



Kootenay Mountaineer

The KMC Newsletter November/ December 2005 Issue 6 Next deadline: Jan.21/06

The Federation of Mountain Clubs *Working on your behalf*

The Federation of Mountain Clubs (FMC) is a democratic, grassroots organization dedicated to the conservation of and access to British Columbia's wilderness and mountain areas. As our name indicates we are a federation of outdoor clubs and our membership is about 3500 from clubs around the province. Our membership is comprised of a diverse group of non-mechanized mountain recreation users including hikers, climbers, mountaineers, skiers, snowshoers, kayakers, canoers and mountain bikers who all share an interest in the protection and preservation of the mountain/wilderness environment. The FMC also has several individual members who are not affiliated with any club but share our mission and accomplishments. Membership is open to any club or individual that supports our mission. In addition to the work that FMC does on their behalf, membership benefits include a subscription to the FMC newsletter *Cloudburst* and access to an inexpensive Third-Party Liability insurance program.

The FMC mandate is to foster and promote the non-motorized activities of the membership and the general public through leadership, advocacy and education". The FMC recognizes hikers, mountaineers and ski-tourers etc. to be a traditional user group and represents their rights province-wide to freely access and enjoy a quality experience in the mountains and forests of British Columbia. Our members believe that the enjoyment of these pursuits in an unspoiled environment is a vital component to the quality of life in British Columbia.

The FMC fulfills its mandate with a comprehensive approach to mountain recreation and conservation by:

- Participating in provincial land use decision processes.
- Working to positively change (and in some cases enhance) government agency policies so that non-mechanized outdoor recreation opportunities are recognized and protected.
- Representing wilderness as a legitimate land use and a resource of identifiable value to society.
- Advocating new parks and wilderness resources, and working to maintain the integrity of existing parks and wilderness resources.
- Advocating for continued access to existing recreational resources.
- Building, maintaining and protecting hiking and mountain access trails.
- Promoting hiking, rock climbing, mountaineering, ski touring and other non-mechanized mountain activities.
- Educating the public on conservation issues, related to outdoor recreation.
- Educating its members and the public on mountain and backcountry safety and working with member clubs to address risk management issues.
- Encouraging new membership in our member clubs.

Acting under the policy of "talk, understand and persuade", rather than "confront and force", the FMC advocates for the interests of its member groups. Much of this work is done through our two main committees: Trails Committee, and the Recreation and Conservation Committee. With the exception of the Executive Director who helps coordinate Committee work and advocates on their behalf, the work on these programs is done by volunteers.

The FMC was founded in 1971, based on a predecessor organization called the Mountain Access Committee. Since this time the FMC has had many success stories working on behalf of our members and the public at large. If you visit our website (www.mountainclubs.bc.ca) you can view a list of some of our successes and accomplishments we have had through the years categorized by geographical area. Some highlights include the popular Adopt a Trail program and resolution of several land use issues through participation in various planning processes.

We continue to work towards success on new issues and projects. Much of our work these days tends to be access related where we are competing with other users of the land base or in some cases a lack of investment in existing infrastructure. At the core of these projects, issues and successes (and often the grinding work that goes unnoticed) is the countless hours of time from dedicated volunteers from across the province. Without these volunteers the FMC would not exist. Through our committees, club advocates and general membership we have much to hope for on the trail ahead.

Submitted by Evan Loveless, FMCBC Director.

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Kootenay Mountaineering Club Joins The Federation Of Mountain Clubs Of British Columbia.

“With the B.C. government’s passion for exploiting the province’s land base, most of us realize that a concerted effort to boost membership of the Federation Of Mountain Clubs of B.C. would raise our funding level and hopefully improve our lobbying efforts in Victoria to stop or at least reduce this nonsense.” Brian Wood

The FMCBC has a full time executive director named Evan Loveless. I asked Evan about the duties and functions of this position.

“I do all the organization administrative and official communication including the website and the Cloudburst. Then I do most work on behalf of, or supporting the Committees (Rec and Con, and Trails) including writing letters and govt.

lobbying, as well as address regional issues. I also attend meetings, workshops and planning sessions on behalf of the FMC.”

I asked about interclub coordination and whether clubs formally go to the FMC first and then out to other clubs on soliciting info/assistance regarding common issues? How does it work?

“Most of the work is done through the committees but this can tend to be Vancouver centric. So I tend to deal more with regional issues. For instance I have a meeting coming up with Minister Pat Bell (Lands and Agriculture) to talk about an issue in Smithers regarding snowmobiles and the LRMP. Some issues although regional, also impact the general membership either directly or indirectly by setting precedents (such as the Jumbo development). If a club brings forward an issue I would generally air it through the appropriate committee and take appropriate action. If the issue retains more to policy or is provincial in nature etc. then I would take it to the Board for approval. The FMC is the recognized organization representing non-motorized outdoor recreation and we are able to bend the ear of government. As a club sometimes it is better to use a club name when it is a local issue. But when needed, as a member, you can use the FMC name (and letterhead) when you need the extra muscle. The only criterion is that the FMC need to approve the position when using the FMC name (which is usually not a problem).

We do have two listservs; one is the general FMC listserv, which we use for general info and notices. I also send out the FMC bulletin on this listserv; the other is the Recreation and Conservation listserv that is used more for issues. We are also developing a Sharepoint site to deal with FMC/Club issues.

Incidents and Liability? That Is The Other Question.

The KMC has been tossing liability, waivers, and insurance about for several years now. After the past year of searching

out our options it was decided that the best way to deal with the issue is to purchase liability insurance. The best coverage the club could obtain was found to be with the FMCBC. At the November 18 AGM it was decided by the membership that we purchase liability insurance for the club. Hopefully the following will provide some insight into the issue.

Insurance or no insurance, clubs who provide a service such as the KMC all wrestle with this one. Many clubs have a larger Provincial organization which obtains third party liability insurance on behalf of the clubs, so for example Canoe BC obtains insurance for all of its clubs such as the Columbia Canoe Club; Cross Country BC has insurance for all its Cross Country Ski Clubs. The FMCBC obtains insurance for its clubs. The insurance is liability insurance in the event a claim is launched against the club. In many cases, a lawsuit is launched for negligence as the injury resulted in costs that the person can't pay for themselves, so they are looking for some one else to pay for the additional costs. As an individual, we may want to carry some insurance to cover these events.

One of the words you hear in this discussion is "due diligence" (what you do relative to the norm in a similar situation). What this means is that a club or organization has to have a process for coordinators and those who attend trips, a means to evaluate the difficulty of the trips, a trip difficulty rating, what to do in the event of an emergency and a rescue plan, etc. And of course, the signing of waivers. A waiver is a means of the person attending the trip to acknowledge that they are assuming risk and acknowledging that they won't launch a claim. Keep in mind that waivers and insurance do not prevent a court action from being launched, however if a claim is launched, the waiver is introduced as evidence (the person signing the waiver assumed a certain level of risk) and the person launching the claim is wanting to prove there was negligence on the part of the club.

*My Thanks to Fred Thiessen who supplied much of this information.
Steven Miros*

“Real generosity towards the future lies in giving all to the present” Albert Camus

Mountaineering Insurance

Some might say that the idea of insuring the Kootenay Mountaineering Club for third party liability is blasphemous. Mountaineering has no place for insurance! I actually think that many in the KMC would actually agree with this. But times have changed and as a club we should occasionally change with them. We voted to purchase insurance as a club at the AGM. Even if we didn't like it. In a litigious society such as the one we live in today, anything/everything goes. That's probably why nothing is "normal" anymore... Yes, nothing!

We all know that mountaineering has numerous risk and hazards associated with it. It is however becoming increasingly obvious that there are varying degrees in our "knowing". Nothing personal, it's just that everyone's perception, understanding etc. of things are different. Considerably more so than just a few years ago. This is probably a part of the "nothing's normal" noted above.

The understanding and acceptance of exposure to the inherent risks associated with mountaineering is an important part of the KMC waiver. Liability waivers such as the KMC's go a long way in reducing liability in most instances. But, you can't eliminate all the bad things that might happen, therefore, the real issue becomes how do we further reduce the chances of a claim being made against the club (and its members) and liability.

A solid risk management plan that pays attention to training and screening of participants, and, yes, trip leaders as well, actually goes the farthest in preventing inappropriate exposure to the risks and hazards of mountaineering. Everyone does their best in the interests of preventing incidents. As members of the KMC our duty is one of reasonable care. i.e exposing our participants only to activities whose inherent risks they and we, together, can reasonably manage. This is the Common Adventure concept. This is traditional KMC mountaineering. But, unfortunately it must be written down nowadays for people to follow. How do you write down habitual things? How do you capture their essence? How do you apprentice a "mountaineer"? How do you ensure consistency that the resulting plans are followed? This can be problematic in the reality of KMC outings. Hence the insurance.

It is hoped that these steps will go a long way in increasing people's participation in the club outings thereby enhancing the KMC. That's one of the two things I think the club's all about. Conservation of our "special" areas is the other!

