



On Patrol

2021 Edition

CANADIAN SKI PATROL
PATROUILLE CANADIENNE DE SKI

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(F.I.P.S.) Fédération internationale des patrouilles de ski	1

Foreword

The Canadian Ski Patrol has been in existence since 1941. There are 9 divisions and 57 zones across Canada from coast to coast to coast and there are over 225 CSP patrolled ski areas spread from west to east to the far north. These different patrols represent an incredibly diverse population of patrollers and an awe inspiring range of climates, terrain and snowpacks. In addition, the communities that represent the user groups for these ski areas are demographically diverse in size, remoteness, population and culture. In addition to snow based patrols, other kinds of activities requiring our first aid and rescue services can include a wide range of events such as running and bike races, music festivals and community fairs.

A manual that provides direction to all patrols across Canada must, by necessity, be specific enough to be of use for all patrols but general enough to recognize the differences in how each ski area operates and how diverse the patrol environment can be. At a large ski area you will be part of a combined volunteer and paid patrol, while at a small ski area you are likely the only patrol.

There are some skills that a patroller might be asked to learn and certify that are outside of the scope of practice for CSP and fall under the authority of the venue to which CSP has an agreement with. These area specific procedures will be instructed and certified by the ski area. An example of this is chairlift evacuation. You may also be working with a staff patroller who's scope of practice differs from yours. An example of this is avalanche control.

Preface

The CSP On Patrol Manual provides patrollers and candidate patrollers with the basic elements of patrolling essential to the effective and efficient conduct of their duties. The manual contains the basic information upon which system-wide evaluations will be based.

This manual is not to be construed as all encompassing. It is a uniform guide to a basic understanding of the CSP patrol procedures. This information is based on the knowledge, expertise and accumulated experience of many people.

The CSP On Patrol Manual demonstrates methods of practice that are effective in the majority of situations encountered by patrollers. It does not purport to be the only methods. Patient and patroller safety is paramount at all times and in all practices.

The reader is encouraged to broaden their knowledge and skills by referring to other relevant reference material and with dedicated practice.

By proper use of this manual, an unsurpassed standard of proficiency can be achieved by the members of the CSP, which will permit the CSP to fulfill its objectives of safety and service to the people of Canada in a competent manner.

Roles and responsibilities

The key roles and responsibilities of the patroller include;

- Contributing to "safety on the slopes and trails" at the ski centre through:
 - Inspection (sweeps and ongoing observation) as a resort team member.
 - Mitigation of risk factors on slopes and trails at the direction of resort.
 - Modelling safe ski/ride behaviour.
- Provision of first aid services (on slopes, trails and resort facilities) if AFA qualified.
- Providing incident scene management.
- Transport of first aid and patient equipment to and from the incident site.
- Transport of patient by toboggan or alternative means to the next level of care (base clinic, ambulance, etc.)

The on snow qualified patroller (both alpine and nordic) must have:

- Specific knowledge of the area patrolled.
- Ski/ride skills to patrol all area terrain.
- Knowledge to identify and mitigate risk situations.
- Knowledge and skill to manage an incident site.
- Knowledge and ski/ride skills to drive unloaded toboggans to incident sites.
- Ski/ride skills to transport equipment to and from incident sites.
- Knowledge and ski/ride skills to drive a loaded toboggan from an incident.
- Knowledge and ski/ride skills to transport a patient on area terrain to the next level of care.

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Many patrollers from across the country also helped to improve the CSP Patroller's Manual by submitting education change requests. Thank you!

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Special thanks to all the spouses, partners and friends that had the patience to endure the endless hours spent by the CSP members on the production of this edition and also to those who supported the continuous improvement of the CSP manuals by their contributions to previous editions.

