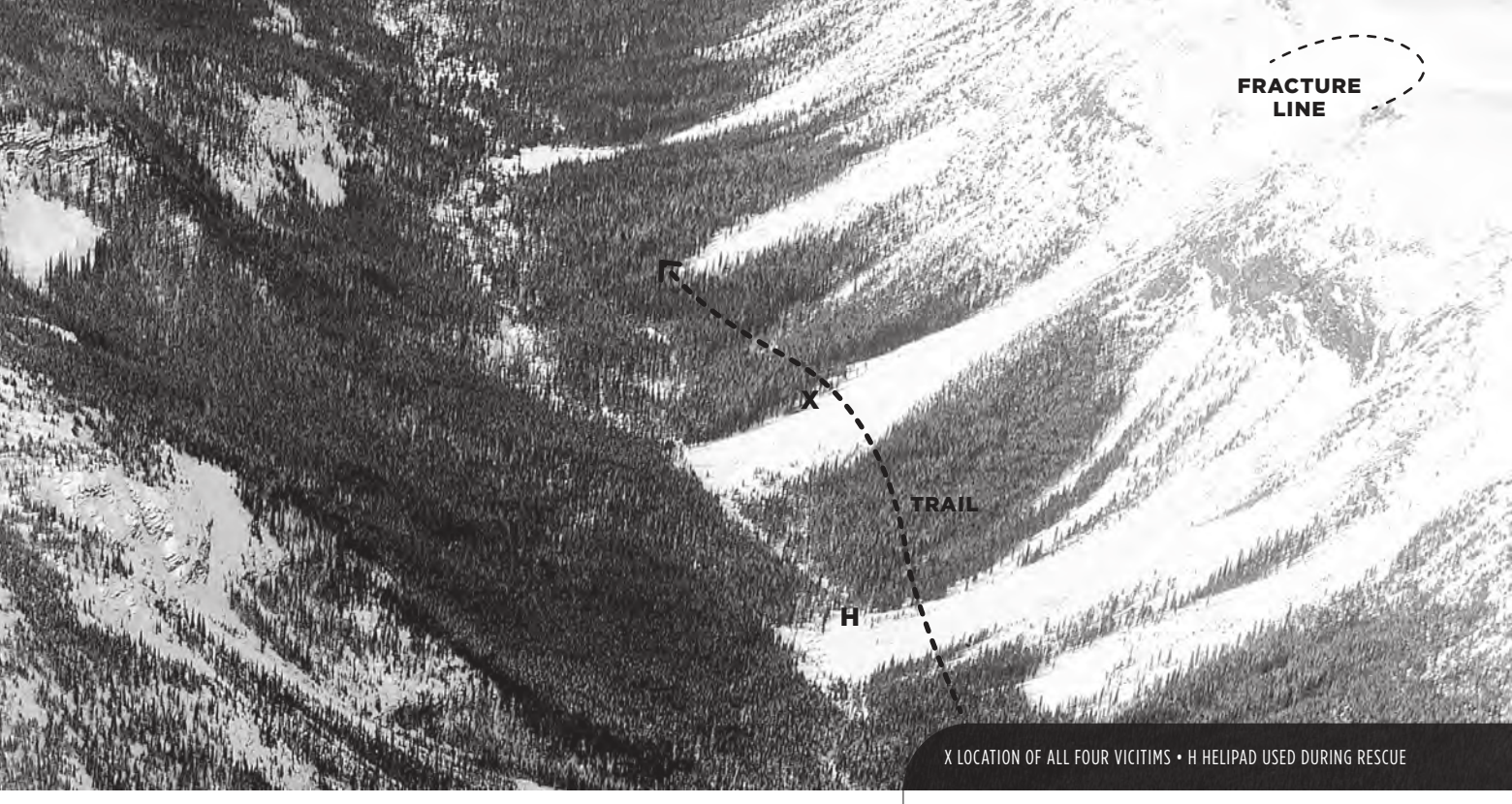
Notice

IT HAS RECENTLY come to the CAA's attention that many operations still have mislight procedures in place that include cutting fuses and replacing pull wire igniters. This practice has been against WorkSafeBC regulations and manufacturers recommendations for over a decade. All operators are encouraged to review their blasting procedures to ensure mislight procedures are struck and that all mislights are treated like misfires. Not following the regulations can result in a suspension of the blaster's Blasting Certificate. For further reference, consult WorksafeBC's *Guide for Writing Avalanche Control Blasting Procedures* and WSBC *OHSR Section 21*. Members can also find the procedures in the CAA *Generic Avalanche Control Procedures*, which is given to all students who have taken the CAA's Avalanche Blasting Course.

Safety Fuse Facts

- Safety fuse assemblies (SFAs) used in avalanche control in Canada are either MILDET brand supplied by CIL Orion, or Cobra brand supplied by Orica Canada.
- Both incorporate a static staple (static shunt).
- Both assemblies use M700 fuse with the Cobra being orange and the MILDET army green colour.
- Both fuse assemblies use a blasting cap with a PETN base charge for long storage life under good conditions. Cobra uses Mantesbo #8 caps. MILDET uses MIL Spec high strength caps.
- High manufacturing standards have made these products very reliable.
- Both fuses use plastic end caps to protect the powder train.
- CIL Orion reports they extensively test MILDET fuse assemblies at their Crawfordville, Arkansas plant under extreme heat and cold with flawless performance.
- Orica reports usage of Cobra fuse assemblies to be 60,000 units in the United States and 7,000 in Canada with a clean track record.

*TM/MC Columbia Brewery



X LOCATION OF ALL FOUR VICITIMS • H HELIPAD USED DURING RESCUE

History **Lessons**

AVALANCHE ACCIDENTS IN CANADA VOLUME 4: 1984 - 1996

11 FEBRUARY 1990 HEALY CREEK TRAIL, BANFF NATIONAL PARK

FOUR BACKCOUNTRY SKIERS KILLED

AVALANCHE DANGER RATING AT EXTREME

LARGE, WELL-ORGANIZED RESCUE

ON FEBRUARY 11, 1990, five skiers left the Bourgeau Trailhead to ski tour towards Healy Pass. About a half hour up the trail, a group member lagged behind and lost sight of the group. At about 12:15, she heard a noise like an avalanche. She turned around at 13:00 because of heavy snow and poor visibility. At the trailhead, she met a party of two venturing out and let them know that her four friends were further up the trail.

Two large avalanche paths cross the Healy Creek trail, 3.5 and 4km from the trailhead. Avalanches do not frequently run across the trail. However, in the previous three days, 76cm of snow had fallen at Sunshine Village Ski & Snowboard Resort, 3km southeast. Density increased as temperatures warmed during the storm, building a slab of relatively dense snow over lighter layers.

Two other groups crossed the avalanche paths at about 11:30 that day. On their way down, they noticed a huge avalanche deposit across the trail at the second slide path. They encountered the party of two at 14:00 and realized that four skiers from the party of five might be buried. They searched the deposit and returned to the trailhead to report the avalanche.

The avalanche started 350m above the trail at the corniced ridge (at elevation 2,350m) at the top of a southeast-facing bowl. The crown averaged 1.5m and reached a maximum of 4m. The avalanche picked up additional snow on the way down the 35° slope below the cornice. It ran across the creek and 70m up the other side. The deposit included large blocks of hard snow from the cornice. The deposit was 185m wide where it crossed the trail. The established slide path was only 118m wide at the trail, but the deposit extended into mature timber 20m to the east and 47m to the west of the path, snapping trees up to 15cm in diameter. Avalanches of this size are expected in this path once every 30-50 years. The four skiers were having lunch in the mature forest to the west of the path in what would normally be considered a safe place.

After Banff Park Wardens verified that four people were missing, they initiated a full-scale search at 16:40, including dogs and helicopters. Most rescuers started up the trail on skis, and others began making a snowmobile trail from the trailhead. A helicopter dropped the first dog and master off at the deposit in the second path, and then flew up the valley in an unsuccessful search for the skiers. The helicopter then moved rescue teams to the site until dark. The snowmobile trail reached the site at 19:00, making it easier for teams to reach the site. Thirty searchers worked until 22:40.

The search resumed at 07:00 on February 12. Avalanche dog teams, probers and shovellers travelled to the site by snowmobile rather than helicopter due to

visibility. Avalanche dogs were unable to find human scents, likely because of the strong smell of many broken conifers in the deposit. Rescuers set up a helicopter pad and campsite for shelter on the first avalanche path east of the accident site.

The morning flurries were followed by clearing and cooling. Visibility improved and helicopters bombed the slide paths above the Sunshine road, releasing two large avalanches the blocked the road for four hours. Air temperature reached -24°C by evening. Rescuers returned to Banff by 20:00.

At 07:00 on February 13, a level IV rescue response began. Searchers from Banff, Jasper, Kootenay, Waterton and Glacier National Parks and Kananaskis Country formed probe teams. Four dog teams searched the deposit.

At 8:30, the start zones of the two Healy Creek avalanche paths were bombed from helicopters to remove any remaining unstable snow. An avalanche in the first path covered the trail, helicopter pad and ran to the creek. This stabilization of the snow above the helicopter pad, combined with improved visibility, allowed rescuers to fly to and from the site for the remainder of the rescue. Two helicopters and fifty people worked in temperatures below -30°C, and teams of searchers rotate to the camp for food and warming. Two searchers were evacuated after freezing their toes.

A search dog located the first victim at 10:00 in the forest west of the open path. The victim's ski top was just below the surface, which may have assisted the dog. Several articles were located near the first victim, and by 12:00 all probers were deployed in the forest near the first victim. The second victim was found a short distance away. Searchers returned to Banff at dusk.

On February 14, air temperature had warmed to -15°C and searchers returned in the morning. At 10:20, a search dog indicated a third possible victim. Shovelling at the site located the two remaining victims. All victims were found dead between 1.5 and 1.8m below the surface. They had been pushed 8 to 18m through trees below the trail where they were having lunch.

SOURCE

Banff National Park Warden Service

WEATHER CONDITIONS AT SUNSHINE VILLAGE SKI & SNOWBOARD RESORT ELEVATION 2145M, 3KM SE OF ACCIDENT SITE

DATE	TIME	MIN TEMP	MIN TEMP	PRECIP	SNOWFALL	SNOW DENSITY	TOTAL SNOWPACK	WIND
1990		°C	°C	cm/h	cm	kg/m^3	cm	km/h
02-09	1500	-8	-14	S 1	4	55	193	34 – SW
02-10	0730	-5	-8	S 1	26	63	211	23 – SW
02-10	1500	-4	-6	S 1	10	80	218	13 – W
02-11	0730	-3	-5	S 2	29	111	238	26 – SW*
02-11	1200	-	-	S 2	-	-	-	24 – S*

Summary

THE SKIERS stopped in mature timber, usually a safe place to step. However, one day before the avalanche, the avalanche danger rating in the Sunshine and Assiniboine area was high. The bulletin stated "snowfalls of up to 40cm have fallen along the continental divide in the last 23 hours. Should heavy snowfalls forecast for Sunday materialize, the avalanche hazard will approach extreme in most areas of the park." The heavy snowfalls on Sunday, February 11 contributed to a very large avalanche that ran wider than usually. During extreme avalanche hazard, areas near avalanche terrain that are usually safe may not be.

The surviving member of the group was not aware if anyone in the group had checked the avalanche forecast before the trip.

Transceivers would not have helped the victims but would likely have made searching much faster.

The rescue effort was large and well organized. It involved people from five national parks, Sunshine Village, the RCMP, Kananaskis Country, a helicopter company and an ambulance service. Rescuers worked in cold temperatures, and on a hard avalanche deposit. Press conferences were held at specific times. Some relatives of victims were flown over the accident site.

The strong smell from broken trees limited the effectiveness of the search dogs, especially in the first two days of searching. Searchers believe that holes probed in the frozen deposit early in the search allowed the scent to reach the surface, facilitating subsequent canine searching.

BY THE NUMBERS

NUMBER OF PEOPLE ON THE AVALANCHE CONTROL TEAM:
24 Pro Patrol, up to 10 per day on routes

NUMBER OF CAA PROFESSIONAL MEMBERS ON THE AVALANCHE CONTROL TEAM:
12 Professional Members

NUMBER OF CARDA TEAMS:
3 Validated CARDA Teams,
1 Team in Training

AVALANCHE CONTROL METHODS:
Hand charging, heli bombing, trunk lines, bomb tram

MOST USED CONTROL METHOD:
We threw hand charges on 70% of days we were open last season.

AVERAGE NUMBER OF CHARGES DEPLOYED BY THE BOMB TRAM EACH SEASON: 40-60

AMOUNT OF HELI TIME USED PER YEAR: 2-4 hours

APPROXIMATE NUMBER OF AVALANCHE PATHS WITHIN THE SKI AREA BOUNDARY: 70+

THE CURRENT OPERATIONAL BOUNDARY (IN ACRES): 3,121

AVERAGE NUMBER OF DAYS ON SKIS PER SEASON FOR FULL TIME MEMBERS OF THE AVALANCHE CONTROL TEAM: 100

AVERAGE AMOUNT OF SNOWFALL PER YEAR: 10-12 metres

AMOUNT OF PREVIOUSLY CLOSED TERRAIN THAT YOU'VE OPENED IN RECENT YEARS: Doubled terrain after first season

WHAT THEY DO TO GET READY FOR THE FREESKIING WORLD TOUR: Get lucky with the weather and the forecast, bomb early to get familiar and confident with snowpack

BIG NUMBERS: 300 acres per patroller per day for coverage.

THE INSIDE LOOK

Revelstoke Mountain Resort Avalanche Control

THE IMPOSING MT. MACKENZIE // BILL EATON

CORNICE CONTROL // FRANCOIS DESROSIERS

THROWING A HAND CHARGE // BILL EATON

CARDA TEAM JIM SALTER AND CAL // BILL EATON

AVALANCHE DEBRIS IN SOUTH BOWL // G.GREENE

GONDOLA EVAC TRAINING // MARTY SCHAFFER

CORNICE CONTROL // MARTY SCHAFFER

FRACTURE LINE ANALYSIS // G.GREENE

Avalanche Education at **Kootenay Pass**

Story and photo by Wren McElroy

"NUMEROUS AND LARGE AVALANCHES IN THE WINTER OF 1971-72 STIMULATED A GROWING INTEREST IN AVALANCHE SAFETY EDUCATION." – PETER SCHEARER

DID BEING BORN IN 1972 HELP SHAPE MY PASSION FOR AVALANCHE EDUCATION?

OVER THE PAST three years, that passion has helped bring John Tweedy's vision of using the old highway crew camp at Kootenay Pass as a base for avalanche education to fruition. The combination of easy access to terrain and exposure to an active MOT avalanche control program make the base camp an ideal location for learning. Tweedy was the BC Ministry of Transportation's first avalanche technician at Kootenay Pass, starting in 1980 and retiring in 2010.

Construction of the highway between Salmo and Creston was begun in the late 1950s; it was opened with ceremony in August 1964. The highway ran right through many kilometres of avalanche paths on both the east and west side of Kootenay Pass. Crews were surprised by the amount of snow on the south facing slopes when they resumed work in the spring—avalanche debris stopped the plow truck drivers from reaching the pass. The original camp for the maintenance crew, equipment operators, plow truck drivers and avalanche technicians was set up in the early 1970s at 1,775m. During a particularly heavy storm cycle, assistant avalanche technician Dave Smith's truck was buried in the yard, and then run over by a plow. He hitchhiked home.