Steven Miros

Federation of Mountain Clubs of B.C. Insurance

Here are some points on the actual coverage. The people covered include all club members and the club itself. E.g., let's say there was a KMC climbing trip and Jack is injured by a falling rock. (It doesn't matter whether Jack is a KMC member or not.) Jack launches lawsuits against the following people:

1. Jill, a trip participant and KMC member, who knocked the rock off.
2. Sam, a trip participant and a guest on the trip; i.e. a non-KMC member, who inadvertently deflected the rock on to Jack.
3. John, the trip leader/organizer and KMC member, who according to Jack picked a bad route.
4. Betty, Doug, Steven, Alice, and Don, all whom are KMC Directors (and members) and none of whom were actually on the trip. According to Jack they should not have

allowed John to lead that trip.

5. The KMC itself. Our insurance would cover all of the people (and KMC) above except for Sam. He's on his own.

One other important point to note: the trip has to be a scheduled KMC club trip for there to be coverage. There is no coverage for KMC members who just organize and do a private trip on their own. One thing that people often don't understand is that the insurance is liability insurance and not accident or rescue insurance.

Finally, one more point regarding our insurance premiums. None of the FMC clubs have ever had a claim against the insurance. You can be sure our premiums (for all clubs) will skyrocket as soon as any club makes one claim. It's in everyone's best interest to do whatever we can to avoid having an insurance claim.

* Perhaps the strongest argument for insurance is the whole notion of liability.

Who is liable if an accident were to happen? I believe it is true that many people going into the backcountry (perhaps the majority of KMC and FMC members) assume the responsibility for their and fellow member's actions and consequences. Hence the notion of not needing insurance. However the families of those members (for instance) may have different views or the victim may have different values when injured and unemployable.

*A serious suit can cost \$150K to defend. Some people here like to feel safe because they don't have much money ... but they forget about their homes and that the courts have been known to garnish wages to cover judgments. I also think most people would feel terrible if they were even minimally responsible for an accident, and might feel better if their insurance provided some assistance to the injured party.

Manrico Scremin, FMCBC

Advice On Climbing

"Do your best to stay alive, for your life is fragile. Climbing is a supreme game, but if you die you lose. Go climbing lots, but run away often. Let the mountains bring out the best in you, as they often do. Do what you enjoy, but be honest about why. Listen to everyone but filter out those who say it can't be done, because it can. Good Luck."

Will Gadd in his article Climbing Kills, from "Gripped The Climbing Magazine", October/November 2005.

Mountain Conditions Report

The Association of Canadian Mountain Guides has created the Mountain Conditions Report, a web based information service. The

MCR consists of field observations made by mountain guides, posted as and when they see something relevant. The ACMG will also try to provide a synopsis on Thursday or Friday each week. Technical and administrative support is provided by the ACMG, and the objective is to assist recreational mountaineers in planning their trips, and making informed, reasonable decisions. The reports will naturally be limited by the presence (or absence) of guides in a given area at a given time, and their ability to volunteer. See <http://acmg.ca/mcr> for information on how to subscribe, or to see postings.

We also encourage climbers and mountaineers to follow the Canadian Avalanche Association's reports and forecasts, at www.avalanche.ca From the *CLIMBERS' ACCESS SOCIETY OF B.C. ACCESS NEWS - NOVEMBER 7TH, 2005*



Executive Notes

The Annual General Meeting of the Kootenay Mountaineering Club was held Nov. 18, 2005 at Carlito's Grill in Castlegar. 43 members were present. It was noted that the previous year's minutes should be made available to membership prior to the AGM.

PRESIDENT'S REPORT by Steven Miros.

Thank you to the 2005 executive. Do we need to grow to be a success as a club? How does someone "learn" mountaineering? He suggested increased offering of easier trips to introduce newcomers to the sport.

VICE CHAIR REPORT by Doug Brown.

Proposal to join the Federation of Mountain Clubs of BC (FMC) and buy club liability insurance. He thanked Kay Medland and Martin Carver for their assistance in writing the notice to the KMC which was in the Sept/Oct newsletter. There was lengthy worthwhile discussion. Many good points were made by all. It became obvious that some members want insurance, others don't, and, some want to join the FMC without insurance. - A point was made that this is an important issue for the club however the proposal was well advertised and everyone had a chance to attend and speak on it. The motion to *join the Federation of Mountain Clubs of BC to purchase their liability insurance* was carried by a solid majority.

- A second motion was that *KMC increase fee by \$15.00/membership plus \$6.00/person. to pay for this association with the FMCBC and purchase insurance. This motion was carried.* - There was an unsuccessful amendment to the motion that *the KMC annual membership fee be increased by \$16.00 per adult member, in order that all members share equally in the cost of the new insurance policy.* Even though this amendment failed it is obvious that the concerns this motion raised will have to be looked into by the executive in 2006. Concerns regarding the insurance and non-members on trips will be clarified in the near future.

TREASURER'S REPORT was circulated and presented by Mary Baker.

COMMITTEE REPORTS

Climbing Camp Report by Doug Brown.

There were 12 people. Location was in the Vowels, Bugaboos. Rob D'Eon is interested in establishing a combination hiking, climbing "general mountaineering" camp.

Conservation Report by Kim Kratky. The Red Shutter Inn Cat Ski tenure was approved but they didn't get all of the area they asked for. Jumbo Ski Resort development approval is pending Regional District of East Kootenay vote and their rezoning decision on the application. RK Heli Ski operation is pursuing a lawsuit against developer. The fundraiser for Jumbo was a success. The winner is from Nelson and won a RK Heli Ski trip. There is interest in development of commercial backcountry cabins in the Valhalla Provincial Park, possibly at Wee Sandy Lake. There is also a proposal to build a hydro dam on Glacier Creek. It would include 77 km of power lines and 10-12 km of buried cable over/under Jumbo Pass.

Hiking Camp Report by Ron Cameron. The area chosen by the committee was rated by the majority of the campers as one of the best. There were 78 applications for the 57 available places in the three camps, resulting in wait lists for each camp. Need to keep the lottery system to keep things fair. Would like to stop burning "presto" logs at camp and consider using deadfall instead. Would the club consider a policy change to allow the burning of dead wood at camp? Many thanks to all those who volunteer. Considerable work was done by committee members. Committee members have also undertaken to revise and update the Hiking Camp manual. Hiking Club Finances handled by Mary Baker. Hiking camp committee will replace its retiring members through a formal process done in conjunction with the KMC executive.

Website and Email Report by Doug Brown.

Average 2500 visitors per month. Minimal changes this year. "For Sale" wasn't being utilized so has been removed. Email is very useful. Unless explicitly stated, assume trip announcements are non-club trips. So far emails are spam and virus free.

Newsletter and Membership Reports by Eliane Miros. There were 6 newsletters this year. Reminder to members to keep submitting articles of interest and trip reports.

Summer Trips Report by Martin Carver. The combining of all trips in the schedule has worked well. We always seem to require more volunteers for initiating trips in the fall.

Cabin, Trails and Equipment Report by

Ted Ibrahim. Currently the only equipment the club has are the ice axes that Don Harasym keeps in Nelson. Ted is hoping that someone from Trail/Rossland and Castlegar volunteer to take some ice axes for distribution in those areas. Trail work continues in the Nilsik Creek area. Enterprise Creek trail work was being done by Parks. Upper Mulvey had roadwork started. Volunteers continued work on Toad Mountain trail, did some scouting work and started on the trail to Outlook Ridge. Sandra is getting good support for cabin work. Plans to replace Grassy

Cabin roof in 2006. We need people experienced with roofing to help on this one.

Mountaineering School Report by Sandra McGuinness. Rock climbing nights are being run by Vicki Hart at Gravity Climbing in Nelson. Let Sandra know if you are interested in avalanche training, transceiver training, and winter traveling courses. If the numbers materialize she will do her best to organize something. Reminder that the KMC library has some good material including climbing and guidebooks. A complete list of books is available on the KMC website.

Winter Trips Report by David Mitchell. March 12-18th 2006 ski trip to Kokanee is full. So far not very many trips scheduled. He said it is difficult to get people to commit to specific dates.

NEW BUSINESS

Most members seemed happy with the current AGM format of dinner buffet followed by the meeting.

Martin Carver regretfully resigned as Summer Trips Director and Vicki Hart will assume the duties.

Martin Carver will serve as rep for the KMC at the FMCBC in Vancouver.

Mary Baker regretfully resigned her duties as treasurer and Norm Truant will assume the duties.

-ELECTIONS

President: Steven Miros

• Vice President: Doug Brown

• Mountaineering School: Sandra McGuinness

• Winter Trips: David Mitchell (Beginning 2nd year of term)

• Summer Trips: Vicki Hart (Assuming 2nd year of term)

• Secretary: Vera Truant (Beginning 2nd year of term)

• Treasurer: Norm Truant (Assuming 2nd year of term)

• Conservation: Kim Kratky (Beginning 2nd year of term)

• Climbing Camp: Doug Brown

• Hiking Camp: Ron Cameron

• Newsletter: Eliane Miros

• Equipment, Cabins, Trails: Ted Ibrahim

• Website and Email: Doug Brown (Beginning 2nd year of term)

• Entertainment/Social: Vacant for the 2nd year of term

Bobbie Maras will continue with Membership Services.

There are KMC crests and KMC T-shirts for sale after the meeting. These are still available to all club members.

The meeting was adjourned. 10:40 pm.

AVALANCHE JUDGMENT AND DECISION MAKING - PART I

Laura Adams Selkirk College and the Selkirk Geospatial Research Center, Castlegar, BC. ladams@selkirk.ca

This article was first published in *Avalanche News*, Volume 74, Fall 2005.

We gratefully acknowledge Laura's permission to reprint this unabridged article. It has been formatted to fit our newsletter.