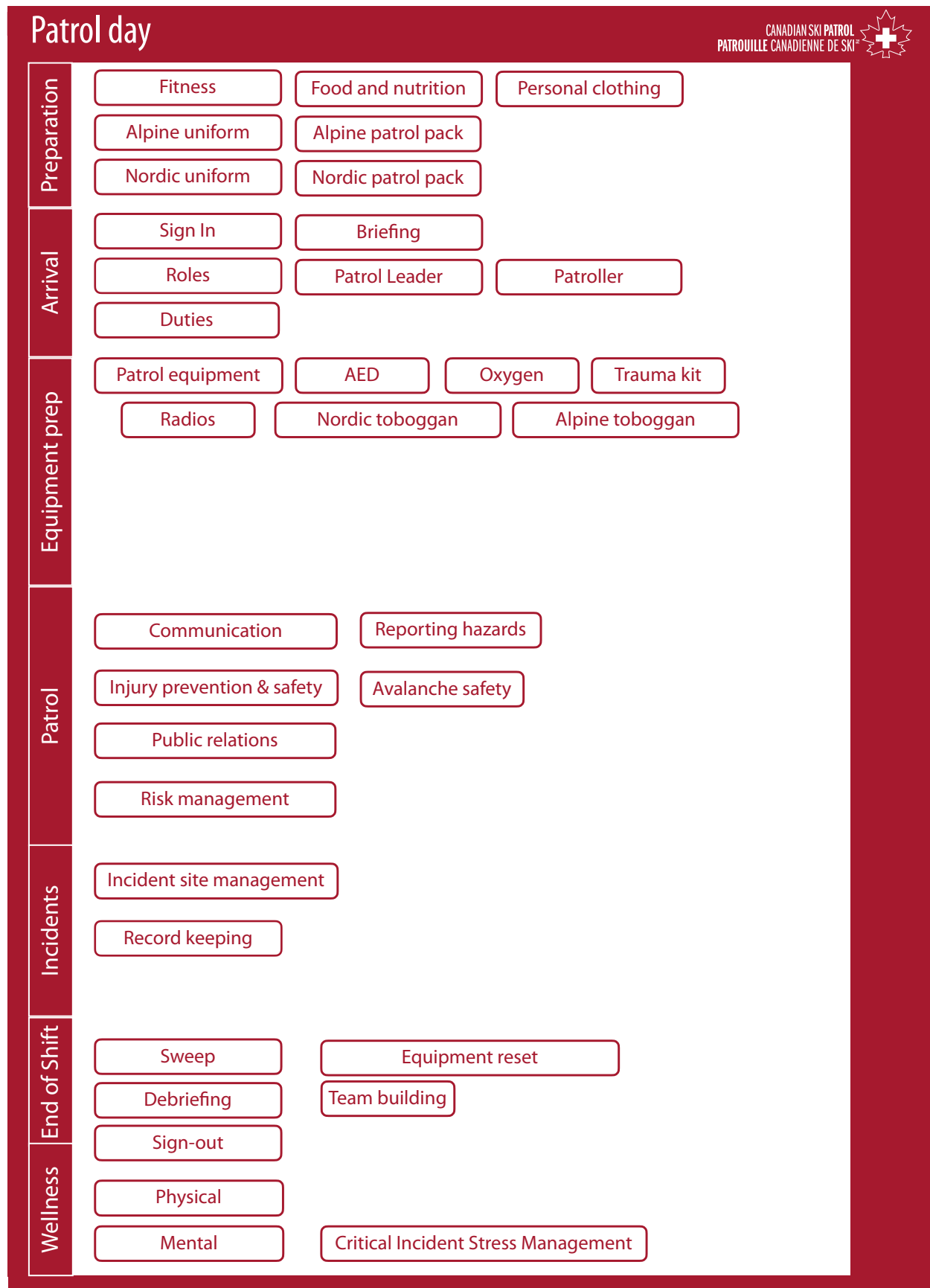
1. Patrol Day



OP 1-1 Ready to Patrol at Sasquatch Mt. Resort - Hemlock Valley, BC.

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Preparation

Some general safety guidelines for patrollers to consider when planning for a successful patrol shift include:

- Start your day with a nutritious breakfast, pack a healthy lunch and snacks, and drink hydrating fluids during your shift. Eating throughout the day will help keep blood sugar levels stable and maximize energy levels.
- If you do not feel well, do not patrol for that day. Find a replacement and take time to recover. Stay home and get well.
- Make sure your uniform is clean and in good repair, and that your equipment is in good working order for the start of each shift.
- Make sure your first aid kit is fully stocked. Include any useful materials specific to your area or time of day/year, such as a headlamp, extra gloves, hand warmers or a multipurpose tool.
- Be prepared for the weather. Dress in layers. Wear a head covering (helmet is strongly recommended on the slopes), as 60 per cent of heat loss occurs through the head. Wear gloves or mittens. Mittens are warmer for those susceptible to cold hands.
- Wear sun protection. The sun reflects off the snow and is stronger than you think, even on cloudy days!
- Wear eye protection. Have sunglasses and goggles with you.

Fitness

Skiing and snowboarding are high-activity sports. Time must be spent preparing for the season. Patrolling is a demanding activity that requires a good level of fitness.

Exercise will:

- Improve your patrolling performance and reduce your risk of injury
- Reduce muscle soreness and improve your posture
- Increase blood and nutrients to your tissues
- Improve your coordination

Food and nutrition

In a cold climate, food becomes critically important to maintain body temperature, to provide energy for involuntary body functions and to move about under varying conditions. Having a knowledge of what quantity and types of food are necessary helps us to function most efficiently in a cold environment. The temperature, the severity of the terrain, the snow conditions and your skiing/riding ability should all be taken into account when planning meals and snacks. For a strenuous day's skiing/riding, a daily food intake of up to 4,500 calories should be planned.

If a person carries a pack of 20 pounds or more they will need an additional two to five per cent more calories. In lower temperatures, more calories will be required.

Personal clothing and preparing for the elements

One of the most important considerations for an enjoyable patrolling experience is to dress efficiently. When dressing for your shift, consider the weather, as well as your fitness level, body type and activity level, and how much you sweat. To dress successfully for outdoor winter recreation, the layering system works best.

Base layer

The base layer is an inner moisture-wicking or thermal layer. It can be a top and/or leggings of a high-quality fabric that is breathable. Many different materials are used for thermal base-layer garments: Polyester and wool are both common. The fabric weave is fine and very tight, allowing good thermal and breathable qualities.

Middle insulating layer

The middle insulating layer keeps you warm while you are skiing/riding. Common middle layers include a fleece style garment which is available in many thicknesses. Other mid-layer options include a thin sweater layer of merino wool, a lightweight jacket or a vest. Choose your middle layer for breathability and the amount of warmth needed for your activity.

Outer shell layer

The outer shell protects you from the wind/moisture and keeps you dry and warm. Ski jackets and pants may be simply a shell layer or an insulated garment. Either way, the outer layer works best if it is both waterproof and breathable. It must be able to wick away any sweat from the middle and base layers to keep you dry. Good quality winter clothing also has taped seams to prevent moisture leakage, and a powder bib to prevent snow from riding up through the jacket.

Hand Protection

Avoid working bare-handed by wearing a thin inner glove liner under regular ski gloves or mitts. The liner adds another layer of warmth on very cold days and protects hands when performing fine motor skills like knot tying, adjusting buckles, etc. The liner also makes putting on and taking off nitrile gloves easier and quicker.