Early Kootenay Pass professional avalanche courses started in 1979 and ran until 1991, based out of a Creston hotel. A nearby Greek restaurant even created an official training school libation called "the avalanche." Courses offered included the RTAM Level 1 and Level 2 (Resource Transportation Avalanche Management) and CAA Avalanche Operations Level 1 and 2. During 1981-82, four fully supported manual weather stations were put in place, provided by MOT for the Creston-based courses.

Eventually, the daily 120km drive from Creston proved to be too much and courses at the pass began to wane. Furthermore, the highway maintenance was transferred to a contractor who did not maintain the course snow study plots at the Kootenay Pass summit. Another attempt to hold a Level 1 course at Kootenay Pass was made in the late 1990s, and John Buffery and Marc Deschênes drove from Nelson with students. Days at Kootenay Pass were interspersed with trips to Whitewater, but it was still too much driving.

In 1992, a new building named the Bunkhouse was built, which was a welcome relief from the ATCO trailers that populated the pass. MOT and the road and bridge maintenance contractor manned the building until 2005. When

the maintenance contractor started plowing out of Creston, the need for a manned camp at the pass dissolved.

Laura Adams, a CAA Professional Member teaching the Renewable Resource Program at Selkirk College, signed a memorandum with Parks in 2002 to able to teach in Stagleap Provincial Park, but did not use the building. A number of courses for that program were taught up there. I taught a three-day winter camping/RAC course there in 2003 with Laura's successor Keyes Lessard. Other Selkirk College AST courses were taught there throughout the 2000s, including a course Keyes and I taught for the Department of National Defense. I used the building to teach an all-women AST 2 course I in 2005, and benefitted from a presentation and mock avalanche scenario by Ministry of Transportation. In 2006 and 2008, the RCMP and the Mountain National Park Dog Handlers used the Bunkhouse for Dog Handler Validation courses, which did not seem to impact the day-to-day operations of the avalanche program.

At that time, BC Parks weighed in on the building's usage. They did not want to see a mountain hostel at the pass; however, they were very supportive of the educational opportunities that could be offered up there. Two BC Parks staff, Dave Heagy, Senior Parks Ranger and Jeff Volp, Area Supervisor, taught AST 1 courses up at the pass for the Ministry of Environment in 2010 and 2011. Participants included Park Rangers and Senior Rangers, Area Supervisors, Conservation Officers, and other Ministry of Environment Staff. All the participants stayed at the Bunkhouse and utilized the classroom, kitchen and living facilities.

In the fall of 2009, John Tweedy and I spoke of starting the CAA Avalanche Operations Level 1 courses again up at the Pass. We agreed on the benefits for the students, instructors and the ITP program to run the courses there. Ian Tomm asked for a proposal. John laughed at the simplicity: the facility is free, the travel is free, it's all here, he said; bring the students, instructors and a cook and you are good to go. The biggest challenge of a hut-based course is the logistics of the helicopter transport, but at Kootenay Pass, everyone drives there and then they stay. Students and instructors have full days without worrying about driving times, meal preparation or cold students sleeping in the back of trucks. Three years in a row, I missed the first day of teaching a CAA Level 1 course at Kokanee Glacier Cabin because of short December days and difficult weather. At Kootenay Pass, that is not an issue.

The facility is free, the travel is free; bring the students, instructors and a cook and you are good to go.

In January 2010, students stayed in the Bunkhouse as Course Leader, Mike Rubenstein and I taught the first CAA Level 1. The week was a resounding success, with support from the MOT crew, fantastic catering and good weather. Three Level 1 courses have been run in 2011 and 2012, with positive reviews from all parties involved.

The Bunkhouse can accommodate 13 students, two instructors and a cook, with private rooms and shared washroom facilities. There is a separate kitchen, classroom and inside storage for skis and gear. The MOT avalanche staff maintains a residence as well. A great benefit is the close involvement with the MOT Highways avalanche control program.

A short walk from the building, the Avalanche Technicians have enlarged their existing weather plot; the twice-daily weather observations are easy to get to and relevant. Even as we move into the digital age of weather stations, having a professional, manual weather station for students to use adjacent to the Highways weather station certainly enhances the hands-on learning. Anyone can read a digital screen, but to walk out in the cold, dark air of the early morning and read a maximum and minimum thermometer is better for tactile learners.

The elevation of 1,775m is a great starting place for ski tours, and each day progresses further into the terrain. With short travel times, groups are able to get to their study areas, look at terrain and have time to dig their profiles. Some days we were able to travel and dig test profiles on two different aspects.

Mid-week we travel to Whitewater Ski Resort, an hour's drive to the west, where students see another active avalanche program. This provides good linking to lessons—by that point, the students have started using the daily hazard evaluations and drafting snow profiles and they get the opportunity to see all of those skills put into practice. Also, with the easy-access backcountry a short tour from the resort, students are quickly exposed to a different scope of terrain. Whitewater provides one-ride passes for the students and instructors in exchange for ITP credits for Whitewater staff.

Later in the week, Tweedy successor Robb Andersen presents on the MOT avalanche control program. Robb also demonstrates an avalanche rescue scenario with his dog Kilo. A unique benefit to Kootenay Pass is witnessing the Gaz.ex avalanche control in progress. This year we arrived on Sunday, January 29 as a significant storm cycle was occurring. Robb closed the highway at 02:30 in a high hazard.

He woke Dave Smith and me up at 05:00 to let us know they were going to do a shoot. Students were in a safe zone on the highway by 05:30 to experience how avalanche hazard is managed and mitigated on the highest all-weather mountain pass in Canada. We could see the flash of the Gaz.ex and hear the rumble of the size 3 and 3.5 avalanches as they buried the highway. Robb's incredible video footage of control work allowed the students to see the magnitude of what they could hear. The highway remained closed that day until 2:30pm, but the class was secure in the Bunkhouse learning about the nature and formation of avalanches.

Many stakeholders are involved with the operation of the Bunkhouse at Kootenay Pass. BC Parks owns the land, MOT built and owns the building, and the Highways Road and Bridge Maintenance Contractor is responsible for the upkeep of the building. Infrastructure upgrades including potable water, plumbing upgrades and reducing the carbon footprint are in the plans for the coming summer season to allow for continued operation of courses.

Using the Bunkhouse for educational courses is a win-win situation for course participants and the various agencies that take advantage of having their courses at Kootenay Pass.

Wren McElroy is a professional member of the CAA and ITP Instructor. Her day job is the Assistant Safety Supervisor at Whitewater Ski Resort.

Spring Conference **2012**

APRIL 30 - MAY 4
PENTICTON, BC
This year's Continuing Professional Development topic is "From the Pencil to the iPad: What's Next for Field Work?" We look forward to seeing you at this year's CPD on Wednesday, May 2.

MONDAY, APRIL 30
ITP

TUESDAY, MAY 1
Annual General Meeting

WEDNESDAY, MAY 2
Penticton Convention Centre
CPD and Trade Show

THURSDAY, MAY 3
Case Studies and Research

FRIDAY, MAY 4
Case Studies and Research

FOR MORE INFO, PLEASE VISIT
avalanche.ca/caa/members/spring-conference-and-meetings

A Tale of Two Committees

IN THE SPRING OF 2011, THE FORMER PROFESSIONALISM AND ETHICS COMMITTEE SPLIT INTO THE CONDUCT REVIEW COMMITTEE AND THE PROFESSIONAL PRACTICES COMMITTEE.

CONDUCT REVIEW COMMITTEE
The CAA Conduct Review Committee's main functions are: determining the validity of complaints against CAA Members; determining whether a Member breached the CAA Code of Ethics; bringing these findings to the CAA Board who will determine if remedial action and/or discipline is warranted; and, finally, informing CAA Members of their rights and responsibilities relative to the Code of Ethics and the Conduct Review Process and Procedures.

PROFESSIONAL PRACTICE COMMITTEE
The CAA Professional Practice Committee represents all matters relating to professional practice of CAA members in the avalanche risk management industry in Canada. The committee's primary focus is to promote professional standards and develop worker scope of practice that reflect industry best practice and compliance with current legislation.

Safety is at Our Core

At Teck, we're committed to ensuring everyone goes home safe and healthy every day. We're proud to support the Canadian Avalanche Centre's work to promote safety on our mountains.

Teck

CAC

know more

40

AVALANCHE AWARENESS DAYS 2012
Celebrating the communities who held events

42

MOUNTAIN SNOWMOBILE EDUCATION PROJECT
New program has support from three levels of government

in this **section**

GRAHAM HELFRICK

CAC President's Message

IF "MEMBERSHIP HAS ITS PRIVILEGES," HOW DOES THIS APPLY TO THE CAC? THE CAC BOARD IS HAVING THIS DISCUSSION AS WE LOOK FORWARD TO INCREASING MEMBERSHIP AND MEMBER SERVICES. WHAT KIND OF MEMBERS? HOW MANY? WHAT SERVICES? WHAT BENEFITS?

Ross Cloutier
CAC President

CAC BYLAWS set out three CAC membership classes: Friend, Supporter, and Honourary Member. Friends are individuals who pay annual dues, or are professional or affiliate CAA members in good standing. Supporters pay annual dues and are any group, business or organization that apply, or are Associate Members of the CAA. Honourary Members are nominated by the board, or are honourary CAA members. Thinking ahead, how do we engage the public, and what benefits can we provide?

We have just over 800 CAC members, mainly CAA professional members and snowmobilers. Where are the skiers and boarders? I am a good example: until I was asked last year to sit on the CAC board, I was not a CAC member. Yes, I used their services; I supported their mandate, of course; I liked the way they did business; I saw the positive way they influenced recreationists; and I appreciated that there was an agency responsible for Canadian public avalanche safety. Being a member didn't really cross my mind—this from someone who has been a MEC and ACC member for decades. Tens of thousands of Canadians need to know the importance of supporting what the CAC stands for by becoming members. The CAC is a public entity, and the public should be involved in its direction—a strong, vibrant membership base will show industry, public and government that public avalanche safety is vital.

The CAC is membership driven. It exists to fulfil a public safety mandate, but it also exists to serve its members. Members will dictate its future by providing direction, including voting on a wide range of topics at the AGM in Penticton on May 1.

The number and type of members will determine the CAC's influence and ability to deliver public avalanche safety programs. Over 7,000 recreationists take CAC AST courses each year. Many more attend CAC events and workshops. The membership would grow by over ten times in one year if they all became CAC members! We must answer questions about the advantages and impacts of a larger membership. To date, the CAC has punched way above its weight, largely due to the impressive support of avalanche professionals funders. Imagine what could be achieved with many more members.

CAC membership numbers may be low because it is hard to identify benefits. What are the privileges? What do I get for my money? We are working hard to find answers. Consider, for a moment, being an ACC member. Specific benefits are: support of public access programs; reduced ACC hut fees; access to alpine club services in Europe; support of research; support of mountain culture and publications; participation in ACC events; and liability insurance coverage. I may not use all services in a given year, but I support them with my yearly membership on principle alone.

The CAC needs to better articulate membership benefits: they may include use of the public avalanche forecasts or participation in an AST course or workshop, or receiving this journal. They may include the support of research programs or development of curriculum. If the CAC's primary services are free and no additional benefits are identified, why would someone become a member and maintain membership for years to come?

Professionals see the ongoing benefits of supporting public avalanche safety. They get it. They have been touched by avalanches and know the need for a concentrated focus on public avalanche safety, and they will remain an important part of CAC membership. We must create the same level of awareness and support throughout Canada.

A principle in critical incident stress counselling is that intervention should be available to anyone who responds to a victim, sees a victim, or talks to someone who sees a victim. Maybe CAC membership should be comprised of anyone who has been involved in an avalanche, has seen an avalanche, knows someone involved in an avalanche, or knows the potential of an avalanche. Connect the public with public avalanche safety.

Mountain Equipment Co-op now has over three million members. That's a nice round number, don't you think?

Ross Cloutier, CAC President

Snowpulse cartridge **recall**

SNOWPULSE CARTRIDGES FOR THE INFLATION SYSTEM 1.0 ARE BEING RECALLED DUE TO THE POSSIBILITY OF A DEFECTIVE PRESSURE GAUGE. THE NEW SNOWPULSE CARTRIDGES FOR INFLATION SYSTEM 2.0 ARE NOT AFFECTED, NOR ARE CARTRIDGES FROM THE MAMMUT RIDE AIRBAG R.A.S.

OVER TIME, the pressure gauge on some Snowpulse cartridges may develop a critical leak, which can lead to a drop in air pressure or a complete loss of air pressure. This can mean the airbag only partially inflates, or does not inflate at all. Mammut Sports Group AG, who acquired Swiss airbag specialists Snowpulse AG in July 2011, has decided to recall and replace all first generation Snowpulse cartridges (Inflation System 1.0, 207 and 300 bar).

If you have previously replaced the pressure gauge on your cartridge, you do not need to send it back. Mammut has set up a special help desk for the Snowpulse cartridge recall program. Reach them at helpdesk@snowpulse.com or by telephone at 250.344.5060 if you are in Canada to get an electronic return shipping label. Please visit snowpulse.com/en/recall for more information and to download a return form.

CAC Executive Director Report

MY FAVORITE PART ABOUT AVALANCHE FORECASTING IS THE EVENING MEETING, JUST AFTER THE DAY'S ACTIVITIES, WHEN FIELD DATA IS REVIEWED, ANALYZED AND DISCUSSED.

Ian Tomm
CAC Executive Director

THE MOMENT when heads come together to craft a paragraph that tries to convey the complexity of snowpack distribution over terrain, incorporating concepts such as likelihood of triggering, expected size, weak layer distribution, grain form and size, and stability test results all in one coherent phrase. I don't think that process is celebrated enough. It's where the magic happens in day-to-day team decision making in frontline avalanche forecasting and it's the cornerstone of the Canadian avalanche profession.

My frontline work has taken a back seat in recent years, while I focus on the needs of the CAA and CAC. When the CAA was small, there was neither the workload nor funding to support full-time management staff, so managers could augment their income with frontline work. In 1981, the annual budget was just $2,950. Thirty years later, the combined annual budget of the CAA and CAC (including special projects) is close to $3 million. Today, avalanche safety requires significant financial and human investment, whether it's professional work or public safety. It requires dedicated and focused boards and staff.

So now I find myself in different meetings. Instead of talking about weather, avalanche, snowpack and terrain variables to determine hazard ratings and InfoEx submissions, it's legislation, regulation, media strategy, accident statistics, budgets and funding models, member services and performance indicators. But I realize that the magic of collaboration I loved so much in frontline avalanche forecasting is also a constant in my work with the CAA and CAC, both internally with staff and externally with membership and committees.