INTRODUCTION

A growing body of research indicates significant enhancements can be achieved in decision quality and decision skills learning programs for decision-makers of all levels through the study of how experts make decisions in real-world settings. This article is the first installment of a three-part series from my Masters Degree research in human factors and expert decision-making. Part I identifies and describes the judgment and decision processes that avalanche experts use to solve the decision problems they face in their profession. In Part II, I will discuss the human factors that influence avalanche experts' ability to make sound judgments and decision actions. In Part III, I will examine these findings in light of recent advancements in strategies for decision skills learning, decision support, and effective avalanche accident prevention.

PART I HIGHLIGHTS

- Avalanche decision-making occurs at the center of three systems of influence: human, physical, and environmental.
- Current information relevant to the three systems of influence is critical for sound judgment and decision actions.
- As avalanche decision-makers gain knowledge and experience, they develop more expansive mental models and use increasingly higher levels of decision complexity.
- The level of expertise of the decision-maker, the systemic context of the situation, the degree of time pressure, and the level of uncertainty within the human, physical, and environmental systems of influence determine the application of decision modes.
- Avalanche experts use the decision strategies of pattern recognition to make effective judgments, and processes of critical thinking and mental simulation to analyze whether their judgments are accurate and if their planned actions will work.
- Metacognition and situation awareness are integral to objective and sound decision-making, and offer powerful strategies to counter the influence of potentially dangerous biases and heuristic traps in the decision process.
- Effective communication within teams results in higher-quality decisions by adding collective knowledge, information, resources, and diverse perspectives to the decision process.

METHODS

To derive an understanding of avalanche experts' decision processes and the human factors that influence their decisions, I used Naturalistic Decision Making (NDM) and Cognitive Task Analysis (CTA). NDM examines the kinds of cognitive skills, knowledge, and experience that are involved in avalanche experts' real-world problem solving and decision-making. CTA seeks to capture this expertise, and make it accessible for decision skills training and support.

I collected data in two phases during my research. In the first phase, I used an electronic survey, and in the second, I facilitated two avalanche experts' focus groups. Using a retrospective case-based method known as the Critical Decision Method, I asked Canadian avalanche experts' to "describe your most significant avalanche decision-making experience, including how experience, knowledge, skills, and human factors influenced your decision." Their stories are woven throughout this article.

Thirty-seven Canadian avalanche professionals participated in my research, representing 12% of the 314 professional members of the Canadian Avalanche Association (at the time the research was conducted). Participants represented a cross section of Canadian avalanche industry expertise (Figure 1) and possessed an extensive experience base (Figure 2). Eighty-nine percent of the participants were male, and 11% were female.

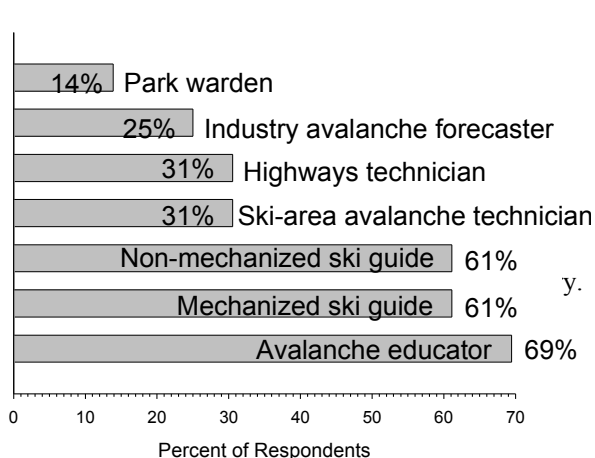


Fig.1 Area of expertise in the avalanche industry.

Note: Numbers total greater than 100 as most participants

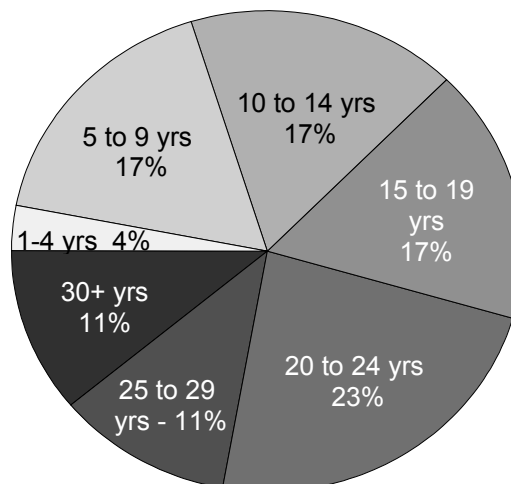


Figure 2. Years of professional experience

had several areas of expertise.

working in the avalanche field.

A SYSTEMS PERSPECTIVE OF AVALANCHE DECISION-MAKING

Avalanche-related decision-making occurs at the centre of three systems of influence; human, physical, and environmental (Figure 3). Since human behaviour is best understood in the social and natural frameworks in which it occurs, sound judgments and decisions cannot consider one of these systems in isolation. Understanding the inter-relationships between these phenomena requires a systems thinking perspective.

The avalanche decision-making process involves making complex judgments about current conditions and the level of uncertainty within the three systems of influence. It then requires making critical decisions regarding what actions will be taken. These judgments and decisions occur within a dynamic process, and are embedded within a broad situational (terrain, snowpack, weather) and human context. Therefore, avalanche-related decisions are not made as discrete events or isolated moments of choice. Understanding the context that surrounds the decision process is essential.

Figure 3. Systems of influence in avalanche decision-making.

Note: The human system contains the individual, team, client, organizational, and socio-political realms. The physical system contains the terrain, including geographic location, slope aspect, angle, shape, and ground cover. The environmental system contains the snowpack and the weather conditions that create it and influence its instability.

FOUNDATION OF AVALANCHE JUDGEMENT AND DECISION EXPERTISE

Three themes emerged as the critical foundation of these avalanche experts' capacities for making sound avalanche-related decisions:

1. Experience

Experience lies at the heart of sound avalanche-related decision-making and results in superior knowledge, skills, and information processing capacities. A helicopter ski-guide described this phenomenon stating, "experience is a huge factor in avalanche decision-making, as the accumulated mileage gives me a conscious and unconscious base of knowledge which to draw from." Participants described how they accumulated avalanche experience over the years, and in different geographic regions and snow climates. For example, one expert explained, "exposure to a variety of regions and snowpack conditions helps round out my thinking. When I encounter coastal conditions in the Rockies, or buried facet layers in the Coast range, I can adapt my thinking and decision-making based on what I'm observing at the time." This finding is consistent with literature on experiential learning and expertise that suggests key characteristics of expert's performance are acquired through experience. For example, Dave McClung from the University of British Columbia suggests experience is fundamental to objective avalanche decision-making, not only to accurately evaluate the snowpack, but also to aid complex decisions and avoid dangerous human biases.

2. Knowledge and Skills

Past experiences blend together to build a knowledge base that enables experts to make sense of current situations and conditions. As one participant stated: "Knowledge is the accumulation of experience, for example, the association of a particular slope angle to its likelihood of sliding in certain conditions, or the influence of wind and snow deposition on slab formation when the air temperature is at a certain value." Experts in my study described how their experiences enabled them to understand and practically apply the knowledge and skills they had gathered throughout their industry training and professional development programs. For example, a ski-area avalanche forecaster related to me how he used his knowledge during a difficult avalanche control mission in unusual conditions: "Thankfully our skills learned through training and experience aided us to place ourselves in a location that reduced our likelihood of becoming involved in the avalanche. I believe this action saved our lives."

3. Information Relevant to the 3 Systems of Influence

Having information and data relevant to the human, physical, and environmental systems of influence was the third element in the foundation to avalanche experts' decision-making success. Participants discussed the critical importance of having a "data-rich environment" in which to support their decisions. Their stories included extensive references to the need for relevant current and historical information in the decision process, for example, site-specific snowpack data, influencing weather conditions, nearest neighbour observations, client information and history, organizational logistics, and culture.

MENTAL MODELS

Mental models are internal representations that portray the avalanche domain and drive our processes of understanding. Experiences and knowledge events specific to the avalanche field result in the creation of these highly integrated knowledge structures. A senior avalanche forecaster for highways emphasized the extent to which mental models aided his decisions: “The success of that week [of avalanche forecasting and control] of very large, continuous avalanches was based in my knowledge of the terrain and how it performs in a storm such as this.”

Rich mental models provide the decision maker with knowledge of the relevant elements of the decision problem, a way of integrating these elements to form meaning, and a system for using this understanding to project future states. These mental models guide avalanche experts to the most important aspects of the decision problem and filter out irrelevant information. The use of mental models results in reduced information management, since the avalanche expert does not need to process all of the available information in order to make an effective decision. When faced with a situation requiring decision action, the avalanche expert employs his or her mental model and it is immediately obvious what decision options make sense.

AVALANCHE EXPERT JUDGMENT AND DECISION MAKING MODES

As avalanche decision-makers develop more expansive mental models, their thought processes evolve in qualitatively new ways of thinking and knowing, and they use increasingly higher levels of decision complexity. Initially, judgment and decision actions are rule-based and include an increasing use of analytical processes. As they gain knowledge and experience, intuitive decision-making becomes more prevalent and important. I suggest that when avalanche decision-makers are able to recognize subtle perceptual cues, and maintain a constant awareness of the current conditions within the human, physical, and environmental systems of influence, they have evolved into systems thinking processes.