Head protection

This includes helmet, helmet liner/toque and balaclava/face mask.

The Canadian Ski Patrol recognizes the added protection that wearing a helmet provides. The CSP supports the nationally adopted Canadian Ski Council policy recommending wearing helmets for skiing and riding. Skiers and snowboarders are encouraged to educate themselves on the benefits and limitations of helmet usage. Most ski centres mandate the use of helmets for their staff and volunteers.

There may be times when Nordic patrollers wear a helmet, such as in the backcountry and at night on a treed trail. This is becoming more common.

If a patroller drives a snowmobile at their resort, the policy of the resort will normally require a Department of Transport (DOT) approved helmet.

Helmets, helmet covers, balaclavas, face masks or decals, etc., should not detract from the professional appearance of the patroller.

Uniform & patrol pack

The first impression a patient or member of the public has is when they see the patroller. The uniform must be worn professionally and proudly. A tidy, consistent appearance will instil public confidence in your ability and is critical to successful interaction with patients and the public.

Uniforms and patrol packs/vests must be clean, free of damage and stocked appropriately for patrol duties. For details regarding the alpine uniform, patrol pack and its contents, refer to [OP Chapter 2](#). For details regarding the nordic uniform, patrol pack and its contents, refer to [OP Chapter 3](#).

Arrival

Sign in

Each patroller must know how to sign in to patrol at their area. Various systems are used, and will be determined and administered by the local zone or patrol.

All patrollers assigned for the day must be present and ready to patrol at the time designated by the patrol leader. This could be based on when the lift begins operation, an event start time or as determined by area management.

Briefing

Each patroller will have an understanding of all procedures at the area where they are assigned. While there are routine activities carried out by the patrol on a daily basis, there may also be specific activities that the area management would like implemented. Many of these activities may be specific to a ski centre or only done occasionally.

General Roles

Patrol Leader/Assistant Patrol Leader/Shift Leader

Details necessary for a patrol to function smoothly and efficiently may include, but are not limited to:

- Scheduling of patroller duties
- Ensuring adherence to operating procedures developed by and with the ski centres
- Maintaining patrol equipment and supply inventories
- Maintaining a professional relationship with area management
- Public relations
- Area safety

It is often advisable for a patrol leader to delegate certain responsibilities to other experienced patrollers. However, such delegation does not relieve the patrol leader of their ultimate responsibility.

Patroller

Patroller duties may include:

- Trail opening and closing assignments
- Assigned patrol area
- Patrol hut or first aid clinic duty
- Equipment checks
- Morning and evening sweep assignments
- Event coverage
- Sanitation of some areas (e.g. first aid room, patrol room)
- Dispatch duty
- Public education and relations (e.g. alpine/nordic responsibility code)
- Area safety duties as assigned
- Other duties as applicable to a specific ski centre

Special programs or events

Patrollers should be made aware of any special programs or events applicable to their area in order to take part as required, or at least pass on pertinent information about the aims and intents of those programs to the public.

Equipment preparation

Location of equipment

It is imperative that each patroller knows and is familiar with the location and effective use of all equipment used by the ski patrol at their area. They must be trained and competent at transporting this equipment, when needed, to an incident site or back in service to its storage location.

Some examples of this type of equipment are:

- Oxygen and related supplies

- AED
- Splints
- Spinal Motion Restriction (SMR) devices
- Trauma pack
- Toboggan
- Rescue equipment

Verifying equipment

Properly completing checks of toboggans, toboggan packs and other items at the beginning of every shift will ensure that when equipment is needed it will arrive in a timely manner and be in good working condition. Any additional equipment that may be needed at an incident site are to be verified daily, including:

- Toboggan
- AED
- Airway and Oxygen
- Trauma pack
- Vacuum splint and Mattress

Patrol Duties

Each patroller will have an understanding of all procedures at the area where they are assigned. Each patrol will determine the procedures required at its area. These procedures should be recorded in a document (area patrol manual) that can be given to each patroller and that is fully understood by all the stakeholders at the area.



Fig OP 1-6: Opening sweep on "Avalanche" at Beaver Valley

Opening sweep

Subject to area procedures, opening sweep is generally done with the patroller looking for and reporting hazards and conditions on the first run. Significant hazards might require action immediately.

Evaluate overall trail conditions. If they are dangerous, note the danger, fix it if possible and report it. Refer to [Identifying and dealing with hazards, Op Chapter 6](#) for specifics.

Opening and closing trails during the day

It may be necessary to open or close a trail during the day. Each area will have its own specific procedures to do this, but there are general guidelines that are applicable to all ski centres.

Opening a closed trail during operating hours

Prior to opening a trail, patrollers must sweep the trail to determine if the public can safely ski/ride the trail. Hazards must be identified and marked. If needed, warning signs (such as "difficult conditions") and/or fencing should be placed at the trail entrance. Once the trail has been swept and hazards have been identified, the area-specific signage used to close the trail can be removed.

Closing a trail during operating hours

Once the area-specific signage and/or fencing has been placed at the entrance of the trail, patrollers must sweep the trail to ensure that no members of the public are on the trail.

Communication

Communication is a fundamental ski patrol skill. Reporting run conditions and hazardous areas, and reporting or responding to incidents require knowledge of the ski centre's communications protocols and how to use them effectively. It is essential that patrollers are completely familiar with all the communication devices found at their area. Patrollers not only need to know how to use the tools at their ski centre, but how to communicate critical information so that there is no misunderstanding between sender and receiver. Refer to [Communications, OP Chapter 4](#) for more information.