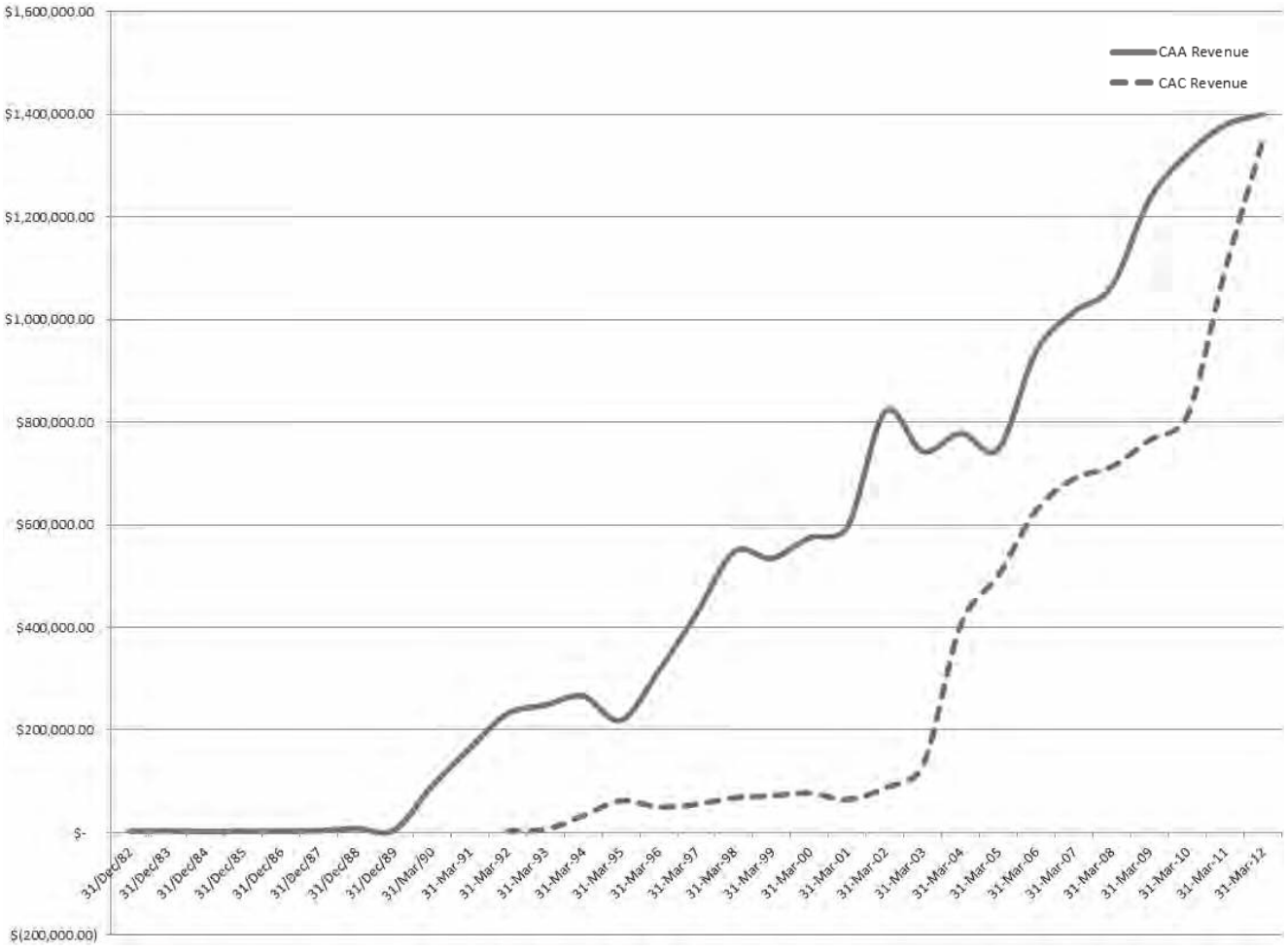
Much has been written in this journal about the volume of issues facing each of these organizations. Essentially it was starting to limit creativity and the ability to address ongoing challenges and pressures. I am happy to report that with the separation of the two boards and the hiring of a dedicated executive director for the CAA, the magic that keeps us all engaged in this community is starting to return. At staff, management and board levels, the conversation has been revitalized and the timing couldn't be better.

Joe Obad is the CAA's fifth Executive Director and he's coming at a pivotal time in the association's life. The CAA is in new territory, pushed for a variety of reasons from its "comfort zone" in to the unknown. Yes, there is uncertainty and yes, there are challenges but this is where the magic happens. I have no doubt that the CAA will succeed. In 2003, as part of the CAA's Educational Visioning Project, there was a clear wish from the members at the time to bring about greater societal recognition for the work of avalanche forecasters. Now we have it, though government regulation. It's an exciting time for the profession.

Since incorporation in 2004, the CAC's focus has been primarily on needs in BC. As these priorities are now being addressed, needs in other regions are becoming apparent. Assisting the Yukon Avalanche Association in developing public avalanche safety programs in the Yukon is one area of growth. Other future plans include looking at creating a basic program in Newfoundland, expanding our support for Quebec programs, and developing a new forecast region in BC's North Rockies region.

With the next few years of my career now focused on the CAC, I think my challenge will be to further build on the strong commitments of Canada's avalanche community towards public avalanche safety. How can the CAA and CAC work together to strategically advance public safety in this country? The CAC is a significant employer of working avalanche professionals, as both core staff and as contractors, and this relationship is sure to grow and expand. All levels of government have reaffirmed their commitments in funding and support to the CAC. Together with industry's high level of professionalism and commitment to public safety, how will we advance to the next level? What will that look like and what new opportunities and challenges will it bring?

These questions are pushing the CAC out of its comfort zone. Our programs, which are built on infrastructure largely provided by industry through services such as InfoEx, are no longer enough. An example of this



challenge is the need to build better avalanche information and forecasting products for the North Rockies region. The CAC knows little about forecasting in data sparse regions; this is unknown territory for us. So now I find myself at meetings not too dissimilar from those magical ones after a day of heli-skiing, but facing a different challenge. How does the CAC develop forecasting programs in regions without professional observations? The discussions are wide ranging, at times argumentative and passionate, but we're finding solutions. And that's where the magic happens.

Ian Tomm, CAC Executive Director

Notes from the Graph

- From 1992-2004, public safety programming was run under the CAA. Those programs have been split from CAA numbers during this period and reported as CAC revenues to reflect the growth of public safety programs compared with industry-focused programs.
- You can see the effects on funding for public safety due to accidents. 2003 was a key year when governments formalized their support for public safety programming, and again in 2010.
- In 2010, personal donations to the CAC increased dramatically, primarily through contributions from snowmobilers.

L. BURKE

Fernie Alpine Resort
Fernie, BC

STEVE GUNDERSON

Hemlock Valley Resort
Hemlock Valley, BC


FRANK SPEARS

Prince George
Prince George, BC

VAL SEVERIN

South Cariboo Search and Rescue
100 Mile House, BC

Avalanche Awareness Days **2012**

40 VENUES THROUGHOUT BRITISH COLUMBIA, ALBERTA AND THE YUKON PARTICIPATED IN AVALANCHE AWARENESS DAYS, JANUARY 21-22 AND SEVERAL COMMUNITIES HELD LATER EVENTS. AS IN PREVIOUS YEARS, SNOWSTORMS RAGED THROUGHOUT BC AND IT WAS A PERTINENT WEEKEND TO BE AVALANCHE AWARE.

ROBERT BRAUN

Kelowna Sledfest
Kelowna, BC

MARK GRIST

Mount Seymour
North Vancouver, BC

RICK WOODHOUSE

West Kootenay SnoGoers
Rossland, BC


JENI RUDISILL

Whitehorse
Whitehorse, YT

CARDA DOG DEMOS, explosives demo, avalanche awareness info booths, transceiver races, probe and shovel demos, poker rallies, film viewings, speakers and fundraisers were all a part of the weekend at various venues. Fernie Alpine Resort, Apex Mountain Resort, Big White Ski Resort, Nakiska Ski Resort, Sunshine Ski Resort, the Revelstoke Snowmobile Club, Mt. Washington and the UBC Varsity Outdoor Club all participated in fundraiser auctions, raising more than $14,000 to benefit the CAC's public avalanche forecasts.

Forty communities in total participated in this year's Avalanche Awareness Days. If you would like to get involved and hold an Avalanche Awareness event in your community next year, visit our website at: **www.avalanche.ca/cac/events**.

A big thank you to everyone for the great energy and organization in promoting avalanche awareness and safety in Canada. Mark your calendars for next year! Avalanche Awareness Days will be January 19-20, 2013.

CAC ED IAN TOMM, EAST KOOTENAY MLA BILL BENNETT, FERNIE MAYOR MARY GIULIANO, CAC COMMUNICATIONS DIRECTOR MARY CLAYTON, AND KOOTENAY-COLUMBIA MP DAVID WILKS

Mountain Snowmobile Education Project in the Spotlight

Story and photos by Mary Clayton

CAC SUPPORTED BY FEDERAL, PROVINCIAL AND MUNICIPAL GOVERNMENTS IN PUBLIC LAUNCH

IAN TOMM SPEAKING TO THE MEDIA

ON JANUARY 20, three levels of government came together in Fernie, BC to show their support for the CAC. The event was the official launch of the three-year Mountain Snowmobile Education Project. On hand to announce the program was local MLA Bill Bennett. Joining MLA Bennett in the announcement was Kootenay-Columbia MP David Wilks and Fernie Mayor Mary Giuliano.

"The Mountain Snowmobile Education Project will help prepare snowmobilers with knowledge that could save their lives," said MLA Bennett, who represents the East Kootenays. "British Columbia's world-class winter tourism includes snowmobiling as a major attraction. The safety of our residents and visitors is a priority for our province and a commitment we take seriously."

The Mountain Snowmobile Education Project is funded by a grant from the National Search and Rescue Secretariat (NSS), a department of National Defence. "NSS grants are just one way that the Government of Canada has made its contributions to public avalanche safety," said Kootenay-Columbia MP David Wilks. "Environment Canada—through Parks Canada and the Meteorological Service of Canada—is also a long-time supporter of the CAC. We are pleased to support programs and services that provide a public safety net and enrich the lives of Canadians and our visitors."

This project has special meaning for the Fernie area, one of the province's hotspots for mountain snowmobiling. Speaking for the municipal government of Fernie, Mayor Giuliano said her community is proud to support the CAC. "The CAC's avalanche forecast for this region is a highly valued product for many of our residents as well as our visitors," she said. "Public avalanche safety affects all of us who live in BC."

The Mountain Snowmobile Education Project will build on an already promising foundation, said CAC Executive Director Ian Tomm. "Last year we saw a big jump in training among mountain sledders, along with a tremendous shift in attitude towards avalanche safety," Tomm explained. "We look forward to continuing to work closely with clubs and organizations to increase the avalanche knowledge base and skill level within this community."

JEAN-CHARLES FORTIN

AST in the **East**

Peter Marshall

AVALANCHE SKILLS TRAINING FOR SNOWMOBILERS IN THE HAUTE-GASPÉSIE

SNOWMOBILING is an immensely popular sport, pastime, and mode of transportation in much of Canada. In the west, we are well aware of the sport's growth, particularly mountain snowmobiling. In many other provinces, including Quebec, the majority of snowmobilers ride extensive trail networks through relatively flat terrain. There are over 33,000 kilometres of groomed or marked snowmobile trails throughout Quebec. However, there is also a rapidly growing group of people riding powerful performance snowmobiles and heading to mountainous areas like the Chic-Choc Mountains or Laurentian Mountains.

In January 2012, the Centre d'avalanche de la Haute-Gaspésie (CAHG) and Adrénaline Hors Piste, a snowmobile guiding company based in Mont-Louis, presented an Avalanche Skills Training course (AST1) in Mont-Louis in the Gaspé region of Quebec. We believe this was the first AST course for snowmobilers in this part of the country. I helped teach this course but relied heavily on Philippe Bilodeau (Avalanche Technician at the CAHG) for translation and local knowledge. Ten students took part in the course; many were owners or employees of snowmobile companies from all over the province, and others just had a general interest in avalanche safety. The majority of students had ridden, or plan to ride, in Western Canada—many will hone their skills in their backyard before heading out to the big, well-known riding areas in BC.

The mountain peaks in the Haute-Gaspésie range in elevation from around 500 to 1,000m. They are not big mountains by any means, but are quite impressive. Several locals in the course pointed out spots where they like to hill climb, and I was certainly surprised—there is no doubt that they are playing in avalanche terrain, just like someone riding in BC. During this course, several YouTube videos were posted showing very small avalanches resulting in full burials due to terrain traps. These videos were perfect teaching tools, because they showed the most significant problem the students will face.

A primary focus of the course was on companion rescue skills, with an emphasis on what to do once the victim is on the snow. In many areas of western Canada, an organized rescue team could be on the scene within minutes. Revelstoke's Boulder Mountain rescue was a great example, where the first responder arrived on scene by helicopter less than 15 minutes after the incident. In the Gaspé, if something goes wrong recreationists are very much on their own. There is no local search and rescue team and there are no heli ski companies (or helicopters for that matter). Riders depend primarily on other snowmobilers in the area, and may wait several hours for an organized rescue team to arrive from Montreal, Bagotville, or Nova Scotia. As such, they must know how to perform a rescue well, and evacuate an injured person over long distances. During the course we ran the students through three companion rescue scenarios. Sharp, keen students to begin with, by the third simulation their rescue skills were at the highest level I have seen in an AST1 course.

I believe that mountain snowmobiling will continue to grow in eastern Canada. As the popularity of the sport rises, so will the need for recreational and professional level avalanche training. Although this region is several thousand kilometres away from western Canada's big mountains, the people riding out east are very much a part of our community. They are learning to manage avalanche problems and honing their skills for their first trip to Valemount or Revelstoke or Whistler. I believe it is very important to provide avalanche safety training for all user groups in all mountainous areas in Canada, and I think we are certainly moving in that direction.

Big Picture Forecasting

THE CANADIAN AVALANCHE CENTRE'S PUBLIC AVALANCHE WARNING SERVICE INTRODUCED SEVERAL NEW WEEKLY PRODUCTS FOR ADVANCED RECREATIONAL USERS MIDWAY THROUGH THE 2011-12 WINTER SEASON TO POSITIVE RESPONSE. EACH WEEK FORECASTERS PRODUCE A WEEKLY SUMMARY, WEATHER OUTLOOK AND CONDITIONS OUTLOOK. ALL THREE NEW PRODUCTS ARE FOUND UNDER THE BULLETINS TAB OF THE CAC SITE.

THE WEEKLY SUMMARY provides a big-picture, general overview of conditions over the last week in the CAC's forecast regions. The Weekly Summary is intended as a starting point for looking forward into the future, and the forecasters hope users will make a habit of reading it each week.

"We make this summary public to help our users learn about avalanche hazard and risk, understand how avalanche forecasting works, and see some of the background work that goes into the products and services produced by the CAC," says Karl Klassen, Public Avalanche Warning Service Manager.

The Weather Outlook is based on a combination of deterministic weather models, model ensembles that are highly probabilistic, and a briefing from a professional meteorologist. It is unlikely to accurately predict conditions at any specific place or time, but it suggests the most likely scenario for the periods indicated.

The Conditions Outlook is produced by combining the Weekly Summary and the Weather Outlook. It is an internal discussion used by professional avalanche forecasters at the CAC to consider potential scenarios for the evolution of the snowpack and future avalanche activity. It offers brief hypotheses about snowpack evolution and avalanche activity.

Karl Klassen is the Public Warning Service Manager. If you have questions or comments about the new forecast products, email kklassen@avalanche.ca.

VISIT AVALANCHE.CA/CAC/BULLETINS FOR THE LATEST INFORMATION

ANGIE THREATFUL

Buck-a-Day for Avalanche Safety

FOR THE SECOND YEAR IN A ROW, THE ASSOCIATION OF BC SNOWMOBILE CLUBS (ABCSC) HAS IMPLEMENTED ITS SUCCESSFUL "BUCK-A-DAY" WINTER PROGRAM.

MEMBER CLUBS contribute one dollar from every trail fee charged to support avalanche safety programming through the Canadian Avalanche Centre. At the time of writing, the CAC has received over $29,000 so far this fiscal year.