Therefore, avalanche decision-makers evolve through a hierarchy of judgment and decision-making complexity (Figure 4). This hierarchy can be seen as a continuum where higher levels of judgment and decision capacities incorporate the lower one(s).

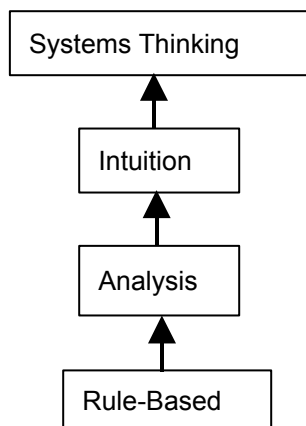


Figure 4. Hierarchy of avalanche judgment and decision-making complexity.

Rule-based processes are consciously controlled by a stored rule or procedure, for example, standard operating procedures carried out in pre-identified conditions or situations. **Analysis** utilizes a conscious process of reasoning that requires time and deliberate effort. For example, analyzing synoptic-scale weather and snow pack information, and then considering local conditions and observations in order to make snow stability and terrain use determinations. **Intuitive** decision-making pre-consciously utilizes the mental models and extensive repertoire of patterns that we accumulate and refine over years of experience. Sets of perceptual cues are unconsciously organized and grouped together to form patterns or ‘knowledge chunks’. In a future situation, when a few of these cues are noticed, we know that we can expect to find the others. We recognize the situation as familiar by matching it to a pattern encountered in the past, including the associated routine for responding with action. As we acquire more patterns and strategies, our expertise increases. It becomes easier to make complex decisions, since we see new situations with a sense of familiarity and recognize how to act (see Klein, 2003). **Systems Thinking** integrates a holistic awareness of the human, physical, and environmental systems of influence.

Ninety-five percent of participants reported using intuitive processes in their critical decision summaries. In 83 % of these cases, intuitive decision-making was the primary mode of cognitive (thought and understanding) function used. This finding is consistent with the literature on high stakes decision-making that identifies intuition as the primary decision mode used by experts in natural settings. Intuition alerted these avalanche experts’ to recognize potentially dangerous situations, such as the ski area forecaster who explained to me: “I had this compelling hunch the whole snowpack was about to let go.” Intuition also signalled the need for analytic processes when faced with situations of uncertainty. For example, one expert stated: “I tend to know if my choice is acceptable. If the consequences are serious, I feel a niggling doubt or ‘gut feeling’. Then I’ll try to get more information and usually the right choice becomes evident.”

APPLICATION OF DECISION MODES

The level of expertise of the decision-maker, the systemic context of the situation, the degree of time pressure, and the level of uncertainty within the human, physical, and environmental systems of influence determine the application of these modes. These modes complement one another to produce effective decision actions. For example, when avalanche forecasting (e.g. office-based morning meetings), these experts had more time and information resources available, and used analysis as their primary mode of decision-making. While in high-stakes, time-pressured field decisions, intuitive processes prevailed. In any situation, when these experts encountered decision problems that rule-based or intuitive processes were unable to handle, they shifted to analytic processes. This included, where time-permitted, consultation with other team members.

While I suggest the primary mode of decision-making is determined by these variables, it is important to note that one process did not completely exclude the others. My study findings concur with the work of other research that suggests single decision problems are often solved using different modes, even though one mode may appear to be more dominant. For example, an avalanche expert may use systems thinking and intuitive processes for the parts of a problem for which adequate knowledge and mental models exist, while rule-based or analytic processes may be used to solve other parts of the problem. I noticed these experts often used the non-primary mode as a quality control check, such as in the case of a ski-area forecaster who described the morning analysis process and then stated: “The final point is – how do I *feel* about it?” Similarly, analysis was often used to check intuitive decisions as a gauge to whether the intuition was based in knowledge and informed experiences, or potentially misleading biases.

DECISION STRATEGIES

The avalanche experts in my study used the following decision strategies:

1. *Pattern Recognition*

A majority (88%) of the participants reported pattern recognition processes in their critical decision summaries. For example, one expert stated: “As time goes by I am able to spot the trends of events that are leading down the dark road of a difficult decision.” Pattern recognition enabled these experts to make sense of a situation by comparing it with their past experiences, or by seeing subtle relationships between the complex factors that were influencing the current situation. These experts also recognized when things were abnormal. For example, recognizing patterns and critical anomalies was the key factor that enabled one forecaster to provide critical advice to the leaders of another group to change their trip location from the area they had planned to ski-tour the next day: “My knowledge of current and building conditions in the area led me to think about the lack of releases on these north faces, and that the possibility of them coming down was high.” Later that morning, a massive avalanche released on that north-facing slope, in the exact area the group had originally planned to be.

2. *Mental Simulation*

Mental simulation is an envisioning strategy where decision makers use their imagination to construct a sequence of events to observe the outcome. This strategy was utilized extensively by participants in my study (76%). For example, one expert related: “The question of ‘what if’ occurs every time I come across avalanche terrain. For me, assessing the consequences is very important in my decision making and determines my perception of risk on the terrain.” Another participant emphasized how effective the application of mental simulation is in complex decision-making, as “the same terrain cannot be treated in the same way since snow conditions are constantly changing.” Mental simulations enabled these avalanche experts to analyse the potential results of a decision action and revise their plan as necessary.

Two recent tools that facilitate mental simulations offer great promise to support sound decisions. Alex Van Herwijnen & Bruce Jamieson’s research describing the characteristics of avalanche fracture suggests using descriptive information to characterize the triggering potential and characteristics of avalanches. For example, a sudden fracture that crosses the entire column and easily releases the overlying block (sudden planar) provides a visual indication of the fracture character that can be extrapolated to simulate the potential and type of avalanche release in surrounding terrain. Roger Atkins recently proposed an avalanche characterization checklist that defines avalanche regimes and their associated risk management strategies. An increase in the awareness of the character and distribution of likely avalanches, for example, large, dry, deep slabs on basal persistent weak layers, can be translated directly into improved terrain management.

3. *Critical Thinking*

We think critically when we apply standards to our thought processes, such as raising vital questions, analyzing self and peer assumptions to determine whether they are justified, evaluating other points of view, or examining the reasoning process for consistency in interpretation when drawing conclusions. Eighty-five percent of the critical decision summaries in this study included descriptions of critical thinking. For example, an avalanche forecaster was preparing terrain for an international extreme ski event. His snowpack assessment resulted in significant concern due to the presence of a deep snowpack instability. However, after conducting extensive explosive control and observing helicopter skiing in the adjacent area, there were no avalanche releases observed. Still questioning, he sought additional information from a local helicopter ski group. He related: “the local guides seemed totally unaware of the deep snowpack instability and gave no meaningful feedback.” The next morning, one of the slopes had released in a 250 cm deep slab avalanche. He called event management and told them the event was off. In his critical decision summary he explained, “it is easy to say YES and have your clients love you. I am ultimately paid to say NO, and that is the hardest of decisions, but so far has never been the wrong one.” Several weeks later, the entire helicopter skiing industry in that region cancelled the remainder of their season due to snow stability concerns.

SITUATION AWARENESS AND METACOGNITION

It is widely recognized by high-stakes decision researchers that situation awareness and metacognition are fundamental to sound decision-making. My research supports this idea. **Situation awareness (SA)** is our capacity to maintain an accurate perception of our external environment by detecting the source and nature of problems and situations that require attention. Decision researcher Mica Endsley argued that situation awareness involves much more than simply perceiving information in the environment. It requires understanding the information in relation to the decision-makers goals, and then projecting the future states of the environment. Metacognition extends SA to our internal environment, and is a higher-order of judgment and decision making complexity related to systems thinking. **Metacognition** is our knowledge of, and ability to control, the state and process of our mind. It has also been described as our ability to take our own strengths and limitations into account.

A ski-touring guide described using metacognition as a regular process in his decision-making: “I take the time to absorb the surroundings and the mood in the air while my clients get ready. It’s a process that I regularly go through, as I like the subconscious approach before I go through my rationale thinking approach.” Another participant discussed his use of metacognition as an analytic process to check potential biases arising from affective or social influences stating, “It is valuable for me to understand how I operate under stress and what is motivating the choices I am making. This is important because I find it keeps me honest and allows me to focus on objective conditions rather than subjective opinions or emotions.” Metacognition enables decision-makers to be aware of their thought processes and control them appropriately. Thus, metacognitive skills and situation awareness are crucial for proficient problem solving and decision-making.