Injury prevention & safety

Two of the core CSP mandates are:

- Promotion of safe skiing and sliding
- Prevention of injuries

Throughout the patrol day, all activities are to be performed with the above in mind. Further details are in [Injury prevention and safety, OP Chapter 6](#).

Avalanche safety

For ski centres with avalanche potential as part of operations, refer to [Avalanche safety, OP Appendix C](#).

Risk Management

In conjunction with injury prevention and safety, risk management is an underlying concept that is the basis for all patrolling activities. Refer to [Risk management, OP Chapter 8](#) for details.

Public relations

Public relations is the activity and behaviour designed to cultivate a desired image. Public relations is the responsibility of every member of the Canadian Ski Patrol.

Refer to [Public relations, OP Chapter 5](#) for more information.

Incidents

Incident site management

Refer to [Incident site management, OP Chapter 7](#).

Record keeping

Record keeping, especially incident **documentation**, is another fundamental aspect of patrolling. Each ski centre will have specific procedures as to what documents are required in certain situations. Each patroller is responsible for knowing ski centre requirements.

There are great benefits to having the area and the patrol work together to keep a daily record. This is a communication of conditions, hazards and corrective actions taken, along with the dates and times.

End of shift

Closing sweep

Closing sweep is done just before the area shuts down, to ensure customers are off the terrain. Subject to area procedures, all patrollers must report for sweep, unless caring for patients or specifically excused by the patrol leader.

The importance of the sweep makes it essential that it be highly organized. Only patrollers completely familiar with the ski area should be put in charge of sweeping remote runs.

Each patroller's sweep assignment must be noted and each patroller must be checked in at the conclusion of the sweep to ensure they have returned and the run has been swept.

Alpine sweep

When possible, at least two patrollers should sweep each run. Procedures must be in place to ensure that if a patient is found, a toboggan will be brought quickly to the site. Note that if a toboggan is being brought down on sweep, it should immediately follow the last patrollers. The duty day is not concluded, and no patroller may leave the designated meeting place or patrol room until all members of sweep, including those left on the top watch, have reported in and the area has been officially closed.

Nordic sweep

The nature of most Nordic ski centres (multiple access points, no formal closing time, large trail networks) preclude an organized end-of-day sweep. Refer to [Nordic areas, OP Chapter 3](#) for strategies.

Reset equipment for next day

Whenever possible, equipment used during the day is to be restocked (if required) and returned to its location at the ski centre, ready for use. If this is not possible, the equipment is to be left in an obvious location with a note for the next patrol shift/day.

Debrief

While not mandatory, a debrief could be part of end-of-day activities. Topics that could be discussed are unusual situations (especially first aid incidents), activities that worked well (successes) and well as procedures that could be improved. [Critical incident stress, AFA Chapter 19](#)

Team building

The strength of the Canadian Ski Patrol is in each member and the strength of each member is their ability to work together as a team. Patrollers are encouraged to take part in team-building exercises to strengthen their personal and professional bonds.

Sign out

A sign-out procedure, using a computer or sign-in sheet, must be used to ensure all patrollers are accounted for at the end of the duty day. Unless area-specific procedures dictate otherwise, no patroller should leave the patrol room until everyone has signed out. Many patrols require their patrollers to stay for the entire day. Know the policy of your ski centre. If this is a requirement at your ski centre, obtain permission from your patrol leader or their designate to leave early. If you leave before the end of the day, it is your responsibility to sign out properly to ensure you are not reported missing at the end-of-day sweep.

Wellness

Physical

A patrol day can be an intense physical experience. If your body feels stressed (or overused), make note and deal with any discomforts. Undertake a physical wellness regime to improve your abilities and fitness level.

Mental

Mental health and wellness is as important to a patroller as physical health and wellness. Refer to [Mental health emergencies, AFA Chapter 19](#), for more information.

Critical Incident Stress Management (CISM)

Any patroller, at any time, can be adversely affected by an incident they were involved in. This is known as Critical Incident Stress. Talking about the incident and how it has affected you with a trained CIS Debriefing will go a long way to minimizing the long-term effects of the incident.

The CSP has people trained to conduct these debriefings. Refer to [Critical incident stress, AFA Chapter 19](#).

2. Alpine patroller



Fig OP 2-1 In the trees - Quebec.

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Alpine Patroller Training & Evaluation Checklist

Alpine qualification begins with the candidate or returning patroller being able to competently demonstrate all ski or snowboard skills on all runs at the area patrolled. Patrollers must qualify on each type of equipment they intend to use while patrolling. Returning patrollers maintain qualification through re-evaluation within a three-year period.

To meet the minimum ski or ride standard, a candidate must be a confident skier or rider, in control of their speed and direction and able to stop at all times on all area terrain. Skiers and riders will demonstrate they are able to adjust the size and length of their turns to match a variety of terrain and snow conditions.

Demonstration of competency in all of the items on the checklist represents the minimum requirement and proficiency of a Canadian Ski Patroller. Area-specific protocols may include more skills than are on this list. It is expected that a patroller will be able to meet or exceed these requirements on all terrain in their assigned patrol area.

Some areas or zones may choose to exceed the skill sheet expectations. For example, they may increase requirements in terms of quality or quantity. This could include requirements for more linked turns, mastery of more extreme terrain or advanced toboggan skills.