Funds raised through the Buck-a-Day initiative support core programs of the CAC, specifically the public avalanche warning service. Money also goes toward the build-out of the CAC's public avalanche warning service to improve avalanche forecasting in the North Rockies region of BC, and toward the CAC's snowmobile program coordinator Carole Savage.

These programs have been identified through collaboration with a wide range of snowmobiling organizations. Funding these services is an important component of an overall strategy to ensure safe, enjoyable snowmobiling in BC's backcountry for years to come.

"With this endeavor, ABCSC has taken a true leadership role," says CAC Executive Director Ian Tomm. "The CAC thanks the ABCSC Board of Directors and its member clubs for their vision and commitment to public avalanche safety."

The snowmobile clubs participating in the program are the Blue River Powder Packers, the Coquihalla Summit Snowmobile Club, Crowfoot Mountain Snowmobile Club, Eagle Valley Snowmobile Club, Hunters Range Snowmobile Association, Merritt Snowmobile Club and the Valemount Area Recreation Development Association (VARDA).

The Great Debate

SHOULD BACKCOUNTRY RECREATIONISTS WHO ARE NOT CAA PROFESSIONAL MEMBERS CONTRIBUTE TO AND ACCESS AN INFORMATION EXCHANGE PROGRAM LIKE THE CAA'S INFOEX? DO YOU SEE THE VALUE OF AN AMATEUR OBSERVATIONS PROGRAM?

INFOEX provides a daily exchange of technical snow, weather, avalanche and terrain information between subscribers. InfoEx is a key source of data used by the Canadian Avalanche Centre's public avalanche forecasters to produce and verify their products.

Should the CAC provide an amateur InfoEx program for recreationists? What should it look like? Who should have access?

WHAT'S YOUR OPINION?
Let us know at greatdebate@avalanche.ca

RIDER JEREMIAH TRINIDAD // JOHN COCCI

Canuck **Splitfest**

Wade Galloway

SPLITBOARDING CELEBRATION DOUBLES ITS PROCEEDS IN ITS SECOND YEAR

WHEN ASKED why he robbed banks, bank robber Willie Sutton said, "That's where they keep the money." In a winter of extended droughts and marginal conditions in areas across North America, the answer to the question of why Canuck Splitfest is held in Rogers Pass is simply, "that's where they keep the snow."

The area is home to world famous terrain suitable for shredding in virtually all types of weather patterns and avalanche cycles, and it came through again with reliable snowfall. Some of the lower elevations did exhibit a nasty ice crust in the forest, but one did not need to climb too high before encountering hazard snow—hazardous because it offered up second hand white rooms as the cold Selkirk blower lingered in the air. Ullr delivered the goods and nary a splitboarder could be found without a smile.

The date was shifted to January 7-8, 2012 to avoid industry trade shows and allow better sponsor participation. The new date and the success of last year's inaugaul event led to an immediate influx in sponsors. Nearly every sponsor from last year came back on board, with most upping the ante with more donations. There was over $10,000 in prizes up for grabs in a fundraising raffle for the Canadian Avalanche Foundation. Many participants arrived on Friday to take in the Winter Wildlands Alliance Backcountry Film Festival screening. About 70 people enjoyed it, highlighted by Sweetgrass Productions' "Solitaire," introduced by splitboarder Kyle Miller who was featured in the film.

Saturday evening featured a presentation and raffle. Kyle Miller brought his new film "FreeRider" for the North American premiere. Whistler-based photographer and splitboarder Andrew Strain showed off his Deep Winter entry from the past year. Revelstoke splitboarder Mark Hartley was back by popular demand and did not disappoint with an updated presentation. Mark's frequent partner Greg Hill inspired the crowd with the tale of his two million foot season, big lines and quite a bit of splitboard footage. Greg even got caught up in the spirit of the weekend and opted to slide sideways down the mountain. According to the rumours, he was actually pretty good at splitboarding!

Over $4,500 in raffle tickets was sold once the dust settled. It was standing room only, with over 100 people crammed into the dining room. Seven people competed for the grand prizes in a timed board to ski to board changeover contest. Between admission from Friday night's film festival and money that Prior Snowboards donated from commemorative Canuck Splitfest soft goods, gross revenue for the weekend was over $5,200. After event expense such as insurance, the film festival fee, and shipping charges, I am very proud to announce that we more than doubled last year's net proceeds to the Canadian Avalanche Foundation. We raised $4,368.94 for the CAC Fund and $419.22 for the Craig Kelly Fund for a grand total of $4,788.16.

I would like to thank all those who attended who made it a success. A huge thank you to all of the sponsors who donated product for the raffle, Prior Snowboards for being the presenting sponsor and bringing demo splitboards, and the members of the Parks Canada team who worked behind the scenes to help coordinate this event. I would also like to express my gratitude to everyone at the Canadian Avalanche Centre and Canadian Avalanche Foundation, including Ken Little, Gordon Ritchie, Ian Tomm and Jennifer George for their assistance with the event. Thanks go out to Mark Hartley, Kyle Miller, Greg Hill and Andrew Strain for their presentations; Adam Warkentin for the stainless steel keychains; John Cocci for the projector and A/V assistance; the staff at the Glacier Park Lodge; and everyone else who helped out. Should the Mayan calendar be incorrect, we'll see you all again in 2013. Just in case, I recommend getting out as often as you can! Keep your skins warm and may all your turns be powder.

Canadian Avalanche Foundation **Sponsors**

CAC supporters

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Association of Canadian Mountain Guides
Agostino Guarienti Ing
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Alpine Club of Canada
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BC Snowmobile Federation
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Nelson Search and Rescue
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Northwest Avalanche Solutions Ltd
Obiettivo Neve
Orica Inc.
Ortovox Canada
Oso Negro Coffee
Panorama Mountain Village, Avalanche Protection Program
Parks Canada Agency
Pieps Canada
Powder Creek Lodge
Powder Mountain Snowmobile Club
Powdercloud Software
Professional Association of Wilderness Guides and Instructors
Recco Rescue System - North America
Recreation Outfitters Inc.
Resorts of the Canadian Rockies Lake Louise Division
Retallack
Rio Tinto Alcan
Schultz Motorsports
SEAR Search & Rescue Equipment
Selkirk Backcountry Lodge
Selkirk Tangiers Helicopter Skiing Ltd.
Sherry Waldroff
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Whistler Blackcomb
Whitewater Ski Resorts Ltd.
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avalanche **community**

in this **section**

ERIC NEFF

Schedule of Upcoming **Events**

CAA & CAC SPRING CONFERENCE AND ANNUAL GENERAL MEETINGS

April 30 – May 4, 2012
Penticton, BC

Mark your calendar! You won't want to miss any of the presentations, meetings or discussions at this year's AGM.
avalanche.ca/caa/members/spring-conference-and-meetings

CANADA WEST SKI AREAS ASSOCIATION 44TH SPRING CONFERENCE AND TRADE SHOW

April 30 – May 4, 2012
The Delta Okanagan, Kelowna, BC

For more information:
cwsaa.org/index.html
office@cwsaa.org

HELICAT CANADA ANNUAL GENERAL MEETING

May 4, 2012
The Ramada Inn, Pentiction, BC

For more information:
info@helicatcanada.com

WESTERN SNOW CONFERENCE

May 21 – 24, 2012
Anchorage, Alaska

The theme for the 80th annual conference is: "Bright lights and winter nights—working with extremes."
For more information:
westernsnowconference.org

INTERNATIONAL SNOW SCIENCE WORKSHOP 2012

September 16-22, 2012
Anchorage, Alaska

The ISSW is a biennial meeting of the professionals who work in the field of snow science and winter recreation.
For more information:
issw2012.com

ICELANDIC ASSOCATION FOR SEARCH & RESCUE'S RESCUE 2012 CONFERENCE

October 19 – 21, 2012
Reykjavik, Iceland

For more information:
icesar.com/rescue

WILDERNESS RISK MANAGEMENT CONFERENCE

October 24 – 26, 2012
Portland, Oregon

This annual conference focuses on risk management and practical skills for the wilderness adventure and education industry.
For more information:
nols.edu/wrmc

Congratulations to Robert Kennedy, Q.C.


SCOTT FLAVELLE

THE CANADIAN AVALANCHE ASSOCIATION AND CENTRE would like to offer congratulations to Robert Kennedy, Q.C. for his appointment as Queen's Counsel. The Queen's Counsel designation recognizes exceptional merit and contribution by members of the legal profession.

Kennedy has represented the ski industry since 1983 as a counsel and volunteer, and continues to work with the ski industry to develop mountain safety and risk management programs. He has been involved in CAA and CAC activities and initiatives for over a decade.

Mounties in the **Mountains**

Story and photos by Mary Clayton

IN EARLY JANUARY 2012, 15 RCMP REGULAR OFFICERS AND VOLUNTEER AUXILIARY OFFICERS FROM SIX SOUTHEAST BC DETACHMENTS TOOK PART IN A TWO-DAY AVALANCHE SKILLS TRAINING PROGRAM, LED BY CAC EXECUTIVE DIRECTOR IAN TOMM.

"THE RCMP is providing this training to all of its officers who conduct snowmobile patrol duties during the winter months," said Corporal Dan Moskaluk of the Penticton RCMP, who is also the Media Relations Officer for the Southeast and North District. "Completing the course permits RCMP officers in BC to carry out their duties in a more effective and safe manner when responding alongside of other community partners during avalanche incidents."

Revelstoke RCMP Staff Sergeant Jacquie Olsen first approached Ian Tomm in 2010, with the idea of providing avalanche safety training for local officers. "Getting together for a couple of days is a great opportunity to get to know our RCMP colleagues better," said Ian. "These people are among the front-line workers when avalanche accidents occur, and if we can help to support them in any way, the CAC is happy to do so."

> Getting together is a great opportunity to get to know our RCMP colleagues better.

Officers from Revelstoke, Golden, Kimberly, Merritt, Sicamous and Salmon Arm took part in the training, and CAC/CAA staff members Mary Clayton and Brent Strand also helped out with the course. "We would like to thank the CAC, our partners in public safety education and awareness," said Cpl Moskaluk. "Given that living and enjoying the backcountry experience is such a big part of our culture here in BC, we are very fortunate to have a world leading agency such as the CAC to assist us all in educating ourselves in avalanche safety awareness."

Going Global

OUR PARTNERS, SUPPORTERS AND FRIENDS ARE ENGAGED IN AVALANCHE SAFETY, EDUCATION, TRAINING AND RESEARCH AROUND THE GLOBE.

Colorado

A FIRST-HAND ACCOUNT OF AN AVALANCHE INCIDENT

Scotland

EXPLORING THE SPORTSCOTLAND AVALANCHE INFORMATION SERVICE

Australia

TAKING CAC TRAINING DOWN UNDER

Japan

TOO MUCH POWDER MAKES FOR DIFFICULT TRAILBREAKING

AST in **Japan** and **Australia**

I AM A PROUD AST COURSE PROVIDER FOR THE CAC IN BOTH JAPAN AND AUSTRALIA. MY MOUNTAIN HOME IS HAKUBA, JAPAN, SITUATED AT THE TOP END OF JAPAN'S KITA ALPS. IN MY SECOND SEASON OF TEACHING AST COURSES, I RUN UP TO SEVEN PER SEASON AND IT IS A PERSONALLY REWARDING EXPERIENCE. IT ISN'T EASY FINDING WORK THAT IS BOTH ENJOYABLE AND MEANINGFUL—EVER SAT IN A CUBICLE?

Damian Banwell is an Active Member of the CAA, and a member of the Japan Avalanche Network. He is a backcountry skier and a small-scale farmer living in the mountain town of Hakuba, Japan.

AST COURSES in Japan are attended by a mix of foreigners of different nationalities: expats living city lives, those on holidays in Hakuba for a week or two, or folks working here for the full season. Seasonal workers in lodges are most in need of some training, as many eventually find themselves in our abundant and very easy-to-access complex terrain. These seasonal workers can also lead by example when powder hungry short-stay guests arrive and, after priming themselves prior to their holiday by big terrain photos on the internet, ask questions about where to go (with a GoPro® camera on their helmets).

In Japan, a frequent field session reality is the depth of unconsolidated powder to wade through when introducing Companion Rescue. That is not the case in Australia, where I started offering AST 1 courses in 2011. While I am an Australian citizen, it was my first look into the terrain there. It has its own beautiful character that is quite different from other mountain ranges of the world. For three weeks I lived in a camper van in a national park and conducted four busy AST 1 courses. The extremely enthusiastic students were openly thankful that someone bothered to bring the CAC standard of training to their home.

While it seemed an odd idea initially, it makes good sense to teach AST 1 course in Australia, since Australians like to travel for their snow yet seldom like to 'give up' two powder days in Whistler to get educated. I am heading back this season to teach AST 1 courses again, and I am already excited about the colourful Snow Gums, evening campfires, the wildlife roaming around me in the dark, and fishing in the afternoons.

Australia may have a high snow line, but I have 250cm peak HS at my front door in Japan—I enjoy having a taste of mountain life where I can camp out on dry ground and still enjoy good backcountry and deliver the worthwhile AST curriculum to grateful customers.

sportScotland Avalanche Information Service

EVERY AVALANCHE FORECAST REGION IN SCOTLAND HAS ITS SPECIAL CHALLENGES. AVALANCHE FORECASTERS MUST MAKE SPECIAL CONSIDERATIONS FOR THE RELATIVELY SMALL TERRAIN SCALE, EXTREME WEATHER AND CONCENTRATED USE OF AVALANCHE TERRAIN. THERE ARE AVALANCHE INCIDENTS EVERY WINTER, SOME WITH SERIOUS AND FATAL CONSEQUENCES.

Alan Dennis is a senior forecaster at the sportScotland Avalanche Information Service. He is a former Executive Director of the CAA.

THE SCOTTISH Avalanche Information Service was started in the late 1980s, and is highly respected and well used by all mountain users. The five daily forecast regions are popular climbing areas where the most avalanche incidents occur: Glencoe, Lochaber (Ben Nevis), Creag Meagaidh and the north and south Cairngorms. The SAIS Co-ordinator is based at Glenmore Lodge in the Cairngorms. Bob Barton and Blyth Wright describe the history, development and Scottish avalanche phenomena in *A Chance in a Million*. Wright's political skills were an important factor in the continued operation of the SAIS.

The SAIS is funded through sportScotland with money from lottery. It also relies on in-kind support from ski areas, regional mountain rescue teams, National Parks and Trust, and commercial sponsors including Mountain Equipment (UK), Backcountry Access and Cairngorm Mountain Sports.

The SAIS is a member of the European Avalanche Warning Service. Steve Blagbrough, Mark Diggins, Graham Moss, Tom Rupar and Blyth Wright have presented papers at ISSW. In the formative years, Andre Roch, Robert Bolognesi and Othmar Buserall took an interest and contributed to the Scottish avalanche experience. More recently Dave McClung, Bruce Jamieson, Stephan Harvey and Juerg Schweizer have also spent time with colleagues in Scotland.

> Locals wondered about this foreign import who didn't climb hard, drink single malt or speak the language.

The Scottish avalanche terrain is mainly a hazard to climbers, with some exposure to ski tourers and walkers. The corrie rims (top of gullies, buttresses, and ridges), scarp slopes (approach slopes to climbs), the gullies themselves and cornices above all the terrain are the most frequent source of avalanches. The exit slopes (usually 30-50 vertical metres, often with overhead cornices) from the top of steep technical climbing terrain produce avalanches that can sweep away a lead climber and pull out the belayed second. On an alpine scale, the terrain is small; however, debris can span a kilometre. In the winter of 2009-10, avalanches crossed main highways and railroads and damaged facilities.

