



**07-08 CAA Avalanche Operations Level 2
Student Application Letter
May 1, 2007**

Dear Level 2 Applicants,

This package is provided in the hopes that it answers many of your questions regarding applying for the CAA Avalanche Operations Level 2 program for the 07-08 winter. This package is extensive and we kindly ask that you read through it closely to find the details of the application process you need. We are here to help so please, after reading this package, feel free to give us a call if you have any unanswered questions. This letter contains a few things that you should know that are not currently contained in the package.

Employer Reservations: Organizations employing avalanche workers in Canada are permitted to reserve spots on Level 1 and 2 courses before the season starts. Deadline for reservations is May 1. Employers have reserved roughly 50% of this years Level 2 spots this year.

06-07 Waiting List: The 06-07 Level 2 program saw unprecedented demand for courses and we responded by increasing our scheduled courses. Those students who were unable to be accommodated last year have been automatically carried over to this season. If you were on the 06-07 wait list you have already been admitted into the 07-08 Level 2 Program and we will be contacting you shortly to arrange the details. For 07-08 applicants the 06-07 wait list and employer reservations have created a pre-season enrolment rate of 80%.

International Students: International students are subject to a 10% International Student Fee. In addition to this if you do not have the CAA Avalanche Operations Level 1 course as a prerequisite but wish to apply for equivalency for your training and experience obtained in your home country you have to fill out a PLAR form. There is a \$125 fee for PLAR processing and this form can be found at the end of this application package. International students who do not have references from CAA professional members are asked to provide at least one reference letter from a current employer in addition to another professional reference confirming your familiarity with Canadian standards.

ACMG Assistant Ski Guides and Module 2

ACMG Assistant Ski Guides who had their Module 1 BEFORE they took their ASG Training and Exam are exempt from the Module 2 program. We require proof from you that you had your Module 1 before you entered in the ACMG training and examination stream. Only certified Assistant Ski Guides will be considered for this exemption without application.

Assistant Ski Guides who have not entered the Level 2 program yet can still apply under the CAA's PLAR process for Module 2 exemption. This process costs \$125 and the PLAR form can be found at the end of this application package.

Career Development Guidelines: In response to numerous requests from Level 1 students and Level 2 applicants the CAA's Education Committee has developed the Career Development Guidelines. This is not a tick list, rather a list of the common skills over avalanche workers regardless of the specific workplace. Please use this as a guide in the preparation of your cover letter and Avalanche Resume. This documents roughly outlines what the 100 days of field work should look like and the skills that that amount of work should develop. We've talked to numerous employers from all sections of the avalanche industry to develop this document and feel it fairly reflects what we expect of Level 2 applicants.

Not paying by Credit Card?: This years application process includes an online registration component and you will be asked for a credit card. For those students who wish to pay by check, money order or by employer PO please fill in 16 '1's and the expiry 01/01 and contact the CAA immediately after you have pressed submit during the online component. We require payment no later than 7 days after you register, failure to contact the CAA and arrange this will result in removal from the L2 program without warning.

We look forward to receiving your applications this spring and to seeing you on next years Level 2 program. Please feel free to contact us if you have any questions... after you read this package.

Best of luck in your preparations and don't forget to enjoy your summer!

Sincerely,

A handwritten signature in blue ink, appearing to read 'Ian Tomm', written in a cursive style.

Ian Tomm
CAA Operations Manager

level two

INFORMATION
REGISTRATION
2007-08



human factors • decision making • research •
management • spatial variability • case studies •
learning • team work • professionalism • terrain
• managing the unexpected • performance • risk

Avalanche Operations Level 2 Program

Advanced avalanche training.

Description

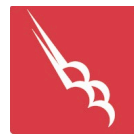
The CAA Avalanche Operations Level 2 Program is an advanced program for personnel who work full time with avalanche safety and control operations. Participants must have at least 100 days of operational field experience making and collecting weather, snowpack, and avalanche activity observations before applying. This generally requires at least 2 years of active operational field work and experience under the mentorship of CAA Professional Members.

The program is divided into 3 modules. Module 1 focuses on decision making, advanced snow science concepts and operational risk management principles in a 4 day theory based classroom environment. Module 2 and 3 are all field based programs that involve the application of Module 1 principles into real life operational decision making and risk management situations. Module 2 is a 3.5 day field course in an evaluation free setting to provide a free and open envi-

ronment to maximize learning. Module 3 is a 7 day evaluation based course whereby students knowledge, skills and competency in both technical knowledge and practical application of Level 2 concepts is evaluated. Successful completion of Module 3 completes the Level 2 training program.