- The on-snow checklist is completed by instructors for each patroller completing the on-snow qualification process.
- Results are recorded in the national database as pass/fail/incomplete.
- Records for each patroller are to be kept by the local patrol for a minimum of three years.
- Patrollers have the ability to review the Alpine Patroller Training & Evaluation Checklist with their instructor(s) in order to assess their level of skill and ability in each aspect of training.
- The skills listed on the Evaluation Checklist represent the minimum national standard for qualification.
- A patroller will be qualified as an Alpine patroller upon successful completion of the alpine skiing/snowboarding skills and final alpine simulation evaluation.
- The Alpine training and evaluation checklist and booklet is available to print off for an up-to-date record of the training progression. Refer to [Alpine Checklist and Training Booklet, OP Appendix H](#).
- Checklists and booklets can be carried by the patroller or held by your On-Snow training coordinator.

The following overview gives a snapshot of the required training and evaluation criteria. Use the links to navigate through the sections.

Alpine Patroller Training & Evaluation Overview				CANADIAN SKI PATROL PATROUILLE CANADIENNE DE SKI	
Alpine skiing and snowboarding skills - Evaluation					
<input type="checkbox"/> Travel, turn, climb, stop <input type="checkbox"/> Stable and balanced stance <input type="checkbox"/> Control of speed and direction <input type="checkbox"/> Edging, pivot and pressure control		<input type="checkbox"/> Timing and coordination <input type="checkbox"/> 4-6 turns on moderate terrain <input type="checkbox"/> 4-6 turns on difficult terrain <input type="checkbox"/> Challenging terrain		<input type="checkbox"/> Remove, secure and put on equipment <input type="checkbox"/> Alpine Responsibility Code	
Skier	<input type="checkbox"/> Snowplow			<input type="checkbox"/> Sideslip	
Snowboarder	<input type="checkbox"/> Sideslip (toe and heel edge) <input type="checkbox"/> Traversing (toe and heel edge)		<input type="checkbox"/> 180 degree flat spins down the fall line <input type="checkbox"/> Toe edge hops uphill and hold an edge <input type="checkbox"/> With back foot unstrapped skate, turn left & right, stop		
Equipment		Communication		Ski centre	
<input type="checkbox"/> Alpine uniform <input type="checkbox"/> Alpine toboggan inspection		<input type="checkbox"/> Radio operation		<input type="checkbox"/> Trail map and navigation	
Incident site management					
<input type="checkbox"/> Scene survey <input type="checkbox"/> Communication (radio, whistle, hand) <input type="checkbox"/> Teamwork, roles, competency, safety		<input type="checkbox"/> Marks incident site <input type="checkbox"/> Secures toboggan and equipment <input type="checkbox"/> Loading and positioning a patient		<input type="checkbox"/> Site clean-up <input type="checkbox"/> Transport of equipment <input type="checkbox"/> Racer Down Protocol	
Alpine toboggan skills -- Pre-Toboggan training					
Skier		Snowboarder (toe & heel edge)		Pre-toboggan Drills	
<input type="checkbox"/> Falling Leaf <input type="checkbox"/> Pivot turns		<input type="checkbox"/> Patrol sideslip <input type="checkbox"/> Modified pendulum <input type="checkbox"/> Dynamic side slip		<input type="checkbox"/> Handlebar simulation practice <input type="checkbox"/> Tail rope practice	
Toboggan skills		Patient loading and positioning			
Patroller without patient	With patient				
	one patroller	two patrollers			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Communication (whistle, hand, radio)		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Position in handles (stability & balance)		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Check traffic on start stop		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use of brake and toboggan runners		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Route selection		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sideslip, Falling leaf (Skiers) or Pendulum (Snowboarders)		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Snowplow (Skiers)		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Parallel stops		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use of fall line		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Transitions		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Traversing		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Direction change		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Controlled, smooth, safe descent		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pivot turns		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Straight running		
<input type="checkbox"/>	Stopping: at a safe distance, uphill and away from incident scene				
<input type="checkbox"/>	Toboggan secured by at least two points at scene				
Challenging terrain: Steep - Moguls - Ice - Powder *For Reference Only- Not evaluated on National Alpine Checklist*					
Alpine incident simulation - Evaluation					
<input type="checkbox"/> Call to an incident <input type="checkbox"/> Retrieving and inspecting a toboggan <input type="checkbox"/> Bringing toboggan to an incident site <input type="checkbox"/> Securing toboggan		<input type="checkbox"/> Incident site management <input type="checkbox"/> Loading and positioning of a patient <input type="checkbox"/> Patient transport with toboggan <input type="checkbox"/> Unloading patient <input type="checkbox"/> Patient hand off communication		Demonstrates knowledge of home area <input type="checkbox"/> Communication <input type="checkbox"/> Policies <input type="checkbox"/> Procedures	
Modifications to this checklist must be approved by the CSP Vice-President of Training and Development					

Personal equipment

Alpine uniform

The jacket shall be red with the proper markings. These markings will include a white cross on the back, a white cross on both upper arms and an optional white cross on the breast. On the breast

opposite the white cross, there will be a Velcro patch conforming with specifications to accept the official logo and name tag. The colour of the vest must be predominantly red, but may contain some black, depending on style and manufacturer. If wearing a vest, the vest must be tagged with a white cross on the back and allow for the application of the official embroidered name tag on the front left breast.


Head protection

Helmet, helmet liner/toque and balaclava/face mask.

Helmets, helmet covers, balaclavas, face masks or decals should not detract from the professional appearance of the patroller.

Alpine patrol pack

The alpine patrol pack contains everything a patroller needs to perform the duties of the Canadian Ski Patrol. The CSP standard first aid kit is at the core of this pack. Optional items for consideration depending on terrain, event, and availability of optional equipment and/or support are included in the checklist below. Patrollers should consider the "need" for items in their area or at events where services are provided.