Avalanches with crown depths of three to five metres are not uncommon. Small avalanches, less than size 1, are a common source of serious incidents in climbing terrain. The winter of 2011-12 has seen low snow and some warm cycles with extreme winds. Even so, avalanches have been triggered that have caught and carried walkers, fortunately with no serious consequences.

The Scottish weather has a reputation for extremes. All regions have wind, snow and varied temperatures, and most have periodic winter rain; one may experience a quick transition from the comfort of home to hostile weather in the Cairngorm plateau, and back to the pub to tell it all. There is powder skiing in Scotland and the winds do drop below 100mph during storm cycles, however one of these is more frequent than the other. The powder component is more commonly spindrift powder avalanches that frequently run. Two to three metres of snow on one aspect today may be on a different aspect tomorrow.

The Scottish snowpack evolves rapidly. Depth hoar, buried surface hoar and persistent weak layers are not common, but in some winters they can be a contributing factor to avalanches. Each forecaster goes into the field every day to assess conditions. Snow profiles, either quick or full, are a part of an avalanche observer or forecaster's daily fieldwork. Travel around the climbing areas gives a sense what is relevant for the daily report. In most places, the public forecaster has information (i.e. InfoEx) coming in to help with preparing the daily forecast, prepared by 16:00 for publication.

The second generation of SAIS observers/forecasters are now established in the program. Mark Diggins has been the SAIS Co-ordinator since 2008, and has developed a verification/ standards program for observers and keeps the SAIS at the fore with social media, using blogs, Twitter, SMS messages, and Facebook. Three of the five area observers contract holders have been with the program since it started, and their personal and professional mountain and avalanche resumes are daunting. They are a wonderful group to work with.

I have spent eight seasons in Scotland, based in Aviemore in the north Cairngorms from 1999-2004 and in the south side from 2010-12. My first season was spent under the watchful eye of Blyth and locals who wondered about this foreign import who didn't climb hard, drink single malt or speak the language. I have only made progress on one of those fronts, with Blyth the grammarian. My anecdote file is full from Scotland, with memorable days on and off the hill. For more information on SAIS, please visit **www.sais.gov.uk**.

SAIS ARCHIVE

THE TOP OF BLACK SPROUT IN LOCHNAGAR // SAIS ARCHIVE

Avalanche Accounts Caught in a **Colorado Avalanche**

David Wilson

MY FRIEND CHRIS AND I DECIDED TO GO SKI TOURING RATHER THAN DOWNHILL SKIING. I RENTED TELEMARK SKIS, BOOTS, POLES AND BINDINGS AT LARSON'S (I-70 & KIPLING), AND PAID A $16.00 DAMAGE DEPOSIT. I JOKINGLY ASKED WHAT WOULD HAPPEN IF I DIDN'T BRING THEM BACK OR—HA—IF I ONLY BROUGHT ONE BACK. SHE REMARKED THAT I COULD ONLY DO THAT IF I LOST THE OTHER ONE IN AN AVALANCHE.

I felt like I was being hit by a fast-moving locomotive… plummeting down the slope at one hell of a rate.

WE DROVE I-70 west to US40 and headed north towards Winter Park. We turned at the Henderson Mines Road parked in a small, snow-covered lot at the end of the road, adjacent to the mine. Three or four other cars were in the lot already and I thought we would unfortunately be sharing the same trails with these guys. We geared and waxed up. Chris, by my request, put too much wax on my skis, which slowed my progress.

The day was beautiful—a few clouds, but a brilliant blue sky completed the background. We skied one to two miles up the snow-covered road, where it broke into a stunning glacial valley. Chris figured we were around 11,250 feet, and peaks flanking us were likely close to 'fourteeners.' The valley ran close to east-west as we approached from the east end. It seemed to curve slightly to the south towards its end about six or eight miles away. Somewhere beneath us lay an old road, which wound its way up over Jones Pass at the Continental Divide.

Our first run was down a south-facing slope. I really got the knack after the first few turns, and when we got to the bottom it seemed so short. What we needed was a bigger slope, a longer run. We looked across the valley to the south and saw what we were looking for: perfect for some graceful turns, it was a relatively clear slope with juvenile trees, 1-8 feet tall and scattered.

It rose a little steeper than our first; up the same grade about 500 vertical feet, leading to a bench that was almost flat. The bench went back against the mountain another two to three thousand feet horizontally, where it abruptly ended as the mountain headed up very steeply through exposed rock outcroppings, talus, and more snow to its peak several thousand vertical feet above the bench.

What a sight! Majestic mountain peaks to our backs, sunlit slopes across the valley and a perfect tree-scattered and undisturbed slope ahead of us to carve turns in twelve inches of soft snow.

As we traversed up the slope, the elevation was wearing on me. I had a difficult time keeping up with Chris. As soon as he would let me catch up, he would move ahead, anxious for those turns. I neared the top edge of the slope, Chris ahead by twenty yards, standing on the bench admiring the royal views. I continued grinding along, approaching the same edge when I spotted Chris making sudden, unnatural movements in my direction. I took a good look behind him, and the steep section behind the bench was collapsing, a deep crown forming horizontally 2,000 feet above, separating a huge load of snow from the mountain from right to left. At the same time, I heard Chris yelling "move it, move it, avalanche!" I turned in the deep snow with a jump turn, and headed for the heavy timber to the right. I felt something terrible was about to happen. I stumbled, trying to push with my poles, picking up speed slowly. A second later, I looked back to see my friend among some small trees and got a fix on his position.

TELL US YOUR STORY
If you have been involved in an avalanche and want to share your story, email us at: stories@avalanche.ca

DAVID WILSON COLLECTION

DAVID WILSON COLLECTION

During the same glance over my shoulder, snow began cascading like waves over the bench and onto me. There was an absence of sound, save for a dull roar. I felt like I was being hit by a fast-moving locomotive, thrown forward onto my chest, plummeting down the slope at one hell of a rate. It was as if I was being carried down a raging river, beneath the surface, being bashed against submarine trees and pounded on the snow. Somewhere I remembered to try swimming. I came up seeing light, not blue sky, but light. I felt relief. I felt I needed to fight this torrent. I went down again, struggling to swim to the top and seeing light once more. I took in a big gulp of air (and snow), thinking I might need it soon. Down I went.

At some point, I sensed the ride was ending and at exactly that same moment, everything stopped and I was frozen in hard concrete. The entire event took three or four seconds.

I had no sense of orientation, no up or down, no right or left, just snow pushing against me in complete contact from every direction. My eyes were open but everything was black. I started to panic and hyperventilate. It looked like I was finished. I'd be out of air in seconds… I had no chance.

Something calmed me, cooled my nerves—something was there with me, collecting me. My breathing slowed and I started thinking again. Maybe some part of me was above ground—maybe a ski or a pole, something to mark my cold situation. I tried flexing my entire body to break loose, with no result. Then, I tried every limb independently, focusing all my strength in one area at a time. Nothing but my right hand was free to move. Strangely, I couldn't tell where it was exactly except to my right. Maybe it was at the surface, maybe someone would see it, and maybe Chris would see it. I rotated it around and around. It was hope. If it was at or near the surface, maybe my head was as well. Maybe someone would hear me. I screamed my guts out; I screamed in complete terror.

I continued as long as I could, feeling the air running out. I needed to keep making noise, and keep moving my hand, but my screams were becoming gasps for air. I felt myself sliding away.

I saw my hair sticking out of the snowy slope from above. No face or features were visible but I knew it was me. I remember simultaneously feeling my head being slapped around and hearing the words "I love you man, I love you, I love you." Those words pulled me back, pulled air back into my lungs, pulled life into me.

It was Chris. He was yelling at someone to get help. He said he heard me moaning. He was panicked, digging like a crazed fanatic. Strangely, I was very calm, trying to slow Chris' spastic digging—this from a head sticking out of the snow! I felt as if I was being cared for like a small child, watching as someone freed me from my entrapment, limb after limb. My left leg was missing a ski and felt like it might be hurt. My right shoulder felt strange and seemed to thud back into place as Chris tried to pull me upwards and I pushed down to help. I yipped with pain but wasn't conscious of any. My right leg was still attached to its ski. We dug another hole down to it and Chris

went down head first to release the binding, but not able to recover the ski.

Finally, I slid out to a beautiful day. Chris and I hugged each other for all we were worth and I started to cry uncontrollably. A man appeared with a hat and neck gator, which he put on me before he skied off for help. Why did we need help? I think I was in fairly deep shock. I was freezing cold, shaking and shivering. Two more people appeared: a fellow named Mike and his wife Cindy with their two dogs, a Samoyed and a Husky. Cindy put a jacket on the snow and offered me a seat, which I took. The dogs came to me and began licking my ears, as if they knew something had happened. I thought this was the greatest thing that had ever happened in my life.

Mike and Cindy took some pictures of the site and helped us out. Chris climbed the avalanche to retrieve his skis, and as I waited, I looked into the hole I had been in. I had ended up in an upright, standing position facing directly back up the hill. The top of my head was the closest part of me to the surface at about two to three feet below.

Chris loaned me one of his skis to make up for my lost one, making our ski out a little quicker. We were met by mountain rescue snowmobiles on the way out, making the balance of the trip to the parking lot in style.

It was then, at the lot, that I realized the seriousness and magnitude of our ordeal. The sheriff, an ambulance and a half-dozen rescue vehicles were unpacking snowmobiles and equipment to come look for us. I saw a stretcher and snow probes. Chris said he saw a helicopter flying over.

My god, were they all here looking for me? I was standing among them, having a relaxed conversation with the paramedic we had met partway down. The sheriff wanted to know where the 'victim' was. I waved from a few feet away and gave him my particulars.

After a brief check over by the paramedic, Chris and I climbed into our red Jimmy and gave Channel 2 a quick interview to "hopefully save someone else from doing something as stupid as us," as they later described.

We left the scene. It was over. We returned one ski.

The days that followed were full of emotions and feelings, yet full of vitality and a new perspective for the simple things. But most important was that I found new, true respect for life.

This account was originally written March 9, 1992, three days after the incident.

Dave contacted Beth Stewart of Parents of Lost Skiers (POLS) to share his story. POLS can be reached at pols@shaw.ca

Blast from the Past
The CAC Goes Surfin'

Lynn Freeland

IN MY LIMITED KNOWLEDGE OF THE NET I HAVE OFTEN ASKED MYSELF. "IS THERE ANYTHING THAT ISN'T ON THE NET?" I HAVE FOUND THAT EACH AND EVERY TIME I GO TO LOOK FOR SOMETHING, I GET SIDE TRACKED AND OPEN A WHOLE NEW CAN OF WORMS TO LOOK AT.

I USUALLY FIND MYSELF gawking at everything I've turned up and forgetting what my first initial inquiry was for.

I'm sure many avid NET users will think this is pretty blonde, but I am blonde, and so I'm sure that there are a few people out there who are just like me. Safe in this logic, I'm sure there has to be quicker system in place for exploring certain venues. I find myself all too often being totally frustrated with the system and of course I never seem to have the time to do any serious surfing. My final conclusion is "someday I will have to take some time to learn how to do this."

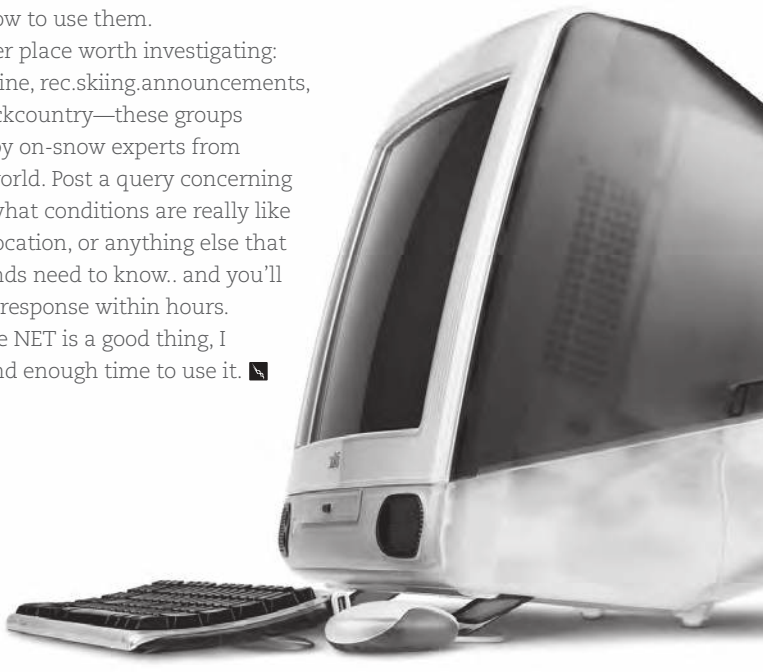
There is a lot of information out there and American sites dominate the web. One example is SkiCentral; according to one person's opinion "If it never snowed again, you would never find the time to explore all of its links." Many of these sites seemed to be geared directly to the teenagers who need to see all the graphics. What the web does do, however is to round up the best current information in obscure subject areas. Now with the many ways of actually riding on the snow the number of alternative technologies is mind altering. Here you can look at all the latest fads, monoski, skiboard (short fat skis used without poles), snow sail, snow bike, skijoring… And it goes on and on.