Continuing Professional Development (CPD)

Module 1, 2 & 3 courses are open to past Level 2 graduates as CPD. Typically 30% of Module 1 students are CPD students, enabling a rich and collaborative learning environment for all involved. Numerous organizations are now sending significant numbers of senior avalanche personnel to participate in these courses annually.



canadianavalancheassociation



The Canadian Avalanche Association's Industry Training Program (ITP) is a fully bonded and provincially registered private post-secondary educational institution offering technical and vocational training courses for the Canadian avalanche industry in B.C., Alberta and Quebec. CAA ITP courses are world class and are recognized by industry, guide training organizations and government agencies. Courses are held throughout the winter across Canada. Contact the CAA today to find out more and enroll. Minimum age is 19.

Program Goals

collect & evaluate detailed weather, snowpack & avalanche data

travel safely in avalanche terrain

evaluate & forecast snow stability for different geographic areas

manage personal wellness & performance

evaluate terrain & its interaction with the mountain snowpack

develop & apply effective communication and teamwork skills

evaluate & forecast avalanche hazard

develop concepts of risk management for the workplace

Detailed Program Information

Prerequisites

Applicants must meet the following prerequisites in order to apply:

- CAA Avalanche Operations Level 1 or equivalent
- thorough working knowledge of the CAA Observation Guidelines & Recording Standards (OGRS 2002)
- >100 days of operational field experience in weather, snowpack & avalanche occurrence observations & analysis
- advanced backcountry skiing, boarding or snowmobiling skills, good fitness
- a minimum of 2 letters of reference from CAA Professional Members
- participation on at least 2 operational avalanche rescue scenarios

Course Design & Activities

Module 1: 100% classroom

Module 2: 90% field, 10% classroom

Module 3: 75% field, 25% classroom

The teaching & learning activities used in this program will include: field trips, case studies, problem-solving, small group work, individual and group projects, hands-on practice & application, lectures, and daily assignments among others.

Course Evaluation

Participants' learning during the level 2 program will be formally evaluated on the Module 3 course. Informal feedback will be provided as required to each student on Module 1 and 2 courses. A variety of criteria will be used to evaluate students performance including academic and practical categories. Detailed evaluation criteria will be provided as part of course materials provided to each student upon registration.

Course Materials

Upon registration students will be provided with a program package that will include:

- logistical & venue information
- Level 2 Manual & readings
- CAA OGRS (2002)
- CAA Field Book
- recommended technical references

Students will receive additional materials & resources during courses that will include:

- technical resources including relevant research papers, publications & references
- CAA Field Book
- forms, supplies & equipment specific to learning objectives

Course Equipment

Equipment needs are similar to the needs of workers on a regular day at an avalanche operation. Field equipment is not required on the Module 1.

Technical

- loupe, ruler, crystal screen, thermometers & density kit
- calculator
- compass, clinometer & altimeter
- field book and pencils
- camera, binoculars
- relevant maps & guidebooks

Personal

- backcountry ski touring, boarding, snowmobiling equipment
- transeiver, shovel, probe
- day pack with food/water
- first aid, repair & emergency kits
- radio and/or cell phone with emergency contact numbers

Calendar & Tuition

Module 1: 4 days

Kamloops: October 23-26, 2007*

Canmore: November 6-9, 2006*

\$900 including registration & materials

Module 2: 3.5 days

Whistler: December 9-12, 2007*

Interior BC: Jan 19-22, 23-26, 2008*

\$700 including registration & materials

Module 3: 7 days

Whistler: December 15 - 21, 2006*

Golden: February 17-23, Feb 24-

March 1, 2007*

\$1500 including registration & materials

* Dates & Locations subject to change

Overflow Courses

The CAA will endeavor to schedule additional courses should enrollment dictate.

International Students

International students are subject to a 10% international student fee. These fees will be due on final payment.

CANADIAN AVALANCHE ASSOCIATION
industry training programs

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REVELSTOKE, BC
VOE 2S0
PH(250)837-2435
FAX(250)837-4624
WWW.AVALANCHE.CA

APPLICATION CHECKLIST

Step 1: Initial Application

Cover Letter

Please include a 1 page cover letter introducing yourself and outlining your current and future aspirations in the avalanche industry.

Professional Resume

Please include a 2-3 page professional resume outlining your educational background and work history. Please include a photocopy of your CAA Level 1 certificate.