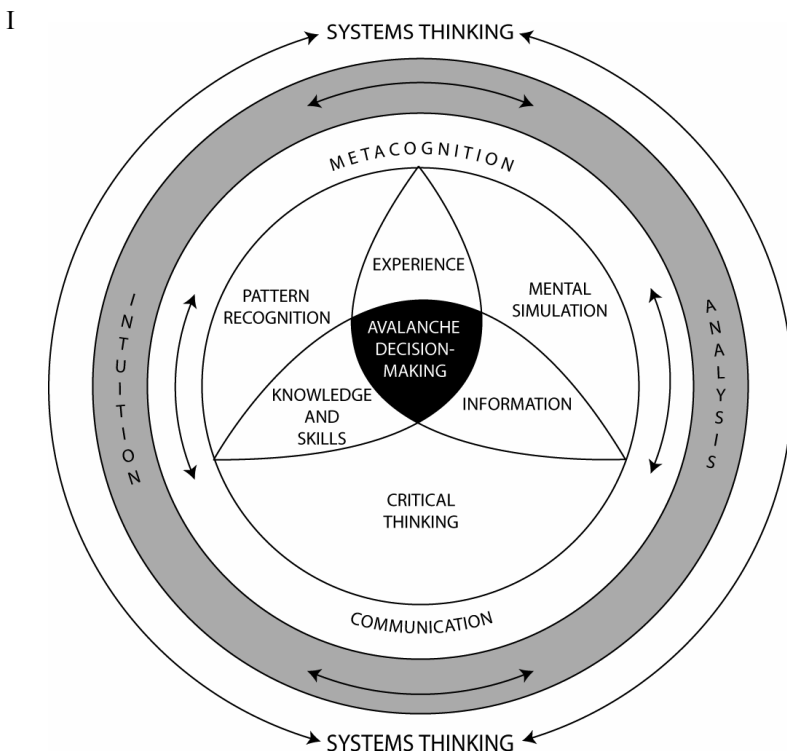
COMMUNICATION AND TEAM DECISION-MAKING

While an individual decision-maker may bear the final responsibility for the decision action, team members often contributed to the final product. Team environments add information, resources, and diverse perspectives to the avalanche decision problem. Teams operate as knowledge systems, and the building of shared mental models and the collective consciousness of the team mind creates a highly efficient context within which avalanche judgement and decisions can occur. Shared mental models provide a context within which information and tasks can be interpreted, as well as a basis for predicting the needs or behaviours of team members. The results of extensive research indicate that team decision-making is preferred when tasks are extremely complex, as it is unlikely a single individual possesses all of the relevant knowledge with which to discover adequate solutions.

I found the capacity of teams to make effective decisions was a direct function of the quality of interactions amongst team members. Environments that encouraged effective and open communication resulted in improved judgment and decision actions, and reduced subjective biases that may have been present in an individual decision-maker. In addition, effective communication fostered shared mental models regarding goals and conditions between decision-makers and management, resulting in collective understanding and higher levels of support for the decision-maker’s judgments and decision actions.

Research indicates high-quality communication is associated with high-quality solutions and team performance. Higher rates of verbalization results in better decision-making, such as task specific information exchange, suggestions of intent, acknowledgements, and disagreements. The importance of communication has been widely recognized in the literature, and along with enhancing predictability, has been identified as the primary method of reducing human error in high-stakes decision-making.

A CONCEPTUAL MODEL OF AVALANCHE EXPERTS' DECISION-MAKING MODES AND STRATEGIES



constructed a conceptual model that describes the judgment and decision making modes and strategies used by the avalanche experts in my study. This model integrates the elements of judgment and decision-making within a holistic system (Figure 5). In this model, avalanche experts’ decisions are made within a systemic process that unfolds from the centre of the system. Experience, knowledge and skills, and information relevant to the human, physical, and environmental systems of influence provide the foundation. The decision strategies of pattern recognition, mental simulation, and critical thinking are driven and fed by this foundation. Through the use of metacognition and situational awareness, avalanche experts are internally and externally aware of the factors that influence their judgments. Effective communication fosters and enhances the quality of their judgments and decisions. Intuitive and analytic decisions result within a dynamic systems thinking perspective.

Figure 5. Conceptual model of avalanche experts’ decision making modes and strategies.

CONCLUDING REMARKS

A major goal of my research was to decouple the judgment and decision processes of avalanche experts, and to illuminate the decision modes and strategies they use in real-world settings. I suggest that a more complete understanding of these processes, and the systemic factors that influence successful judgments and decisions (Part II), will enable avalanche decision-makers of all levels to significantly enhance their judgment and decision capacities. It is important to note that decision-makers should utilize decision modes and strategies that are appropriate and effective for their level of knowledge and experience, in order to ensure they are making accurate judgments and sound decision actions. In addition, NDM research suggests the best way to improve decision skills is to learn from how the experts do it. This approach has led to significant advances in decision-skills learning programs. In Part III of this series, *Developing Expertise in Avalanche Decision-Making*, I describe the key factors in the development of avalanche judgment and decision expertise, and offer an integrated set of strategies to support and enhance decision skills at novice and expert levels.

ACKNOWLEDGEMENTS

My research is dedicated to the group of Canadian avalanche professionals who took the time to reflect upon their experiences and relate their insight to me. When I read their stories and facilitated the focus groups, I was deeply impacted by their words, and I realized how much we can all learn from their experiences of decision success and human error. My thanks are extended to the Canadian Avalanche Foundation, Selkirk College, and the Social Sciences and Humanities Research Council of Canada for providing financial support, and to Arc'Teryx for outdoor clothing and equipment. I wish to acknowledge Bruce Jamieson and John Tweedy who offered valuable insight and good thinking in their role as avalanche expert advisors to my research. Conversations with Chris Stethem, Dave McClung, and Ian McCammon provided encouragement and wise perspectives.

FURTHER READING

- Atkins, R. (2004). An avalanche characterization checklist for backcountry travel decisions. *Proceedings of the International Snow Science Workshop*. Jackson Hole, USA.
- Klein, G. (1998). *Sources of power: How people make decisions*. Cambridge, USA: The Massachusetts Institute of Technology Press.
- Klein, G. (2003). *The power of intuition*. New York: Currency Books.
- McClung, D.M. (2002). The elements of applied avalanche forecasting: The human issues. *Natural Hazards* 25, 111 – 129.
- Van Herwijnen, A, & Jamieson, B. (2004). Fracture character in compression tests. *Proceedings of the International Snow Science Workshop*, Jackson Hole, USA.

About the Author

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KMC Introductory Avalanche Course

It's that time of the year again when skiers and snowshoers are wandering about on snow covered slopes hoping not to become an avalanche statistic. Increase your odds of coming back alive by taking an Introductory Recreational Avalanche Course.

This course will be taught by Marc Deschenes, an ACMG certified ski guide. The course runs over two days with two evenings in the classroom.

The curriculum for Introductory Avalanche Courses and the minimum requirements for instructors have been established by the Canadian Avalanche Centre. Topics covered include (but are not limited to):

- Factors affecting snow stability;
- Assessing avalanche danger;
- Terrain recognition;
- Route finding.

Dates: January 14 and 15 (Saturday and Sunday).

Cost: \$150

Required Equipment: Usual winter gear plus snowshoes, skis or split snowboard (and skins).

Apply: Call (999-9999) or email me (____@shaw.ca) with your name, telephone number and email address (if available) by January 1st, 2006.

To get on this course, you MUST put your name down by January 1st, 2006.

“Put the glide in the stride and dip in the hip”

The sky cleared after the storm and we packed our bags to head ski touring. Everything is great for the first while until I am breaking trail and I want to stop because my hip flexors are tired and my back aches. But it is early and I want to keep skiing, I can push through the pain or adjust my style to place less torque on the body and increase efficiency.

As a physiotherapist and a ski enthusiast I evaluate the mechanics of skiing all the time. A common complaint in society is low back pain. 80% of us will have it at some point in our lives. A lot of skiers know the fatigue and pain from breaking trail on a powder day. For a ski tourer, these pains can stem from inadequate muscular control of your low back, pelvis and hip.

A key component to walking is bringing the foot forward so we can weight it and begin another step. This is significant when we have a heavy boot attached to a heavy ski pushing heavy snow.

The center of mass of the human body is at about the level of the belly button. The walking motion naturally occurs as a rotation of the spine with the legs acting as long levers to this swinging motion of the pelvis. In times of weakness, fatigue, or plain old heavy deep snow, the hip flexors are recruited to push the leg forward. This is an abnormal role for a muscle designed to work against low loads. The unusual workload leads to muscle dysfunction and subsequent pain. As well, the abdominal muscles may be weak but more likely they are uncoordinated. This puts extra load on the hip flexors. We power the foot forward with the hip and leg muscles and allow the spine to buckle and compress the spinal joints.

How can we deal with this scenario?

The abdominal muscles have to lead the rotation of the spine and follow through of the leg. The abdominals, most notably the oblique muscles, have to be the first muscles working. The step is initiated by the abdominals contracting, pulling the pelvis forward and the hip merely follows. This will protect the spine, so as to not to torque on the joints. The hip flexors will have a strong platform to pull on allowing smoother muscle function of the hip and leg muscles.

We can practice this standing. Place one hand on your lower stomach, Just below your belly button. The other hand is on your hip flexors of one side. Swing the leg forward to feel which muscle pulls the leg forward. Try to feel your stomach muscles pull your pelvis then the hip flexors coming in only slightly. Focus on the lower stomach muscles being attached to the pelvic bone as it rotates and brings the belly button up to the heart.

This is a quick and easy approach to one specific movement problem. There are many other reasons why we have pain skiing uphill. And this may not work for everyone.

Try this insight into walking. If nothing else, you will move smoothly and spend some of your up time thinking of something else than “why doesn’t that guy behind me catch up and start busting a little trail, my abs are killing me”.

As Parliament sings, “Put the glide in the stride and dip in the hip”.

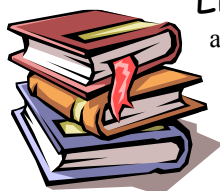
Stan Metcalfe.

Sore Knees and Olive Oil?