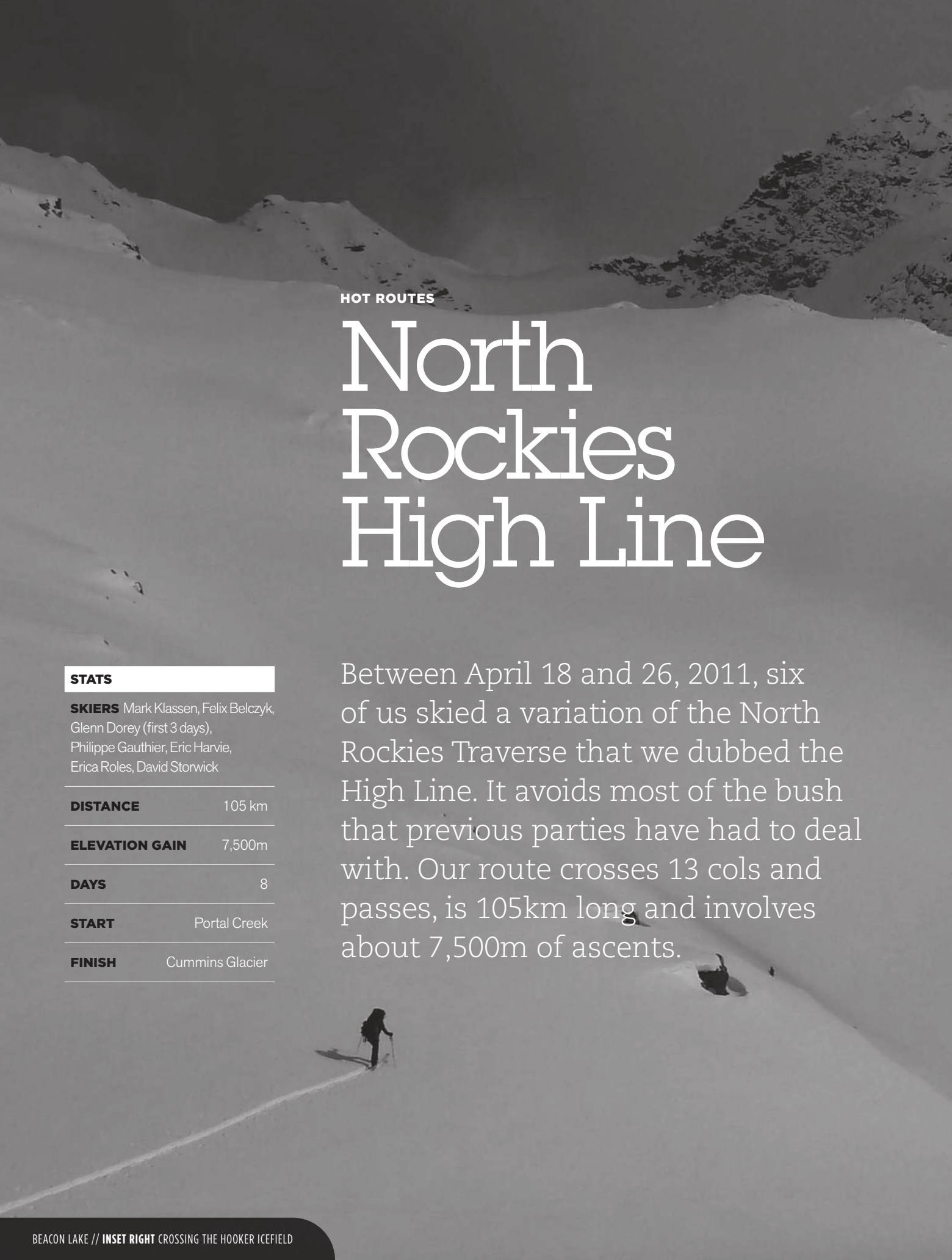
Ski resorts will list all their hotels, restaurants and how to buy a lift ticket online ahead of time. But enough of that…

The Canadian Avalanche Association has also been bitten by the WEB BUG and now we are supplying information for both the recreationist and the snow pro. Some of the information available at our site is our twice-weekly bulletin that gives current and up to date information on the snowpack and hazards of the major backcountry areas in Western Canada. You can even follow a link to fill in a report form describing your adventures that will help to contribute to the general understanding of the snow pack. The weather links here are of the highest grade and include live visible and infrared maps from the GOES 9 satellite plus a tutorial on how to use them.
Here's another place worth investigating: rec.skiing.alpine, rec.skiing.announcements, rec.skiing.backcountry—these groups are combed by on-snow experts from around the world. Post a query concerning equipment, what conditions are really like in a certain location, or anything else that inquiring minds need to know.. and you'll usually get a response within hours.

All in all the NET is a good thing, I just hope I find enough time to use it.

WAY BACK IN VOLUME 54 WINTER 1998, WE PUBLISHED THIS STORY ON THE EMERGENCE OF THE INTERNET. FORTY SIX ISSUES LATER, WE COULDN'T LIVE WITHOUT IT.





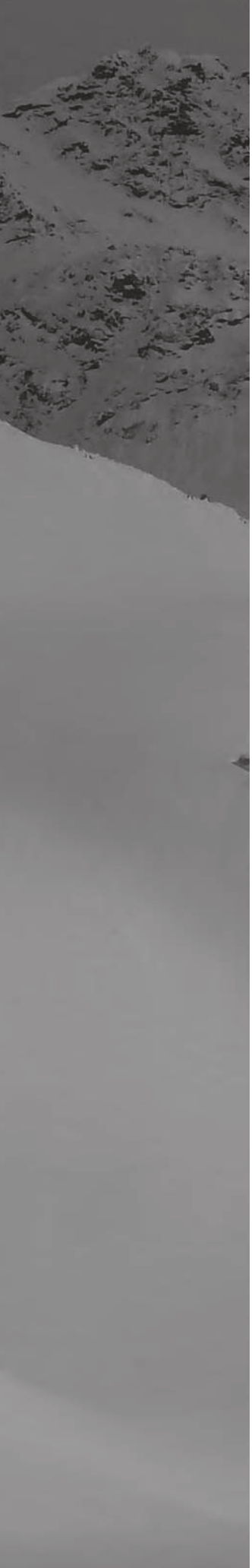
HOT ROUTES

North Rockies High Line

STATS	
SKIERS	Mark Klassen, Felix Belczyk, Glenn Dorey (first 3 days), Philippe Gauthier, Eric Harvie, Erica Roles, David Storwick
DISTANCE	105 km
ELEVATION GAIN	7,500m
DAYS	8
START	Portal Creek
FINISH	Cummins Glacier

Between April 18 and 26, 2011, six of us skied a variation of the North Rockies Traverse that we dubbed the High Line. It avoids most of the bush that previous parties have had to deal with. Our route crosses 13 cols and passes, is 105km long and involves about 7,500m of ascents.

BEACON LAKE // **INSET RIGHT** CROSSING THE HOOKER ICEFIELD



WE STARTED where many parties have before, going up Portal Creek near Marmot Basin ski area in Jasper. However, part way up the creek we made our first deviation off the regular route by crossing the east ridge of Maccarib Peak and then going over the Maccarib/Oldhorn Col. This avoids the long, flat route over Maccarib Pass and cuts several kilometres off the trip to the Wates-Gibson Hut.

After a night at the hut, we made our way south past the toe of the Fraser Glacier and down to the headwaters of Simon Creek. Here we left the normal route again and turned west into the valley between Blackrock and Elephas peaks, camping at treeline.

The next morning we climbed steeply over the col to the north of Blackrock and dropped down to treeline above the Fraser River. Unfortunately, on one of our descents Glenn took a tumble and hurt his knee. After some discussion, the sat phone came out and 1.5 hours later Glenn was on his way to Golden via Don McTighe of Alpine Helicopters. After this mishap we made our way to Beacon Lake and camped on the glacier above.

Day four was a big one. First we traversed a col above the Beacon Glacier and dropped into the Middle Whirlpool River through open forest. We climbed out of the valley and went over a pass east of Mallard Peak before descending into the main Whirlpool River, again through easy, open forest. Then it was a long flat hike up the river through meadows over historic Athabasca Pass and our food cache just on the west side (thanks to Mica Heli Skiing for placing the cache!).

We took it easy the next day and did a short ascent onto the Kane Glacier to set us up for crossing the Hooker Icefield. The crossing of the Hooker was perhaps the best day of ski touring I've ever had. It had a little bit of everything, from stellar weather to boot hiking to great views from a high icefield and then an 1,800 m descent to finish off.

We woke at 4:00 am and were moving out of our glacier camp by 6:30 with a temperature of -11°C and not a cloud in the sky. A fast trip up the glacier led to what we called S.Y.P Col. 100m of boot hiking up through bottomless snow and then a long traverse on better snow along a ledge got us to the col at 2,800 m. An easy drop onto the icefield below led to a glide and then a long, flattish ascent in the heat of the day around Mt Hooker.

From the Kane Glacier we had been following a route other parties have used in the past, but just past Mt Hooker we left it again. From the lowest point between Hooker and Mt Serenity we made a fantastic descent to the southwest. First down a glacier in an impressive basin with icefalls all around, then moraines and finally through open, mature forest to a hanging valley. From there we traversed down valley below avalanche paths and above a canyon before making a final descent through thicker forest to the Wood River at 1,000m. An easy wade across the river led to a camp on a gravel bar and a campfire to dry out beside.

The next ascent contained the only "character-building" bush of the trip. Directly across from our descent of the previous day, we climbed a drainage

WOOD RIVER CROSSING

ACCESS TO THE CLEMENCEAU ICEFIELD

KANE GLACIER CAMP

to where it steepens and cut left up a steep cut bank into thick forest. Bush saw in hand, we battled through this for about 150 vertical metres before it opened up and we followed a rib to treeline. Hugging the trimline of the forest below a huge basin, we made camp 1,000m above the wood at the last of the trees.

Another early wake-up started the final day. A ramp through moraines led to the glacier beside an impressive icefall; up the glacier through a broken section and then the last unknown col of the trip. It was easily gained on the north side and had a short but steep descent to the main Clemenceau Icefield on the south. From here we glided past the impressive peaks of the Clemenceau as they shed the clouds they had worn since the morning. A last ascent to the Tusk Glacier made for more gliding down that to the Cummins Glacier and our pick up with Alpine Helicopters.

Trip Outline

DAY 1 Portal Creek › Maccarrib Ridge › Oldhorn/ Maccarrib Col › Tonquin Valley › Wates-Gibson Hut

DAY 2 Fraser Glacier › Simon Creek Headwaters › Mastodon Moraines › Blackrock Valley

DAY 3 Blackrock Col › Fraser River headwaters › Beacon Lake › Beacon Glacier

DAY 4 Beacon Col › Middle Whirlpool River › Mallard Pass › Main Whirlpool River › Athabasca Pass (food cache)

DAY 5 Kane Glacier

DAY 6 SYP Col › Hooker Icefield › Hooker Glacier Descent › Wood River

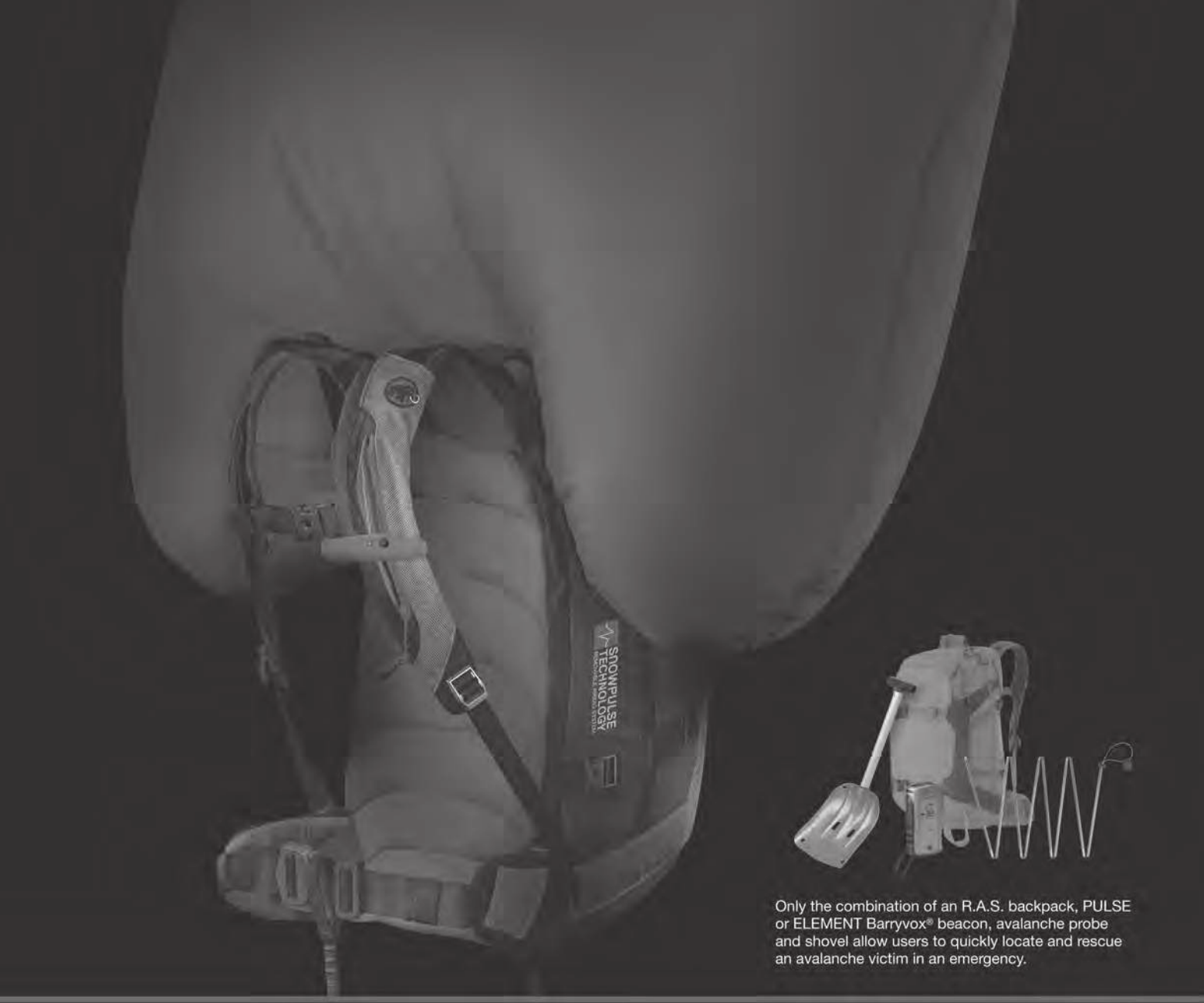
DAY 7 Bras Croche Basin

DAY 8 Bruce/Mallory Col › Clemenceau Icefield › Tusk Glacier › Cummins Glacier › heli pick-up

Mark Klassen is an ACMG/IFMGA certified mountain guide who has been backcountry skiing since 1984. He has worked as a heli-ski and ski touring guide, avalanche educator and avalanche forecaster.

This report was originally published on alpinism.com.

DO YOU HAVE A HOT ROUTE TO SHARE?
Email hotroutes@avalanche.ca



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Catching up with **CARDA**

THE CANADIAN AVALANCHE RESCUE DOG ASSOCIATION (CARDA) HAS BEEN INVOLVED IN THE TRAINING OF CIVILIAN VOLUNTEER AVALANCHE RESCUE DOG TEAMS SINCE ITS INCEPTION IN 1982.

Our teams certify to a province-wide standard set out by Emergency Management British Columbia and the RCMP. CARDA has always had strong support from the RCMP 'E' Division, who provide dog and handler resources at the annual training courses and ensure the consistency of a province-wide avalanche rescue dog standard. The Police Dog Program Manager for BC oversees the certification process and our teams must recertify annually. A strength of CARDA is that we do not internally certify our dog and handler teams.

In January, Whistler Blackcomb played host to the annual weeklong CARDA winter training course. This ski hill-based course brings together new dog and handler teams vying for 'team in training' status, teams attempting to certify as avalanche rescue dog teams for the first time, and seasoned handlers working on more advanced skills. Out-of-country attendees came from Alaska, California and Wyoming.

The Whistler area is a perfect venue—there is great gondola access to alpine areas for the beginner teams. Teams occupy a training site for the week and work through a progression of simple hide and seek drills. Focus is placed on building the dog's drive and imprinting basic handler skills on the new handlers.

Intermediate teams show up to the course ready to validate for the first time. Intermediate teams are assigned an instructor team, consisting of an RCMP dog handler in the avalanche profile and a civilian CARDA instructor, who help meet the validation standard. Four new dog and handler teams were validated in January.

The advanced group was able to take full advantage of the Whistler Blackcomb terrain. Highlights included working on our ski resort travel skills, a night search at the top of Blackcomb and a full-scale, inter-agency avalanche rescue with the Whistler ski patrol.

CARDA also puts on an advanced course in the spring. Revelstoke Mountain Resort hosted this year's course at the end of March. In the spring course, advanced dog teams complete their annual recertification. Teams then participate in complex search scenarios, including large, multi-dog searches. A big focus is glacier travel and rope work with the dogs—always good for comedy!