Avalanche Resume

Please include a 2 page summary of your avalanche experience using the CAA's Career Development Guidelines as a guide. This is where your 100 days is important to outline. Please DO NOT include field books or photocopies.

References

Please include 2 letters of reference from CAA Professional Members who can recommend you to the Level 2 program.

Step 2: Online Registration

Application Review

We will review your application for completeness once we receive it. All applications are processed on a first come first served basis. Incomplete applications will be returned. It is your responsibility to ensure that your application is complete before submitting. We are unable to accept references separate from your application.

Username & Password

Once admitted into the program you will be issued a username and password for our online registration system. This will be emailed to you so please ensure you include an email address in your application where this can be sent.

Dates & Locations

Once you receive your username and password you can log on to our Level 2 Online Registration system and fill out the requested information including course dates and locations.

ACMG Assistant Guides

ACMG Assistant Guides who had their Module 1 BEFORE they took their ASG training and exam are exempt from the Module 2. Others can apply for exemption (\$125 fee) from the M2. See PLAR.

Step 3: Waiver, Contract & Fees

Contract & Waiver

At the completion of the online process a waiver and contract will be produced with your information filled out. It is important to read and sign these documents and send them in to the CAA immediately. Failure to do so may result in removal from the program.

Medical Information

During online registration you will be asked for medical and emergency information.

Tuition & Fees

A credit card number will be requested during the online registration process. \$225 per module will be charged at the time of processing your online registration. The registration deposit will be deducted from this total. Final payment is due no later than 1 month prior to the start of the module.

Course Materials

Once the CAA processes your application and registration deposits we will send you a course manual and venue information for each course you are enrolled in.

May 1, 2007

Registration (Step 1) opens Tuesday, May 1, 2007. Applications are processed on a first come first served basis. Registered courier is strongly recommended. If sending by fax please confirm by phone.

CPD Applicants

CPD applicants are asked to apply with a cover letter and work related resume that clearly outlines your CPD status and the specific course(s) and dates you wish to enroll in.

International Students

International students who do not have a CAA Level 1 certificate must prove equivalency. This costs \$75 and a form can be obtained directly from the CAA for this. Please include this in the Step 1 application.



Industry Training Program Prior Learning Assessment & Recognition (PLAR) Process

For exemption of the Avalanche Operations Level 1 prerequisite of the Avalanche Operations Level 2 Program for international students.

This process does not apply to requests for PLAR based on Portfolios or Course Challenges

Applicants requesting PLAR based on prior course equivalency for ITP courses will submit a completed PLAR checklist (this document) and provide supporting materials that achieve the following criteria:

There is a \$125 fee to process this application.

Applicants Name:	
Credit Card #:	
Expiry Date:	
Signature of Card Holder:	

Curriculum

Course content of the proposed equivalent course will contain a minimum of 80% of the current CAA Avalanche Operations Level 1 curriculum. A Level 2 Goals & Objectives form is contained at the end of this document. Applicants are strongly recommended to ensure that their proposed course meets this criteria before application.

Procedure

- Provide a course schedule and a course outline that clearly describes the learning outcomes/course goals for the proposed equivalent course.

Achievement of Learning Outcomes/Course Goals

The applicant will have successfully achieved the learning outcomes/course goals of the proposed equivalent course.

Procedure

- Provide a transcript of achievement, a certificate of completion or letter confirming your participation for the proposed equivalent course.
- In the event that documentation is not available provide the following:
 - o A letter from the course instructor of current avalanche industry supervisor detailing the applicant's knowledge and ability to practically apply the knowledge and skills taught in the proposed equivalent course.
 - o AND, a one page synopsis of what you have learned in the proposed equivalent course.

Active Learning

The applicant will have actively participated in a minimum of 80% of the learning activities of the proposed equivalent course.

Procedure

- Provide an official record of attendance and/or copy of the feedback received from the course instructor that indicates active participation in the course learning activities.
- This item can be the same as what is provided for the Achievement of Learning Outcomes aspect of this PLAR process.

Currency

The applicant will have completed the proposed equivalent course within the past five years and can demonstrate active use of the proposed equivalent course since completion of the course.

Procedure:

- Provide a course certificate or invoice with the date of completion clearly highlighted.

International students are expected to be fully familiar with Canadian standards including operational best practices and the CAA's Observation Guidelines and Recording Standards.