Alpine patrol pack		CANADIAN SKI PATROL PATROUILLE CANADIENNE DE SKI 	
Canadian Ski Patrol standard first aid kit			
<input type="checkbox"/> Refer to First aid kit contents, AFA Chapter 1.			
Additional first aid items		Miscellaneous	
<input type="checkbox"/> Pen light (pupil examination) <input type="checkbox"/> Small splints, folding mesh splints (eg. SAM splint) <input type="checkbox"/> Tourniquet <input type="checkbox"/> Oropharyngeal airways (OPAs) <input type="checkbox"/> Other area/venue specific items	<input type="checkbox"/> Rope/pieces of cord <input type="checkbox"/> Ice/Snow Screw <input type="checkbox"/> Coloured survey tape <input type="checkbox"/> Tags for tagging patient equipment <input type="checkbox"/> Small insulated pad and emergency blanket		
Additional personal items			
<input type="checkbox"/> Nutrition - snacks <input type="checkbox"/> Hydration - water container <input type="checkbox"/> Insulation - extra layers/gloves <input type="checkbox"/> Sun - sunscreen/lip balm <input type="checkbox"/> Navigation - map/compass/GPS <input type="checkbox"/> Ski/snowboard tool	<input type="checkbox"/> Illumination - head lamp & batteries <input type="checkbox"/> Repair - multitool/knife/repair tape <input type="checkbox"/> Shelter - emergency bivy/thermal blanket <input type="checkbox"/> Fire - waterproof matches/lighter/candle <input type="checkbox"/> Hand/foot warmers <input type="checkbox"/> Small folding saw for cutting branches		
Communication (resort-specific)		Avalanche (resort-specific)	
<input type="checkbox"/> Radio <input type="checkbox"/> Cell phone, portable charger <input type="checkbox"/> Map of area	<input type="checkbox"/> Transceiver <input type="checkbox"/> Shovel <input type="checkbox"/> Probe		
All items may be carried in an approved waist pack with or without a white cross. Alternatively, an approved backpack or an approved vest marked with a white cross may also be used.			

Radio operation and communication protocols

Each ski centre will have different communication protocols. Knowledge of those protocols is essential to the competent and efficient working of the ski patrol.

Radio operation and communication techniques are covered in [Communications, OP Chapter 4](#).

Local area

Trail map and navigation

Patrollers must demonstrate their knowledge of the local area, including:

- Lift names and locations
- Run names and toboggan cache locations
- Facility locations and services
- Navigation from one point to another
- Evacuation centres
- Safety Data Sheet locations
- AED locations
- Addresses and directions to nearest medical facilities

Area protocols and equipment

Ski centres often have their own medical and operational protocols, as well as specialized equipment. Patrollers must be trained and qualified or appropriately certified to use area-specific equipment and procedures.

Examples of area specific equipment and protocols:

- Entonox, Pentrox or other pain management methods
- Naloxone use
- Traction devices (e.g. Sager splint)
- Trauma pack
- Oxygen equipment
- Vacuum mattress
- Rope belay kit for toboggans in extreme terrain
- Search and rescue protocol
- Lift evacuation protocol

Alpine skiing and snowboarding skills

To begin alpine on-snow qualification training, the candidate must first successfully complete a ski or ride ability evaluation in the discipline in which they wish to become qualified. Alpine patrollers who are being re-qualified must also successfully complete this evaluation. To meet the minimum ski or ride standard, patrollers must be a confident, with control of their speed and direction and able to stop at all times. Patrollers are required to competently and safely ski or ride all the terrain at the ski area they patrol. Alpine skills are evaluated progressing from easier to more difficult terrain. Candidates must qualify in alpine skills before progressing to incident site training and pre-toboggan training. Patrollers must have the fitness, flexibility and strength to successfully complete the alpine skills portion of the evaluation.

Travel, turn, climb, stop

Skiers must be able to skate to travel across flat terrain. Snowboarders must be able to remove one foot from their board and kick/slide over flat terrain. Both skiers and boarders must be able to ascend up-hill. Skiers must be able to skate, sidestep or walk (herringbone) up-hill. Snowboarders must be able to hop or slide/walk up-hill. Every skier and snowboarder must be able to slide down-hill, turn in both directions and stop in a safe and competent manner.

Stable and balanced stance

Maintain balance over skis or snowboard throughout the evaluation.

Control of speed and direction

Demonstrate control over speed and direction at all times.

Edging, pivoting and pressure control

Initiate turns using edging, pivoting and pressure control to complete smooth, controlled turns throughout the evaluation.

Timing and coordination

Demonstrate effective timing in ski/ride actions based on terrain and snow conditions. Demonstrate effective coordination in the smooth application of all ski/ride skills for smooth and efficient movements.

4-6 turns on moderate terrain

Ski/ride, combining balance and stance, control of speed and direction, and edging, pivot and pressure control.

- Round, long-radius parallel/telemark/free ride turns
- Linked short-radius turns, full stop and continue

4-6 turns on difficult terrain

Ski/ride, combining balance & stance, control of speed and direction, and edging, pivot and pressure control.

- Short-radius parallel/telemark/free ride turns in the fall-line on steeper terrain and in moguls if available
- Sideslip and pendulum

Challenging terrain

Demonstrate controlled, linked parallel/telemark/free ride turns on challenging terrain. Challenging terrain can include:

- Ice

- Boiler plate
- Steep
- Powder
- Crud
- Chopped powder
- Breakable crust
- Un-groomed snow

Remove, secure and put on equipment

Safely and efficiently remove, secure and put on skis or snowboard while on a variety of pitches.

Alpine Responsibility Code

Know and model the Alpine Responsibility Code or Mountain Code of Conduct (Quebec) at all times. Refer to [Responsibility codes, OP Appendix B](#).