Our organization is trying to keep pace with the evolving field of Avalanche Search and Rescue (AvSAR) in Canada. There is increased demand in our training programs; we now have 35 validated teams in BC, Alberta and the Yukon. Emergency Management BC updated its AvSAR policy last winter: a SAR group must now activate an avalanche rescue dog team when responding to any avalanche call out in BC. This better integrates CARDA into the provincial SAR system, and ensures increased safety for SAR Responders. Most operations in BC have adopted the ICAR wanding standard as an AvSAR best practice, which has greatly increased communication between first responders and has helped our teams better understand the search problem when arriving at an avalanche event. Finally, the universal adoption of the Incident Command System by SAR providers has influenced several commercial operations to follow suit. Using a single system for command and control will help streamline multi-agency AvSAR response in the future.

CARDA continues to evolve. We are closely watching the development of several new AvSAR organizations. The Fernie-based Canadian Avalanche Rescue Cat Association (CARCA) claims its animals have the potential to outperform our trusted K-9s. Also stay tuned for developments from the Kicking Horse Mountain Resort safety program. They have just founded CARBA and are cautiously optimistic that once rustled out of his den Boo the Grizzly Bear will be capable of a "live" find.

Kyle Hale is the President of CARDA and is the Emergency Program Coordinator for Golden and surrounding area.

research &education

WREN McELROY

Putting **Avalanche Transceivers** to the Test

AVALANCHE TRANSCEIVERS ARE ESSENTIAL FOR ALL THOSE WHO TRAVEL IN WINTER BACKCOUNTRY TERRAIN. BECAUSE OF THE VAST NUMBER OF CHOICES, MANY WINTER TRAVELERS QUESTION WHICH TRANSCEIVER SUITS THEIR NEEDS BEST. WHY IS IT BETTER TO HAVE MORE ANTENNAS? WHAT IS THE ADVANTAGE OF MARKING FUNCTIONS? WHAT ARE TRANSCEIVERS' ACCURACIES WHEN PINPOINTING? THESE WERE FEW QUESTIONS WE TRIED TO ANSWER.

Marek Biskupic, Milan Lizuch, Jozef Richnavský, Filip Kyzek, Avalanche Prevention Centre of Mountain Rescue Service, Slovakia

Pawel Chrustek of the Anna Pasek Foundation, Poland

ON APRIL 18-20, 2011, an independent avalanche transceiver test organized by the Avalanche Prevention Centre of Mountain Rescue Service was held in Jasná, Slovakia. The test participants represented mountain rescue organizations from Slovakia, Poland and Czech Republic, the Anna Pasek Foundation, international specialists and academics, and UIAGM guides from Slovakia and Czech Republic. Everyone was able to keep an eye on the each others' hands.

The main goal of the test was to evaluate the transceivers' range in real conditions and to test functionality. The methodology was based on a 2008 German Alpine Club test. Some additional measurements were performed to evaluate the possible influence of rescue walkie talkies (Motorola GP380 with frequency 170,075MHz) on the transmitting transceivers. During the multiple burial test, a GPS with submeter accuracy was used to measure the path used to find the burials. Fourteen types of transceivers were tested. For the test purposes, 150 transceivers were collected from five manufacturers. We had ten of each transceiver, from which we randomly chose five to test (unless otherwise noted).

Over 3,500 measurements were done. According to the IKAR- CISA Recommendation REC L 0009, avalanche rescue is divided into four phases: 1. signal search, 2. coarse search, 3. fine search, and 4. pinpointing. To cover all the phases, the following parameters were tested for each device:

RANGE

The distance from transmitting devices was measured where the first beep and stable signal was reached. The transmitting transceiver was buried in three different ways to simulate three positions of the transmitting antenna relative to the searching transceiver: axial position, perpendicular position and vertical position.

DIRECTION

The deviation from direct course was measured. The transmitting transceiver was buried in perpendicular position and so-called directional index was implemented to compare the various devices.
Di – directional index: Di = d/Ry, where d = deviation from direct path and Ry = range (transmitting antenna in perpendicular position).

ACCURACY

In the nearby range (3m), the distance between the transmitting transceiver buried 0.5m and 2m deep and the searching transceiver was measured. The distance shown on the searching transceiver was compared with real distance. Only devices with displays were tested.

MULTIPLE BURIALS
The track length necessary to locate the burials was measured with submeter accuracy GPS, and the data was post processed to get the best possible accuracy. Two scenarios were adopted: one with three burials and the other with four nearby burials.

ADDITIONAL TESTING
(smart phones and walkie talkies)
The aim of the test was to find out if a smart phone or walkie talkie placed by the transmitting transceiver influenced the range of the searching transceivers. The constant distance was 20m, and distance with a walkie talkie both on and off was recorded.

RESULTS
RANGE MEASUREMENTS
In the case when transmitting antenna was in axial position, all transceivers reached their maximum possible range (Fig. 2). Analogue transceivers (Mammut Barryvox VS 68, Ortovox F1) performed well with ranges between 60m and 70m.

When the transmitting transceiver was moved to unfavorable burial position (e.g. transmitting antenna is in perpendicular or vertical position to the searching transceiver) there is considerable decrease in the range of all the transceivers.

DIRECTION MEASUREMENTS
In the coarse search of avalanche rescue, it is important to search effectively in the proper direction to locate the buried victim. The directional index (Di) was used to assess the directional accuracy. The lower the Di, the better the trajectory.

ACCURACY
Accuracy an important factor when pinpointing. Accuracy generally decreases with burial depth. There is clear connection between the number of antennas and accuracy of the devices. With some exceptions, three antenna transceivers performed well, displaying distances close to the reality. Drawbacks of two and one antenna transceivers are two characteristic peaks when showing distance.

MULTIPLE BURIALS
Only the transceivers with an option to mark multiple burials or transceivers with SP mode were tested. No transceivers performed without any issues. In a three burial scenario, four transceivers performed well. When searching for four burials, two transceivers out of five had good results. It is worth mentioning that no transceiver was excellent; there are still many problems to solve for multiple burials. The results from GPS measurements should be considered with care because they are quite difficult to interpret. Though each tester was either a professional mountain guide or rescuer, various approaches were taken for the multiple burial searches. Therefore, distances cannot be considered a key factor for determining the pros and cons of every transceiver.

ADDITIONAL TESTING
(smartphones and walkie talkies)
In most cases the influence of walkie talkies or smartphones on the transmitting signal is negligible. In some cases there is a slight influence, but the displayed distance increased or decreased not more than 16%. Devices with a magnetic switch are, in specific positions, susceptible to accidentally switching from transmitting mode to off mode.

Beacons Tested


AVRA 3 AXES


AVRA EVO


BCA TRACKER 2


BCA TRACKER DTS


BARRYVOX VS 68


MAMMUT BARRYVOX PULSE


MAMMUT BARRYVOX OPTO 3000


ORTOVOX PATROLLER


ORTOVOX S1


ORTOVOX 3+


ORTOVOX F1


PIEPS DSP V5.0 // 6.2


PIEPS FREERIDE

Conclusion

THE AIM OF THE TEST WAS NOT TO FIND A WINNER OR LOSER.

Some transceivers have excellent range but are less precise, while others are offer accuracy when pinpointing but have some troubles with multiple burials. It is necessary to know one's own transceiver well and be aware of its drawbacks. Range measurements show that some transceivers do not meet recommended search strip width criteria when the transmitting antenna is in an unfavourable position, so it is recommended to adapt the search strategy to the known minimal range of the transceiver.

In most cases, the ranges reached in real conditions did not correspond to the manufacturers' listed ranges; those ranges are rarely reached. When the transmitting antenna was in axial position, the difference was between 5% and 45% less than the manufacturers' listed range.

The effect of walkie talkie or smartphone placed near the transmitting transceiver on the range of the searching transceiver is negligible. However, it is not recommended to carry a walkie talkie, smartphone or any electronic close to a transmitting transceiver. Electronic devices with strong magnet may possibly switch the transmitting device from send mode to off mode when placed in specific and tight proximity to a transmitting transceiver.

As more devices become available in coming years, their functionality should be evaluated. We plan to repeat the test with new device coming to the markets this year.

For more information visit
http://laviny.sk/index.hp?menu=clanky&id=282

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ABOUT THE INSTITUTION

Avalanche Prevention Centre of the Mountain Rescue Service in Slovakia was founded in 1972 after several large avalanche incidents. The centre publishes avalanche bulletins, operates the network of automatic weather stations in mountains of Slovakia, trains mountain rescuers, organizes avalanche awareness courses for the public, caries out avalanche mapping, hazard zoning and other activities in the area of avalanche prevention and safety.

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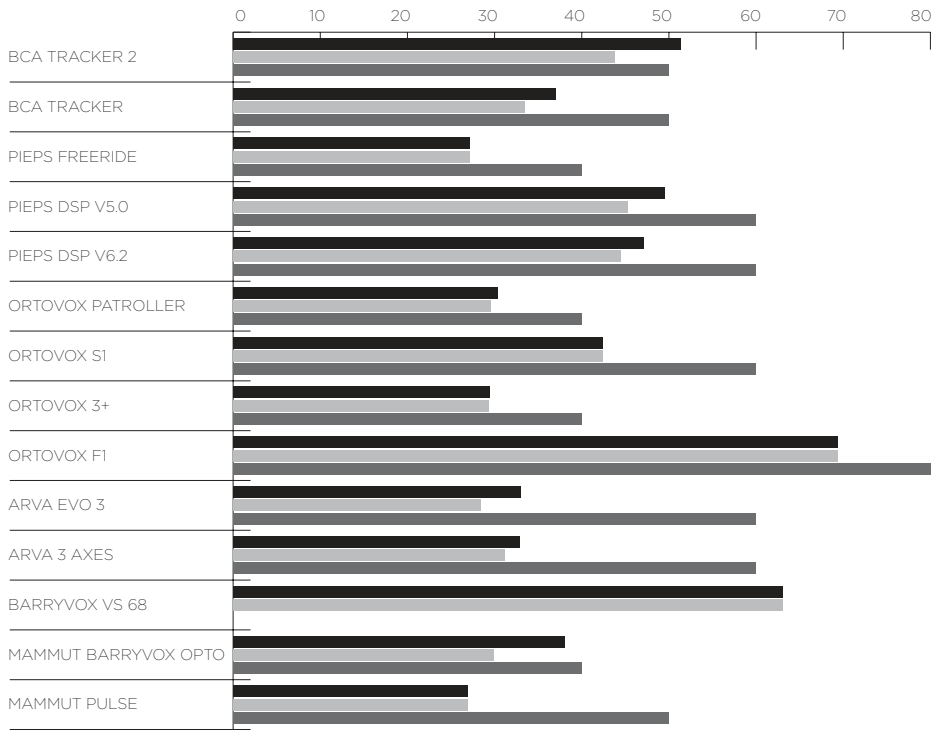
Facts & Figures

MEASURED RANGE COMPARED TO RANGE ACCORDING TO MANUFACTURER



FIRST BEEP
STABLE SIGNAL
MANUFACTURER RANGE

DIRECTIONAL DEVIATION AND INDEXES OF THE TRNASCEIVERS WHEN TRANSMITTING ANTENNA IS IN PERPENDICULAR MODE

BEACON	DIRECTIONAL DEVIATION (M)	RANGE Y (M)	DIRECTIONAL INDEX
BCA TRACKER 2	6.6	23.66	0.28
BCA TRACKER	6.22	17.46	0.36
PIEPS FREERIDE	3.3	7.6	0.4
PIEPS DSP V 5.0	10.68	38.2	0.28
PIEPS DSP V 6.2	8.1	37.35	0.22
ORTOVOX PATROLLER	4.98	17.48	0.28
ORTOVOX S1	9.56	28.32	0.34
ORTOVOX 3+	4.8	21.88	0.22
ARVA EVO 3	8.2	27.28	0.3
ARVA 3 AXES	8.85	29.3	0.3
MAMMUT BARRYVOX OPTO 3000	2.68	8.96	0.3
MAMMUT PULSE	7.8	23.64	0.33

More Information

To view other findings from the test and view a short video, please visit: **http://laviny.sk/index.php?menu=clanky&id=282**

Research to improve forecasting for **natural deep slab avalanches**

Mike Conlan and Bruce Jamieson // Photos by Mike Conlan

Thank You

We would like to thank the operations that have currently helped in this research and all the operations that will help us in the future to aid in improving forecasting for deep slab avalanches. For financial support of this research we would like to thank:

- Natural Sciences and Engineering Research Council of Canada
- HeliCat Canada
- Canadian Avalanche Association
- Mike Wiegele Helicopter Skiing
- Canada West Ski Areas Association
- Parks Canada
- Association of Canadian Mountain Guides
- Backcountry Lodges of British Columbia Association
- Canadian Ski Guide Association
- Teck Resources Limited

DEEP SLAB AVALANCHES ARE A MAJOR CONCERN IN MOUNTAINOUS TERRAIN DUE TO THEIR DESTRUCTIVE POWER AND OFTEN UNPREDICTABLE RELEASE. A MAGNITUDE OF FACTORS MUST EXIST FOR A LARGE DEEP SLAB AVALANCHE TO FORM, INCLUDING A WEAK INTERNAL LAYER OR INTERFACE IN THE SNOWPACK, DEEP SNOW THAT OVERLIES THE WEAKNESS, A NATURAL TRIGGER THAT ULTIMATELY CAUSES THE WEAK LAYER TO FAIL, AND A SNOWPACK AND TERRAIN THAT ALLOWS THE FAILURE TO PROPAGATE OVER A LARGE AREA.

THEY ARE often found in alpine and subalpine terrain, usually on an aspect prone to windblown snow deposition or high solar radiation, but some hard to forecast ones do not follow this pattern. The persistent weaknesses that release deep slab avalanches are formed well in advance of much of the overlying slab, and continually evolve with time due to temperature, vapour pressure, and mass loading variations. The weakness is often for a layer of faceted crystals above or below a crust or buried surface hoar.

The definition of a deep slab avalanche varies. For the purpose of this research, it is defined as an avalanche with an average crown of at least 80cm and one that failed on a weak layer at least two weeks old. This definition should eliminate avalanches from recent storm snow.

Forecasting deep slab avalanches is difficult because of the many variables involved, including seasonal weather, recent weather prior to failure, terrain, and slab load and strength characteristics. Previous research has typically relied on database studies, as most deep slab avalanches are not analyzed in great detail using techniques such as fracture line profiles and snowpack tests to assess the properties of the slab and weak layer. The lack of data available on such avalanches produces a difficult task in determining correlations to improve our forecasting abilities.

We are trying to determine which snowpack properties in release zones are associated with deep slab avalanches and the importance of spatial variability. The importance of preceding weather is also tied into the analysis to determine correlations between weather and the snowpack.

FIELD DATA COLLECTION

Accessing deep slab avalanche locations soon after they release is the primary method of obtaining data to provide insight into the cause of failure. Naturally, this limits the amount of locations due to accessibility and safety concerns. Terrain characteristics, measurements along the crown, and weather data are obtained from safely accessible avalanche sites to determine correlations between events.

Travel to the start zone provides important information such as avalanche size, aspect, terrain characteristics, and variability of the crown thickness. Once at the avalanche, a snow pit is dug at a representative location of the overall crown. The pit is used to identify the failure layer, analyze the layers directly above and below, conduct density measurements of the snow above the failure layer, and perform multiple deep tap tests (DTs) and propagation saw tests (PSTs). If time and safe travel allow, multiple profiles are conducted along the crown and flank to assess spatial variability. We also note

variations in crown and bed surface properties by obtaining crown measurements in the field and with photos and notes. Further profile locations are typically chosen to duplicate the primary profile as well as to determine variation of aspect and slope angle.