*For application for possible exemption from the **Avalanche Operations Level 2 Module Two** course for certified ACMG Assistant Ski Guides*

Applicants requesting PLAR based on prior course equivalency and experience for ITP courses will submit a completed PLAR checklist (this document) and provide supporting materials that achieve the outlined criteria. Incomplete or poorly produced applications will be returned without refund. Applying to the PLAR process is in no way a guarantee that exemption will be granted. All applications are handled on a case-by-case basis. Applicants are strongly recommended to take time and care in the preparation of this PLAR form.

DUE AT TIME OF REGISTRATION FOR LEVEL 2 PROGRAM

There is a \$125 fee to process this application.

Applicants Name:	
Credit Card #:	
Expiry Date:	
Signature of Card Holder:	

Curriculum

Course content of the proposed equivalent course will contain a minimum of 80% of the current CAA Avalanche Operations Level 2 Module 2 curriculum. A Level 2 Goals & Objectives form is contained at the end of this document. Applicants are strongly recommended to ensure that their proposed course meets this criteria before application.

Procedure

- Provide a course schedule and a course outline that clearly describes the learning outcomes/course goals for the proposed equivalent course and *how they compare* to the CAA Level 2 Module Two course.
- This may require a written submission by the applicant to prove their case and ensure all details are clearly identified for the PLAR Review Committee.

Achievement of Learning Outcomes & Course Goals

The applicant will have successfully achieved the learning outcomes & course goals of the proposed equivalent course.

Procedure

- Provide a photocopy of the ACMG Assistant Ski Guide certificate.

Active Learning

The applicant will have actively participated in a minimum of 80% of the learning activities of the proposed equivalent course.

Procedure

- Provide an official record of attendance and/or copy of the feedback received from the course instructor that indicates active participation in the course learning activities.

Currency

The applicant will have completed the proposed equivalent course within the past three (3) years and can demonstrate active use of the proposed equivalent course since completion of the course.

Procedure:

- Provide a course certificate or invoice with the date of completion clearly highlighted.
- Applicant will be required to prove active use in a written submission (as indicated above)

CAA Avalanche Operations Level 1 - Course Goals & Objectives

		1	2	3	4	5	
A	State the nature of avalanches	State the snowpack properties necessary for the formation of avalanches	Describe the characteristics of avalanches	Describe the size of avalanches	Describe the motion characteristics	Describe the fracture mechanics of snow	
B	State the hazards of avalanches	State the hazards of avalanches to people and property	Describe the effect of avalanches in Canada	Define avalanche danger ratings	Describe industrial avalanche protection		
C	Describe and classify avalanche terrain	Identify and describe avalanche paths	Describe avalanche terrain	Apply classification criteria to mountain terrain	Select safe routes and identify safe areas in avalanche terrain	Describe how terrain affects the snowpack	
D	Describe the properties of the mountain snowpack	Describe the formation of the mountain snowpack	Describe snowpack metamorphism	Describe the significance of weak layers in the snowpack	Describe how the snowpack varies over terrain		
E	Collect & record weather data	Observe & record study plot weather data	Observe & record field weather data	Describe the effects of weather on the snowpack	Obtain & Interpret Weather Information		
F	Collect & record snowpack data	Observe & record snowpack layer boundaries	Observe, classify & record layer properties	Observe & record temperatures	Demonstrate & record snowpack tests	Plot snow profiles	Describe significant profile properties
G	Collect avalanche occurrence data	Apply the avalanche size classification scheme	Observe & record avalanche occurrence data				
H	State the factors and methods used in stability evaluation	Describe the significant factors used in snow stability evaluation	Demonstrate the use of stability ratings to evaluate snow stability	Communicate significant weather & snowpack data			
I	Describe and demonstrate personal and group safety	Describe the rationale for safety measures	Describe & apply appropriate actions when traveling in avalanche terrain.	Describe pre-trip preparation for backcountry travel.	Describe significant human factors in avalanche work		
J	Describe avalanche search and rescue	Demonstrate proficiency in transceiver searches	Describe personal & group avalanche incident response	Participate in companion rescue	State the components of organized rescue plans		

**Each goal and objective may be comprised of several classroom and field based lectures.*



Career Development for Avalanche Operations Level 1 Graduates

The following document is provided to Level 1 Graduates and Level 2 applicants to help aid in their development as avalanche workers in Canada. This document is offered as a guideline only and should in no way be interpreted as a 'tick list' or 'must do' list. Generally, in order to gain all of the experience contained in this document it would be necessary to work in more than one job setting over several years.