Skier-specific skills



Fig OP 2-9. Peter Kelly making advanced turns look easy – Owls Head, Quebec.

Snowplow

The snowplow is used to control speed while free skiing or driving a toboggan. Snowplow to approach lift lines, trail merges, heavy traffic areas or incident sites. Snowplow when driving a toboggan to start a descent, at trail merges, before a pitch change or an approach to incident site, or any time slowing is required for patient comfort.

Terrain selection is important to make this skill work for the patroller. Typically, the snowplow is used on less severe terrain (minimal slope) to control speed. The more severe the terrain, the more tiring this skill will become and the more difficult it will be to maintain the plow position and control speed.

It is important for the patroller and candidate to realize that the snowplow, while patrolling, is largely used for braking and speed control. It is used to control speed during a descent, often in the handlebars of the toboggan. A patroller can control speed by applying additional pressure to the inside edges of the skis while widening the "V" shape. However, controlling speed using the snowplow requires physical effort. To preserve energy, the patroller should use the braking toboggan's braking to effectively control speed and stop.

Sideslip

The braking power of the sideslip is used to progress down a steeper pitch in a controlled manner. While it can be used while free skiing, it becomes a very useful tool while driving a toboggan. It offers the driver an additional speed control and braking strategy in addition to the braking mechanism of the toboggan.

It is natural to be stronger sideslipping in one direction versus the other. The ability to sideslip in either direction will give the patroller more options and maneuverability.

Sideslip is achieved by keeping skis perpendicular to the fall line while releasing the edges and adjusting weight distribution, if necessary, to allow for movement down the hill in the direction you

wish to travel. When driving the toboggan, the sideslip offers the driver an additional speed control and braking strategy, with the primary being the braking mechanism of the toboggan.

By rolling the knees into the hill, the edges are set and the skis slow or stop downhill progression. The sideslip is a basic maneuver, but even the most advanced skier may encounter places where there is a need to sideslip or perform a variant of the sideslip to control their descent. The sideslip introduces the use of parallel skis to brake. Patrollers may make use of the sideslip or a variant known as the falling leaf as a key maneuver for driving a toboggan down the hill on more challenging hard-pack terrain. The Ski Patrol Side Slip is explained later in this chapter.

Ski pole usage (pole plant)

Alpine skiers use their poles for a number of reasons: pushing off when starting downhill, for strength and support when skating or walking up a gentle slope, and for timing and upper body stability during short-radius turns. In all of these situations, timing and coordination are the important skills. The patroller will demonstrate the use of ski poles while skiing and proper pole plants while executing turns.

Telemark-specific skills

Alpine skiing principles can be transferred to telemark technique with relative ease. The difference between alpine and telemark skiing technique is not one of different principles, but one of different ways of employing the same principles.

Snowboarder-specific skills



Fig OP -2-10: Dan Elliot in the backcountry – Red Mountain, BC.

Sideslip (toe and heel edge)

The braking power of the sideslip is used to progress down a steeper hill in a controlled manner. Sideslip is achieved by releasing the edge of the snowboard while it is perpendicular to the fall line, and adjusting weight distribution, if necessary, to allow for movement down the hill in the direction

you wish to travel. When driving the toboggan the sideslip offers the driver a speed control and braking strategy in addition to the toboggan's own braking mechanism. On a snowboard, lower your body position and adjusting your edge angle and inclination to engage either the heel edge or toe edge to control your speed and downhill progression.

The majority of snowboarders prefer to sideslip on their heel edge when learning, and this dominance can remain even in strong riders. It is important to reintroduce toe edge as it is a vital part of mobility and the development and refinement of edge control. This is especially necessary when driving toboggans.

Traversing (toe and heel edge)

The snowboard patroller must be able to ride safely and confidently on either edge. Situations may require evasive manoeuvres while driving a toboggan. The ability to switch edges and ride out in either direction may be necessary.

180-degree flat spins down the fall line

It may be necessary for the snowboard patroller to switch from heel edge to toe edge while in the bars of the toboggan. A 180-degree flat spin enables the patroller to switch edges in a confined space. Ideally, one should be able to perform flat spins in both directions.

Two practical uses for 180-degree flat spins:

- to overcome snow build-up below the board.
- to rest muscles that may become fatigued during a longer descent

Three toe-edge hops uphill and hold an edge

In addition to moving around on flat terrain, patrollers often need to climb uphill to assist people. Snowboard toboggan drivers may choose to hop while maneuvering the toboggan into the accident site. It is often faster and safer to do that without unstrapping. On steep, icy slopes it is more dangerous to unstrap and maneuver around than it is to have both feet strapped in.

- The patroller will travel/hop uphill and remain in place in a balanced stance

With back foot unstrapped, skate, turn left and right, stop

Snowboarders must be able to remove one foot from their board and kick/slide over flat terrain. They must also be able to maneuver a toboggan into an incident site with one foot unstrapped. This method may be preferred over hopping uphill with both feet strapped in while maneuvering a toboggan on less steep pitches.

Incident site management

See [Incident site management, OP Chapter 7](#), for a detailed description of each of the following:

Scene survey

The first patroller on the scene conducts a thorough survey of the scene and is in charge unless command is turned over to another qualified person. All other patrollers approaching the scene will also do a survey of the scene to ensure the area is safe and secure before reporting to the "first-in patroller."

Communication (radio, whistle, hand signals)

Communicate the need for resources (equipment and additional personnel).

Teamwork, roles, competency, safety

As resources arrive, delegate roles, including:

- Patient care
- Incident site management
- Traffic control

Marking incident site

Mark the site above the incident to notify oncoming traffic that there is an incident below so they take care or slow down.