Preceding weather leading to the event is obtained from the nearest weather station. Although weather stations are not typically available at the same elevation or aspect of the avalanche, trends observed at the weather stations can be related to the locations of interest. Dave Tracz of the University of Calgary's Applied Snow and Avalanche Research program is analyzing correlations between weather station data and nearby deep slab avalanches. Further insight regarding the path history is gathered from the operation's guides and employees.

THE FUTURE

Once the data is compiled over three winters, correlations between the weak layer strength, loading, and weather data will be assessed to find correlations between all observed deep slab avalanches. The ultimate goal of the research is to create a decision support tool that is based on the assessment of key factors leading to deep slab avalanches to aid forecasters in determining whether a deep slab avalanche may occur. The tool will require the user to answer key questions about the snowpack structure and weather information to determine if deep slab avalanches are of concern. Such a tool will be a simple and straightforward approach that might be helpful for avalanche forecasters to reduce the frequency of unexpected deep slab avalanches.

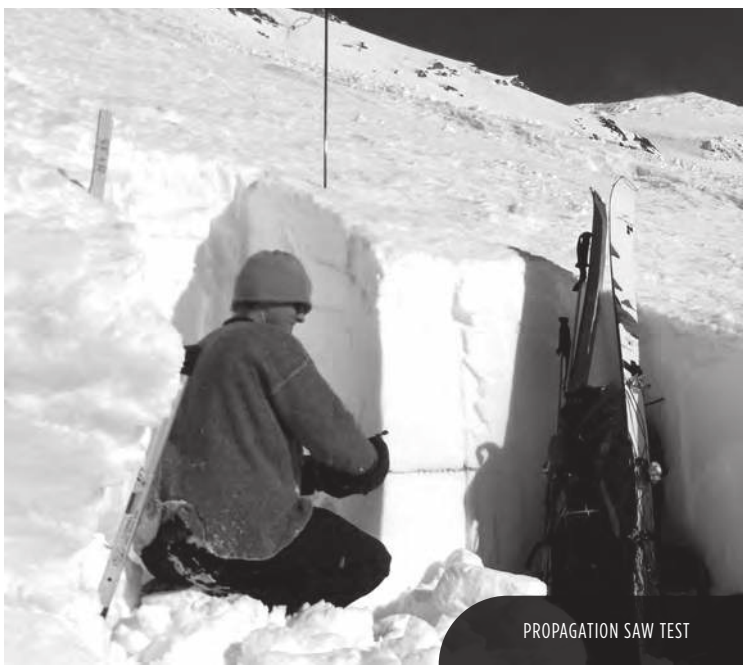
CASE STUDY: CMH GALENA, FEBRUARY 2012

Numerous natural deep slab avalanches were observed in the tenure of CMH Galena in early February 2012. They were mostly on southern aspects at elevations above 2,200m in the alpine and typically started on slopes between 35° and 45°. A warming trend was observed during the avalanches, with extended clear skies for the first time in over a month, and near-zero afternoon alpine temperatures.

The start zone of one of the avalanches was accessed two days after it released to obtain field data, and four profiles were observed along the crown. The failure layer was assessed in each profile, including grain type and size, weak layer depth from surface, two DTs, two PSTs, and a density measurement of the snowpack above the weak layer. Two profiles were observed on a similar aspect and the other two profiles were observed near the thickest and a thin section of the crown. All measurements and tests were performed at least one metre upslope of the crown.

The failure layer was determined to be facets below a crust buried 150cm in a 270cm deep snowpack on a 35° slope. The crown depth varied between approximately 30cm and 150cm, with thin spots found near rocks. The DTs indicate that spatial

PROFILES AT CMH GALENA


PROPAGATION SAW TEST


MULTIPLE CROWNS VISIBLE

variation of the strength of the weak layer was limited at this site. PST results indicate less propagation propensity within the weak layer near the thin section of the crown compared to a deeper snowpack (50% cut length at thick sections and 60% at thin sections), perhaps due to temperature variations more easily penetrating thin sections, allowing for refreezing of free water. Loading varied significantly due to a variable crown thickness, ranging from 65mm water equivalent at the thin portion of the crown to 340mm water equivalent at the thickest portion of the crown.

Preceding weather indicated a warming and clearing trend leading up to the event. Being a southwest face, the upper snowpack was heated throughout the day, which was apparent with a well-formed sun-crust by the third day and pin-balling snow from the slopes above. We speculate that that the solar warming impacted the weak layer by reducing its strength in shallow areas of the snowpack. The warming caused free-water and the weakening of bonds until the slab released on the facets below the crust. With further data gathering, correlations of preceding weather, the results of the DTs and PSTs, and loading pattern will be identified between this event and others. Other important terrain features such as elevation and aspect will be important for correlations, as a sunny aspect behaves quite differently than a shady aspect, as does a windward slope to a leeward slope.

LOOKING AHEAD

The help from operations across western Canada is imperative for a positive outcome for this research. Field observations will be continued over the remainder of this winter as well as during the next two winters to obtain as many observations at deep slab avalanches as possible. Human-triggered deep slab avalanches will also be analyzed and analyzed in a similar manner.

SNOW PROFILE INFORMATION AND DEEP TAP TEST AND PROPAGATION SAW TEST RESULTS

		PROFILE 1	PROFILE 2	PROFILE 3	PROFILE 4
DEPTH TO WEAK LAYER		100	140	73	40
PERSISTENT WEAK LAYER	ABOVE	(K)			
	1 CM THICK	1 AND (P-)			
	BELOW LAYER	0.5 (P)			
DT RESULTS		21 SP	27 SP	21SP	21SP
		21SP	21SP	21SP	22SP
PST RESULTS		45/90 END	79/158 END	65/107 END	55/95 END
		50/103 END	67/140 END	67/140 END	63/108 END

The Avalanche Journal wants you!

WE'RE ACCEPTING submissions for upcoming issues of *The Avalanche Journal*. We welcome articles relating to the professional avalanche industry or public avalanche safety, teaching tips, research papers, avalanche accounts, book reviews, historical avalanches, gear reviews, hot routes, global updates, event listings, interviews, letters to the editor, humorous stories, and anything else interesting or relevant to those involved with avalanches. We are also seeking winter mountain photography: avalanches, terrain, touring, skiing, snowboarding, sledding, backcountry recreation or avalanche awareness activities.

Please email Managing Editor Karilyn Kempton at editor@avalanche.ca with your ideas and submissions.

The Avalanche Journal is published three times per year in April, September and December.

UPCOMING DEADLINES:
July 1 (fall issue)
October 1 (winter issue)
February 1 (spring issue)

Gear in **Review**

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Pablo Arsennault is a senior patroller and AST instructor at Castle Mountain Resort. He also coordinates the wilderness programs for Enviros Wilderness School.

WE TESTED the Arc'teryx Alpha SL at Castle Mountain Resort in Alberta, in some of the windier, rockier, stumpier conditions in the west. We worked the Arc'teryx ALPHA SL jacket as much as we could by skiing it, touring it, sledding it, lift-evacing it and ANFOing it.

At and below treeline we felt that the ALPHA SL performed well, lapping skin tracks or cruising around the area digging holes. It breathed well on the way up and kept us dry from the inside out at higher output. It did require the help of other layers when we stopped moving on colder days or were on a snowmobile at speed, but it has sleek cuffs and fits well for layering above and below.

CMR patrol agreed that the ALPHA SL is a 'best in class' performer and that it will likely outlast most of its peers in the lightweight category, making it a great jacket for high-use professionals and those hoping to get an extra year or two out of their light gear.

PROS

- GORE-TEX® PacLite® fabric: feels space-age light and free-ski durable
- Low-profile design helmet compatible
- Speed Hood® adjusts easily
- Pockets are harness-friendly
- Welded seams and waterproof zippers
- Very packable
- Extremely lightweight

CONS

- Less weatherproof than two- or three-ply shells
- Only two pockets, though they are well-positioned

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Transitions

DEEDEE ERESMAN
RECEPTION AND SALES

DeeDee Eresman is the newest addition the CAA/CAC team, and we welcome her into the Reception and Sales role. Born in Guatemala, DeeDee spent just over two decades in Medicine Hat, Alberta and moved to Revelstoke last fall with her husband. She looks forward to being part of a team "that is such an important part of [the Revelstoke] community."

She admits that she was a bit nervous about the big change and leaving the city, but she quickly learned to love Revelstoke and its beauty. "I don't see myself missing the prairies anytime soon," she laughs.

She has spent the past seven years working in administrative support, most recently for the Government of Alberta. DeeDee and her family love camping, boating, and spending summers outdoors, and she looks forward to her first summer in Revelstoke.

JOE OBAD
CAA EXECUTIVE DIRECTOR

Joe Obad recently joined the CAA as Executive Director. He calls his new position a "fascinating mix of opportunities and challenges," and looks forward to using his skills in strategy, facilitating and advocacy to engage in those challenges. The passion and commitment in the avalanche community "makes me exited to help foster the vision of our members," Joe says.

Joe was born in Calgary to Croatian immigrant parents, so he's a westerner "but has always seen the world as a lot bigger than that." Joe is now based in Revelstoke but jokes that he's coming to a couch near you as he meets as many CAA members as possible.

Joe has spent the last decade working in Alberta's not-for-profit environmental sector, both as staff and board member. Prior to that he worked in telecommunications and IT, so he believes that focusing on the human dimension helps the technical side of work.

Joe started backcountry skiing in his early 20s and calls it a lifelong journey. He's also hooked on basketball and making oddball gadgets.

STUART SMITH
CAA INTERIM OPERATIONS MANAGER

Stuart Smith joins the CAA as Interim Operations Manager from January 2012-13.

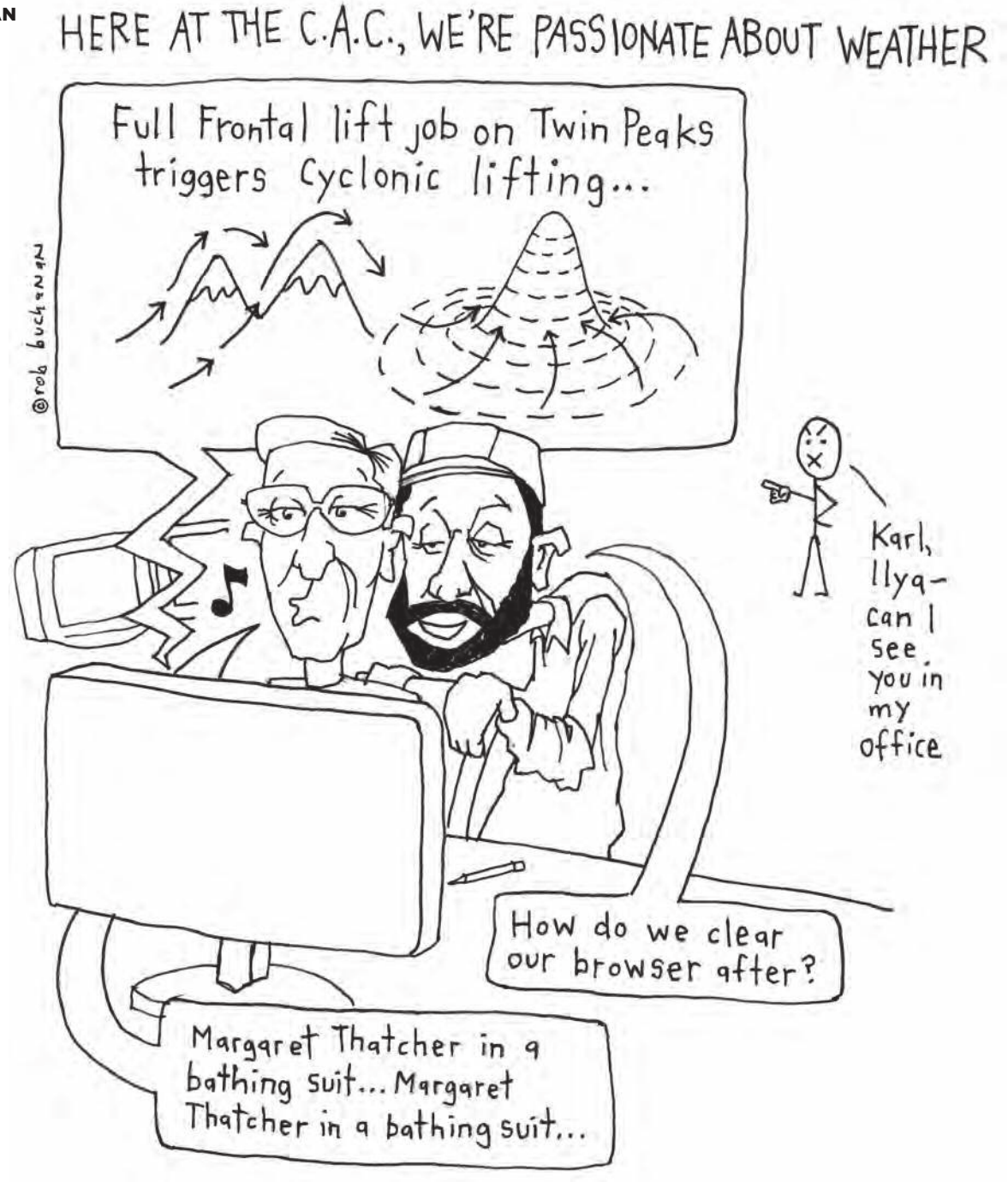
His career has mostly been spent working for Scotland's leading footwear retailer, including as managing director of a workforce of 200+. His extensive operations management, project management and budgeting experience will help him provide continuity of CAA services.

Stuart aims to maintain and build on the work that's been done administering the organization. He is the InfoEx point of contact, and welcomes all feedback from CAA membership: ssmith@avalanche.ca.

Stuart moved from Scotland to Revelstoke three years ago for the small-town lifestyle. He completed the Adventure Guide Diploma at Thompson Rivers University and has worked as a kayak guide. He spent 25 years skiing and ski touring in the European Alps and is happy to explore Canadian mountains. Stuart is also an avid squash player and road cyclist.

Flakes

ROB BUCHANAN



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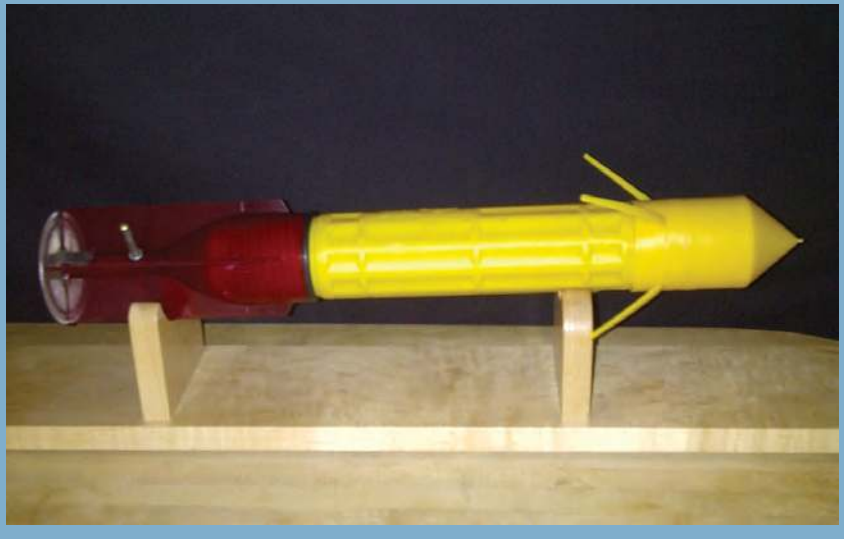

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