Freshly pressed extra virgin olive oil contains a compound that mimics the anti-inflammatory properties of ibuprofen, the commonly used pain killer, according to a study in the journal Nature. Gary Beauchamp, the lead researcher at the Monell Chemical Senses Center in Philadelphia is calling the newly discovered compound oleocanthal.

The finding is significant because a growing body of medical research suggests inflammation plays a key role in many illnesses, from cancer to heart disease.

Dr. Beauchamp was attending a meeting in Sicily, where he did some olive oil tasting on the side. He noticed freshly pressed olive irritates the back of the throat in the same way as swallowing ibuprofen (in liquid form). So, he set out to find the specific compound in olive oil that acts like ibuprofen. Although oleocanthal is chemically different from ibuprofen, both suppress so-called COX enzymes, which are involved in the inflammation process. The research team estimates that a 50-gram daffy dose (almost four tablespoons) of olive oil is equivalent to about 10 per cent of the ibuprofen dose recommended for adult pain relief. ‘Although it won’t cure a headache, regular olive-oil consumption might confer some of the long-term benefits of ibuprofen’ the researchers said. *From The Globe And Mail..Sept 2, 2005*



Library News: Guidebooks, Guidebooks and more Guidebooks

In the end, to ski is to travel fast and free - free over the untouched snow covered country.

I wish I said that, but I didn't Hans Gmoser did. Notwithstanding who said it first, if you want to plan some new ski (or snowshoe) tours this season, check out some of the great books in the KMC library. Starting close to home is “*Ski Touring in the West Kootenay*”. Not too much new in this book if you've been skiing around here for a while, but new skiers to the area will find some good local favourite tours (not my hidden spots though!). “*Ski Trails in the Canadian Rockies*” and “*Summits and Icefields*” both have good selections of tours ranging from short (an hour or two) to long (multi-day) in the Columbia and Rocky Mountains. For nordic skiers, “*A Guide to Cross Country Tours of Central*

Vancouver Island,” “*Nordic Trails in Banff National Park*,” and “*Cross Country Ski Tours in Washington's North Cascades*” should keep you busy for the winter months. And, there's got to be at least one good tour in a book titled “*The Best Ski Touring in America*.” New in the library this month:

- *Avalanche News: Vol 74*. This is the journal of the Canadian Avalanche Centre and always has some excellent educational articles. This edition features the third article in series by Laura Adams – this one on how avalanche professionals make decisions.
- *Cross Country Ski Tours I: Washington's North Cascades*. By Kirkendall and Spring. A good variety of short and longer day tours in the North Cascades.
- *Accidents in North American Mountaineering, 1997 and 1998*. These are joint publications of the Canadian and American Alpine Clubs, and report on a range of mountaineering, scrambling and climbing accidents. A good way to learn from other peoples mistakes.

Club Trip Reports

Fall Days at the Copper Cabin

My last work party of the year to the KMC cabins was also the easiest - perhaps it's good to end on a high note, or at least a relatively easy note. Lenard Loverenow from MoF met Bess Schuurman, Bert Port, Ray Neumar and I at the end of the May and Jenny Road in Blewett with his trademark Subway mug of coffee in hand at 8.30 am on Wednesday, **October 5**. We bumped our way up to the parking area near the Copper-Red saddle in two vehicles using the time to catch up on each other's trips at home and abroad (both past and planned). With Lenard's ATV loaded with the chainsaw and other necessary supplies, he set off, and, by the time the rest of us had walked the half hour into the cabin, Lenard had already dropped two dead trees and bucked one of them. We got to work stacking wood under the cabin, cleaning the windows and stove, installing a new toilet seat (most important) in the outhouse, and filling a few last gaps in the cabin walls and roof. Lunch was taken on the deck, where it was actually rather chilly with just a weak, wintery sun filtering through the clouds. The few centimetres of snow on the roof warmed up just enough to drip a little. Shortly after lunch, all our chores were finished, the cabin was in excellent repair for winter, and we hiked back out to the vehicles.

A huge thank you to all the volunteers and Lenard for your hard work and great company.

Coordinator, Sandra McGuinness.

West Creston Crags, October 9

Can you believe it? Two trips to the West Creston Crags in one season! I was so excited that I forgot to record the usual vital statistics such as map co-ordinates and elapsed time. However I do remember the access and gear info: Turn right on Granary Road and park after 30 yards. Follow the carefully concealed (overgrown) trail through the bulrushes for 90 seconds to the base of the main cliff. For gear, 6 quickdraws, a #1.5 Friend and a 50 meter rope should do the trick.

South facing cliffs and a warm sunny day had us climbing in T-shirts. While I don't remember exactly who did what, and with whom, here are a few sight and sound bites from a very funny day:

- Axel won his showdown with Gunslinger, blazing across the hand traverse, and firing the power moves above. Not a bad guy left standing!

- Sandy kept her usual Foyst with Mister Twister. "Still the best", she reported between smiles.
- Rob and Linda enjoyed themselves on Heartbreaker. "Don't hold me so tight", called Rob at one point. "No one has ever complained about that before", quipped Linda in classic actress said to the bishop style.
- With this reporter's ample butt stalled under the roof on Warrior, someone remarked, "He should wear a thong next time". Nice try!
- After cruising up Summer Love, Doug discovered, like so many before him, that there are as many tricks as treats on Trick or Treat.
- Vicki decided that Blind Date Direct was still her favourite, but met her match on Boldfinger. "I'll lick that Boldfinger next time", she vowed. And she will.

While most of the climbing took place on the main Lovers Lane Wall, routes were led or topped over the full length of the Crags. In addition to the climbs mentioned above, ascents were also made of Spring Fever, Trapline, Pretty Face, First Time and The Hedge.

Unlike our previous visit, no alligators, pythons or other scary swamp dwelling fauna were observed this time – just a few frogs and a sleepy bat. Since several people had pressing engagements (family Thanksgiving dinners), we were unable to make the usual mandatory stop for beer, coffee, chips, chocolate, ice cream and all the other essentials normally required after a good session on the rocks. Otherwise, a perfect day.

Participants were Axel Betz, Doug brown, Rob D'Eon, Vicki Hart, Linda Johannson, Sandra McGuinness, Hamish Mutch (reporter).

West Kokanee Face to Outlook Ridge Trail Scouting, October 11

Robin Lidstone had done some preliminary scouting for a trail from Kokanee West FSR to the Outlook Mountain Ridge using an old miners trail. We drove up the road to Gibson lake for 7.0 km before turning left on to the West Kokanee Face FSR. At 7.7 km we turned right on to the Kokanee West FSR. This road has been deactivated and has some very deep water bars. We crossed a bridge at 10.6 km and continued to the end of drivable part of the road. We walked up the rest of the road and marked, and lightly cleared a trail from near the end, down to the creek where we found the old miners trail. We managed to find our way along this trail for about 1.5 km, doing minor clearing and marking and flagging. We will do another scouting trip next year with a small group, followed by a full trail clearing party next year.

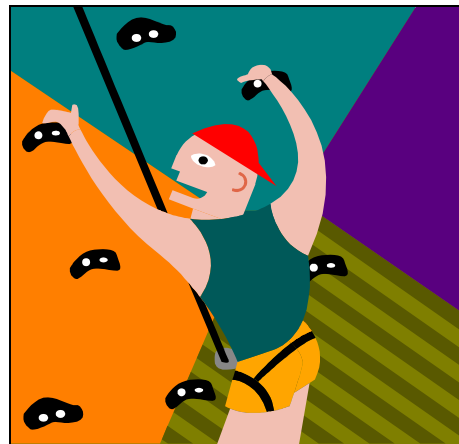
We were Robin Lidstone, Don Harasym and Ted Ibrahim.

Climbing at the Gravity Climbing Centre, November 23

This was our first KMC climbing night at the gym and it was well attended with many old faces from last year and also a few newcomers.

Doug and Sandra gave belay demonstrations and Jen who works at Gravity was also very helpful with lots of instruction.

Most of us warmed up on the easier routes and depending on our capabilities worked our way up to the difficult routes. The evening was filled with lots of fun and challenges. I would encourage anyone that has an interest in climbing to come on down to the wall whether you are a novice or experienced.



Climbing nights will continue through the winter to March, depending on the weather and the turn out of climbers. I will send out a schedule for January, February and March. Climbers: Axel Betz, Doug Brown, David Cunningham, David Grant, Hamish Mutch, Ray Neumar, Curt Nixon, and Sandra McGuinness. Coordinator, Vicki Hart.

Other (Non-Club) Trip Reports

Coburg Island, May-June 2005

It has happened before. John phones and says something like “So, would you like to go on an expensive trip to somewhere remote and cold to haul a heavy sled full of food through polar bear country?” My answer was the same: “Sure. What’s the catch?”

This time the objective was to be Coburg Island, a windswept and biology-challenged range of ice-bedecked mountains guarding, as it were, the entrance to Jones Sound, about 25 km off the southeast coast of Ellesmere Island in Canada’s high arctic.

But I am being unkind. Ten years ago the entire 35 km long island was proclaimed as *Nirjutiqavvik National Wildlife Area*. The reason for this designation was mainly a significant set of bird cliffs near Cambridge Point at the south end, and on Princess Charlotte’s Monument, a prominent sea stack off Coburg’s eastern peninsula. The chief nesting species are thick-billed murre and black-legged kittiwakes, but in the spring of 2005 the area was visited by four odd ducks, transients from far to the south. These were John Dunn, Chris Cooper, Randall Scott, and me. We were attracted, as are the other species, by the opportunity to be near the open water of the great North Water Polynya. When it comes to wildlife, it is the areas where floating ice ends and open water begins that are really where the action is. It is the opportunity to see all the sea birds and the marine life, including polar bears, not to mention the superb scenery and the soul-restoring feeling of wilderness, that brings us back again and again to Canada’s amazing arctic territories.