Snowpack, Weather and Avalanche Occurrence Observations

- **Field Skills:** A minimum of 100 on the job field days including the following observations:
 - >50 recorded manual study plot weather observations
 - >50 recorded manual field weather observations
 - >25 full snow profiles including densities and temperatures
 - >25 field test profiles
 - >50 avalanche occurrence observations
- **Office Skills:** Establish quality observations through complete familiarization with the CAA OGRS. Link quality of observations with quality of stability analysis and forecasting.
- **Operational Skills:** Ensure familiarity with operational databases including data entry and analysis. Plot snow profiles both manually and with computer assisted profile programs. Plot storm profiles (manually or with computer software). Supervisor provides quality control and mentorship to ensure accuracy and proficiency.

Mountain Travel Skills

- **Travel Skills:** Ensure riding ability exceeds job requirements. This is typically expert level for the industry as a whole.
- **Terrain Skills:** Demonstrate ability to recognize and avoid or minimize exposure to avalanche terrain through good use of route finding and track setting.
- **Navigation Skills:** Understand and demonstrate accurate use of map, compass, altimeter and GPS.
- **Mountaineering Skills:** Basic rope handling techniques for protection against falls and for emergency rescue.
- **Trip Planning:** Understand basic elements of trip planning for fieldwork in order to ensure objectives are met within operational timelines.

Avalanche Forecasting

- **Stability Analysis:** Develop through hands on experience a good working knowledge of stability factors and how they fit into stability analysis. Receive mentorship in the workplace and have analysis skills reviewed by peers.
- **In-house Forecasting:** Ensure a thorough understanding of the system and methodology used by the operation for stability forecasting, including the operational guidelines for avalanche hazard levels.
- **Knowledge of Weather:** ensure basic understanding of mountain weather through coaching, self learning and additional education.
- **Weather Forecast Products:** ensure familiarity through frequent analysis of weather products in common use by the local operation, CAA, or industry.
- **InfoEx:** Understand format and abbreviations for the Industry Information Exchange. Practice writing up and submitting Infoex data.
- **Public Avalanche Bulletin:** familiarity with the PAB provides another cross check for snow stability trends.

Avalanche Control

- **WCB Blasters Ticket:** Meet the requirements for obtaining the ticket for snow blasting. Completion of the CAA ACB course.
- **On the job Explosives Training:** Thorough on the job training for safety and to meet operational objectives. The more techniques the trainee is exposed to and has endorsements for, the more valuable that person becomes to the industry.
- **Log Book:** Maintain personal avalanche control blasters log book.
- **Transportation of Dangerous Goods certification.**

Terrain Analysis

- **Mapping Skills:** Become familiar with the use of maps, air photos and oblique photos to identify avalanche paths and record avalanche activity and occurrences.
- **Avalanche Atlas:** Become familiar with the local operation's avalanche atlas, and the location and physical characteristics of individual avalanche paths, such as aspect, elevations, length, potential, etc.
- **Target Atlas:** Become familiar with the local operation's target atlas.
- **Appropriate Test Locations:** Be able to choose appropriate test profile sites (safety, representation)
- **Local Knowledge:** Become familiar with the local operation's standard access routes to ensure maximum safety and efficiency in field operations.

Avalanche Search and Rescue

- **First Aid Training:** Maintain appropriate level of first aid training. It is recommended that avalanche professionals maintain a minimum of an 80 hour advanced level wilderness first aid course and annual CPR.
- **Companion Rescue:** Be thoroughly familiar with all aspects of companion rescue, including mastery of transceiver search and probing techniques. Transceiver search skills

must meet CAA and/or industry standards. This would include proficiency in both analog and digital technologies to the point of being able to teach a variety of search methods for each technology.

- **Organized Rescue:** Be well versed in the local operation's organized rescue plan, participate in mock rescues.

Risk Management

- **Safety or Risk Management Plan:** Each operation will have a variety of operational procedures to ensure safety of clients and staff, which a trainee must become familiar with. Many of these procedures represent best practices in the industry.
- **Health and Safety Regulations, Governmental:** These can apply to handling, use and storage of explosives, explosives control procedures, equipment operation, hazardous materials, workplace incidents, and more. They are more universally applied across the industry and every trainee should be aware of them.

Communication

- **Radio Communication:** ensure proper understanding and use of VHF radio equipment, including familiarity with federal regulations.
- **Standard Operations Procedures:** Be completely familiar with specific communication protocols designated by the local operation's SOP and safety plan.
- **Verbal and Written Skills:** Opportunities to practice verbal and written communication skills including computer skills should be encouraged.