We arrived in Canada’s most northerly civilian settlement, Grise Fiord, in the middle of May and immediately set off with our skis and sleds (sledges) for the pleasure of camping on the sea ice in beautiful sunshine. It was -15°C. Mid-May is late enough in the spring that open water surrounds Ellesmere’s southern tip, King Edward Point, so we had planned to gain the east coast by skiing across the Manson Icefield, a system of glaciers and icecaps covering much of southeastern Ellesmere. It was during our outward and return crossings of this icecap that we had the poorest, most low-visibility weather of the entire six-week trek, which was otherwise favoured, rather unexpectedly, by clear blue skies.

It was during the crossing of the sea ice to Coburg Island that we saw our first polar bear of the trip. He was a distant and lone hunter, appearing weirdly distorted in the heat-shimmer above the highly reflective snow. Once established on Coburg, we immediately set off to ski up the highest (according to the map) mountain on the island, an unnamed snow-dome that soared to fully 825m. From its cold and windy summit we had a grand view of Baffin Bay, Jones Sound, southern Ellesmere Island and, finally Devon Island, our playground on several earlier trips.

Our anti-clockwise journey around Coburg Island required crossing low passes on the insides of three large peninsulas whose outer extremities were lapped by ocean waves and were therefore unsuitable for good sled hauling. We visited cliff-tops high above the nesting murre, skied or hiked up several other hills, watched seals bathing in the sun beside holes in the ice, saw a pod of belugas from a lofty viewpoint over the ice edge, listened to the distinctive sound of the long-tail ducks and the purring sound of the murre, and hauled our sleds in front of the 40 metre ice-cliffs of numerous piedmont glaciers.

Along the northeast coast of Coburg Island our route took us to the confluence of the 76th parallel of north latitude and the 79th line of west longitude, which was a few hundred meters out on the rapidly melting sea ice. We stopped to take some photographs,

including some of our GPS unit showing we were at the exact confluence.

A little further up the coast we had a slightly unnerving encounter with a bear when we unwittingly disturbed her daytime snooze. We first became aware of her presence only because of a loud and persistent growling as she hurriedly climbed up the steep cliffs behind the shore. It was considerably comforting to see this agitated bear headed away from us rather than in our direction.

On the night of June 9th we camped beside a spectacular giant iceberg just off the north coast of Coburg Island. One detached section of this berg looked, from our camp, like a vertical pillar with an armchair at the top. From there we made our westward crossing of Glacier Strait back to Ellesmere, and the homeward part of our trek had formally begun.

As luck would have it, our return crossing of the Manson Icecap also had to be done in whiteout conditions by compass and GPS. It was ‘high fives’ all round as we reached the sea again at the snout of the mighty Jakeman Glacier. With the crux behind us we were able to proceed back to Grise Fiord at a leisurely pace. We saw numerous muskoxen along the way, and enjoyed the novelty of hiking around on snow-free land to seek out birds, picturesque canyons and ancient archaeological sites.

The melting season was well under way as we made our way toward town. Extensive puddles of water covered the sea ice and dry feet became, for a few days, an unattainable luxury. We arrived uneventfully back in Grise fiord on June 22nd, having had nearly six weeks in the great northern wilderness. Even as our flight took us southward we were scheming about possibilities for future trips. It had been another very fun adventure. Sandy Briggs

Caribou Ridge Spire (2602 m., 8537') Sept 24 Map: Slocan 82F/14 1:50 000

Caribou Ridge is located in the far northeast part of Kokanee Glacier Park and is quite easily accessed via Keen Creek road and Ben Hur road. On a Saturday in late September, Doug Brown and I climbed the highest point on the ridge, an unnamed 2602 m. spire. Starting at 8:50 from the end of the Ben Hur road at 5100' (about 957-261), we embarked on the flagged trail and reached the 6250' lower lake at 963-245 and northwest of Mt. Chipman in 1 hr. 10 min. Here the trail ends. We continued along the lake’s west bank almost to the south end before ascending southwest along a watercourse and up a rocky gully to reach a vertical wall. At this point, we traversed right 50 m. to gain easy, mossy ramps leading to the alpine at about 960-240. This is by far the easiest approach to Caribou basin; other routes from the lower lake have led to cliff bands or fields of house-sized boulders. We continued to the lake at 957-234, skirted its north side, and ascended beside the inlet stream, making for the middle of three summits located to the southwest. Although this one looked lowest, our trim map told us otherwise. It was correct. In good time we reached the 2540 m. col (951-231; two large cairns) northwest of our goal. A sharp granite spire just to the northwest looked inviting, but we decided that was the right-hand of the three and lower. Heading southeast via easy scrambling, we gained the south ridge of our objective, negotiated a short bit of fourth-class ramp/slab, and summited at 1:20 pm (4 hrs. 20 min. up, 952-230, 82F/14 does not clearly show this point). After inspecting the small cairn (no record), we gazed northwest to the spire we had contemplated and agreed it was considerably lower (2580 m. contour on the trim map). Beyond it lay Satisfaction Pk., at 2598 m. just a shade lower than our point. Of the moderately interesting bumps to the southeast along the ridge, all were clearly lower. Satisfied that we had scaled the highest point, we departed at 2:05, carefully down

climbing our ascent route. Once back to the col, we re-traced our steps to the truck by 5:20 (3 hr. 15 min. descent, 8 hr. 40 min. day). No rope was used, or taken.

This area makes for excellent autumn outings on generally solid rock. The rough, but flagged and cairned, Ben Hur trail allows access to the alpine in about two hours. Note that the alpine terrain—drained by Ben Hur and Deer creeks on the north and Bjerkness Creek on the east—is quite broken up. It’s not like walking on a golf course.

Kim Kratky

Hiking Camp Report - Camp 3

Dates: July 30-August 6

Participants: Renate & Felix Belczyk, Suzanne Blewett, Janet & Ron Cameron, Laurie Charlton, Margaret Gmoser, Don Harasym, Ted Ibrahim, Graham Kenyon, Hanspeter Korn, Gerry Larouche, Heather & Don Lyon, Ron Perrier, Pat & Alan Sheppard, Terry Simpson, Kal Singh, Barb Stang.

The four ice axes told the story. Duct-taped together with assorted others ready for the helicopter, there they lay, their long wooden shafts circa mid-20th Century. Still serviceable of course, still able to do the job, but the tired varnish suggesting weakening fibres beneath, a waning strength, a brittleness that might surprise. No metaphor implied of course; however, I figured the average age of our party was on the snowy side of sixty. Not all of course, that’s the thing about averages; there were a few younger bloods to offset the seniors. Indeed the token Quebecois that we brought along to ensure political correctness was moved to note as one of his highlights: *“The lovely ladies of Camp III: charming, graceful, elegant, classy and gorgeous”*. And you wonder why some people get second helpings?

The challenge with doing the camp write-up, particularly for procrastinators like me, is that the scribes from the other two camps have already covered the field. The weather varies a bit, but there is only so much one can say about mountains, lakes, flowers, streams, birds and bugs. You really had to have been there to appreciate what it was really like, and if you were there then you don’t need another second-hand description. Rather than struggle with this challenge alone I asked each of my fellow campers to provide me with a brief note stating the highlights of their week. No promises to use their creations verbatim of course – Ahh, the pleasures of the ruthless editor – though the craftier scribblers submitted poems, which are harder to mess with.

Top of the list for frequency were the alpine flowers, and as close second were the camaraderie, friends and fellowship that seems to happen when assorted mountain enthusiasts share a meadow together for a week of chatter and vigorous exercise. A week of callisthenics in a flower nursery wouldn’t do it, which suggests the catalyst has something to do with the setting and the shared experiences high on craggy ridges with infinity of mountains overwhelming the normalcy of our day-to-day existence. *“The freshness, the freedom, the farness, Oh God! How I’m stuck on it all”* (Robert Service)

We all had our favourite spots to just sit and soak up the view, though the views were so spectacular from so many places here that the favourite required the embellishment of some other pleasure of being at that moment. A warm sun, the light breeze keeping the mosquitoes away, the scent of the flowers that splash the meadows with a riot of colour, the hum of insects flitting amongst them; a comfortable perch, back against a smooth rock, a sense of well-being, no worries, no sense of the impending, just the pleasure of the

here and now and the time to relax and savour the moment – and the view.

From the slopes beneath the west ridge the horseshoe lake below glitters in the afternoon sun, silhouetting the dark firs scattered along the peninsular that creates the U shape of the lake. Our camp is on the far shore, beside the outlet stream that tumbles into a chasm to reappear a hundred feet or so down the valley where it feeds another lake down in the forest below. Several of our group would struggle down and up from that valley, bushwhacking through alder and rhododendrons vainly seeking a route to overview the Albert Glacier, disappointed, but feeling good about themselves in the leisure of retrospection.

Far away on the north ridge the tiny figures of Hans, Suzanne and Ron work their way over craggy obstacles and down the slabs towards home. They would later attack both Mt Kenneth and Llewelyn with vigour and enthusiasm, turned back only by the technical difficulties and the unprotected exposure to several thousand feet of steep, grey slabs. Their consolation was the circuit of every other ridge during the week: north, south and west, all challenging – “Exciting,” to quote Suzanne’s understatement.

Wending our way down a ptarmigan and chicks emerge from their camouflage against the rocks, the hen stepping watchfully as the chicks scatter ahead. A marmot sits on a rock and whistles mournfully, then scampers down an impossibly steep slab, and a pika scuttles from under a rock carrying nipped off anemone heads to the pile already drying in the sun. It gets hotter lower down and the bugs rise up to meet us as we side-hill around the lake and into camp, to the chatter of sharing experiences, or to a quiet snooze in a hot tent, or, for the hardy whose character requires such reinforcement, a brief, breathtaking dip in the icy lake.

I’ve missed some of the comments, I know. The food always gets honourable mentions, and it is doubly welcome at the end of a hard day. Funny isn’t it that everyone knows what’s coming, it’s the same every year – even to the salmon loaf being bumped off the menu – but always that suspense of what’s on tonight and how good it is!

The last words I shall leave to the poets:

Skyline summons
Steep slopes
Meadows marvel
Below beckons
Blue
Margaret Gmoser

Ta ga tame ui	Alpine flowers
Iro kiso i a u	Vying their colours
Yama no hana	For whom do they appeal
Terry Simpson	

The lupine lumps lounge lugubriously
Lolling like lazy lizards in luscious landscapes.
Barb Stang

Bright flowers red and blue and yellow and white,
Covering the slopes for our delight.
Long hikes, good friends and fun,
Good food, cold dips, alas all done.
Thanks for the efforts by everyone.

And, finally, words from the eldest of us, reflecting the wisdom of experience and certainly the most succinct summary of what hiking

camp is all about: *“My most rewarding memory is that I was able to scramble to the top of a tall mountain on a sunny day and watch the universe unfold.”*

Graham Kenyon

Climbing Camp Report 3

Climbing Ridge - A Ridge Too Far

Date: July 24-31

Location: Vowells/Bugaboos

During the first KMC climbing camp at Bill's Pass in 1998, Steve Horvath and I had a spectacular tent-site from which we could gaze across East Creek towards Climbing Ridge.

This long ridge consists of four separate summits, and some impressive east facing buttresses. When subsequent research indicated that none of these peaks had been climbed, we resolved to return and hopefully remedy the situation.

In early August 2000, we flew into a site two and a half miles west of Climbing Ridge. We had chosen to camp on the west side as it was closer to the Duncan River than the east side, and we planned to walk out to the Duncan, in order to save on return helicopter costs. I had estimated, wishful thinking, that this hike would take about a day and a half.

After several good climbs, including the first ascent of the northernmost peak of Climbing Ridge, we headed for the Duncan. Unfortunately for us, this walk out, like Topsy, just grew and grew, eventually requiring three and a half days, of which the third was the worst. On this day we had to traverse a narrow ridge, which was blocked by a series of rock towers that were all high enough to be a problem, but not high enough to appear on the topographical map. We would climb up one side, with full packs, rappel down the other, and in order to save time, continue unroped to the next one. "This would be an ugly place to die", I remarked to Steve, while contemplating the fatal exposure on both sides of the ridge. That evening we finally reached the steeply sloping forest, and spent the night wedged behind trees. We were now out of food and water, and besides the forest was too dry to light a stove, or even Steve's pipe, which he said was worse than being hungry.

Most people would learn something from an experience like this, but not us. "I wish we'd been able to try those buttresses on the east side," Steve said one day. And so the dice were rolled. With the KMC returning to Bill's Pass last summer, Steve and I signed up: We would be flown to a satellite camp near Climbing Ridge, do a few climbs, and walk back to the main camp at Bill's Pass. Stop me if you've heard this one before.

Despite a spell of beautiful weather, difficult access in the form of steep ribs and slabs, polished by glacial recession, and dense equally steep bush, conspired against us. No unclimbed peaks were reached, and no big buttresses were attempted. Our only successful climb was a new route on the east ridge of Mt. MacCarthy. Here a mixture of snow and fragile class 4 rock had us tippy-toeing along very, very carefully. "Eggshell Ridge" seemed like an appropriate name.

We had optimistically thought that one long day would see us back at Bill's Pass. We left our high camp at noon on Thursday and reached base camp at approximately the same time on Saturday. One full day and two half days of the usual thrashing over, through, across, around and up boulder fields, alder, creeks and moraines. Experiencing new country is always interesting, but is best done

with lighter packs. In his article on climbing camp, Doug Brown stated that we had been spanked, but details were sketchy. Hopefully this fills in the blanks, and maybe, just maybe, we finally learned something – Fly in and fly out! The next time that anyone mentions Climbing Ridge I will fill my ears with wax, and have myself tied to the nearest tree.

Steve and I now share the doubtful distinction of having walked from Bugaboo Lodge to the Duncan River, via Bill's Pass and the MacCarthy Glacier. This NOT to be recommended hike involved four separate trips, five full days and five half days. For dedicated Kootenay baboons only.

Steve Horvath and Hamish Mutch (Reporter).

We are relaying this Thank You note from Pat Thomson to all KMCers who have known Garth.

Thank you for your thoughts and concern for us. I am sure Garth would have liked to say a great big thank you to all KMCers. Garth enjoyed his participation in all KMC activities - camps, hikes, meetings, potlucks and being on the Executive. He especially valued the friendships he made with Club members. These past 2 years have been ones of hope and then despair. I valued all the letters from our special KMCers and hold each and every one of you dear. Thank you so much.
Affectionately, Pat.

Lord, give me grace

When I go from the mountains,
Away from the things
That bring peace to the soul-
Hemlocks and spruces,
Fresh sweet-smelling cedars,
All green things on the earth
Which in beauty unroll.

Peaks in the sunrise,
And peaks in the sunset-
Stars of pure gold
In the clear, silent nights-
Mists full of stillness,
Bright clouds of soft whiteness-
Mystical glowing of far;
Northern lights.
Help me I pray,
When those joys are behind me,
When down to the flat-lying
City I go,
Take me in spirit
Back, back to the mountains,
To rest in thy presence,
And be still and know.

Lucy A. K. Adee
(Forwarded by Jane Steed)

What is the Explorers & TASK

Since 1991, the Tourism Action Society in the Kootenays (TASK) has been working on behalf of small and medium sized tourism businesses and organizations to address issues and opportunities in the Kootenay Rockies and Boundary region of southeastern BC. TASK is a non-profit organization whose mandate is to support the development and long-term sustainability of the tourism industry through advocacy, business support, industry collaboration, and more recently product development. TASK is financially supported by membership fees and on a project-by-project basis. TASK is governed by a Board of Directors representing various sectors of the tourism industry and various geographical locations in the region.

TASK's Executive Director, based in Revelstoke, is Eileen Fletcher, she can be reached at 837-9531 or via email at efletcher@rctvonline.net

The Explorers Initiative is a tourism product development partnership with the Canadian Tourism Commission managed by TASK (www.canadatourism.com). This initiative is working with various sectors and organizations of the regional tourism industry to bridge the gap between market demand and regional supply through collaborative product and industry development.

The Explorer's coordinator, based in Kimberley, is Jikke Stegeman. She can be reached at 427-7351 or via email at jikke@telus.net



The St. Bernard. – No More Searches, No More Rescues.

Travelers passing over the Grand Saint Bernard Pass can no longer expect to be guided to safety by the noble Saint Bernard. St. Bernards, raised by Friars at the St. Bernard Hospice (built on the pass in the 11th century) since the mid 1600s, have been replaced by modern rescue equipment. The last actual rescue took place in 1975. The St. Bernard is credited with saving over 2000 pilgrims traveling between Switzerland and Italy. The large dog is able to withstand severe winter weather due to its thick double coat and a large layer of fat. Originally intended for company and protection, it was soon realized that the St. Bernard's excellent sense of smell and acute sense of direction allowed them to maneuver through thick fog and snowstorms. The breed's great stamina and strong well-arched toes made it sure footed in the snow and ice sensitive to sounds and motions, undetectable by people, the dogs can even feel the faint tremors of avalanche victims under the snow. The large upkeep associated with the dogs has been a drain on the religious orders funds. The bulky dogs also helped clear paths through the snow for travelers. *From The Province, Sept. 5, 2005. By Erica Bulman, Associated Press.*

It is time to renew your membership with the Kootenay Mountaineering Club.

For your convenience, the new membership/liability waiver form is inserted in this newsletter.



Have a safe and Happy Holiday Season





KMC Winter Rock Climbing Schedule at Gravity Climbing Centre

1: Gravity Climbing Centre, 513 Vernon Street, Nelson

1.50 per visit (a discount for KMC members - please bring the correct change).

One time \$5.00 fee for a belay test. Ropes are provided. Shoes and harnesses are available for rent.

• **bring:** Harness, locking carabiner, belay device, rock shoes.

Dates and Times:

December 8 Thursday at 5:30 pm

January 5 Thursday at 5:30 pm

January 17 Tuesday at 5:30 pm

February 2 Thursday at 5:30 pm

February 16 Thursday at 5:30 pm

Additional Information: Please call me (Vicki Hart) in advance, 999-9999 or email me _____@hotmail.com to confirm that the climbing night is going ahead as scheduled.