Securing toboggan and equipment

At the incident site, the toboggan is to be secured at all times by at least two points. All equipment is to be managed such that it is readily available if needed or secured and out of the way if it is not needed.

Loading and positioning patient

The loading method and position in the toboggan is determined by the patient's injury and any relevant medical rationale for a certain position.

For details, refer to [Loading the patient into a toboggan, AFA Chapter 21](#).

Site clean-up

After the incident, ensure that the area is made safe by returning it to its pre-incident condition.

Transporting equipment

Transport the injured person, snow gear and any unused first aid equipment to the first aid facility.

Special considerations for races and special events

Races and special events may have different operational protocols than regular ski patrol operations. It is important that patrollers working a race or special event are familiar with that events procedures.

For a detailed discussion, refer to [Races & special events, OP Chapter 10](#).

Pre-toboggan training

Demonstrate the following skiing or snowboarding skills before driving a toboggan. These skills are essential in controlling your rate of descent and to remove snow build-up.

Falling leaf/modified pendulum



Fig OP- 2-13 Falling Leaf track

The falling leaf/modified pendulum is the key to good toboggan handling. It provides a position of strength and stability, allowing a smooth, controlled descent. Used in coordination with the toboggan braking system, this technique allows the toboggan driver to control the speed of descent and to shed snow for control. In a two-patroller descent, the toboggan driver may direct the tail rope patroller to provide further speed control.

The falling leaf/modified pendulum can also be used to maneuver around moguls rather than through them. The skis/board do not have to be at right angles to the fall-line at all times. This allows for greater flexibility and mobility.

The alpine patroller is to demonstrate the failing leaf or modified pendulum in both directions or edges, maintaining control of speed and direction, and must and explain its use.

Once familiar with the speed control of the falling leaf/modified pendulum, the patroller will demonstrate a transition to the opposite side/edge as they progress straight down the fall line.

Practice terrain may include a pitch and snow condition to allow continuous movement downhill. If the patroller wishes to increase speed momentarily, they should face their skis/board toward the the fall line.

Skier toboggan skills

Patrol Sideslip

Sideslipping is a primary skill for patrollers. It is used for navigating terrain that is narrow, steep or with large moguls, as well as for controlling loaded and unloaded toboggans. What sets patrol sideslipping apart from “ski school” sideslipping is the patroller’s body position.

The skis are kept wider apart and are more aggressively staggered (at least one boot length ahead for the uphill ski) in order to rotate the hips and the upper body into the fall line. This position puts the skier’s weight on the balls of their feet. The upper body rotation into the fall line puts the patroller’s hands in the right place for the toboggan handles or to manage a tail rope.

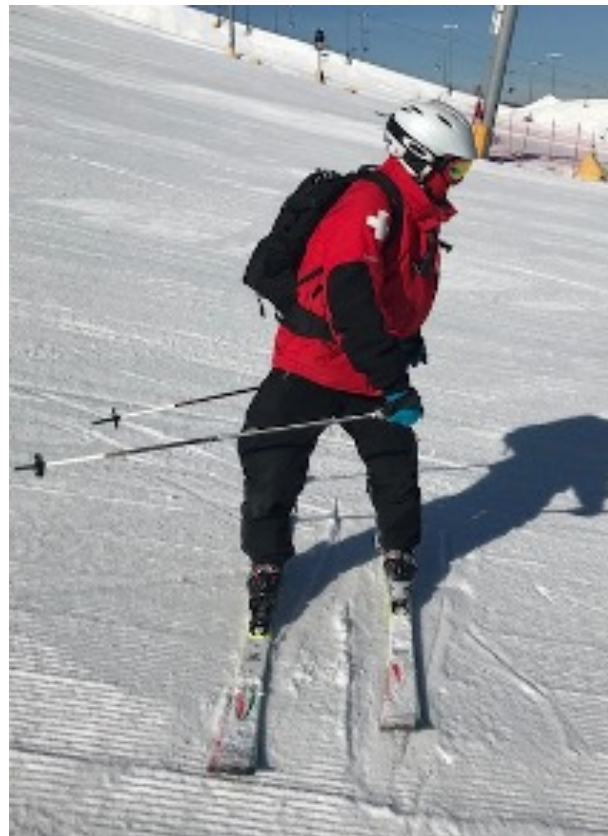


Fig OP 2-14: Terry Abrams showing ski school sideslip on the left versus ski patrol sideslip on the right. Calgary Olympic Park, Alberta



Fig OP-2-15: Video of Falling leaf.

Falling leaf with a turn

There are times using the falling leaf when it is important to face in the opposite direction for better route awareness, recover from muscle fatigue or to maneuver around heavy snow build up. The transition, progressing from facing in one direction to facing in the other, is through an intermediate snowplow.

The skier must be able to complete the falling leaf maneuver facing in either direction prior to attempting this transition.

Pivot turns on skis

A pivot turn or slip consists of a pivot and a slip, maneuvering skis 180 degrees across the hill and sliding downhill within a narrow corridor (think slow-motion hockey stop). This move allows you to complete turns in tight places without coming to a full stop between.

This technique is used when driving an unloaded toboggan safely and effectively to an incident scene and is taught to allow speed control on a moderate to steep slope when driving the toboggan down the fall line, reducing lateral travel. While driving a toboggan and using the sideslip or falling leaf on moderate to steep slopes, the pivot turn is used to face the opposite direction. This will minimize time in the fall line where the toboggan will force increased speed.

This technique takes out any aspect of carving and helps to control the acceleration zone. The pivot turn starts with the skis perpendicular to the fall line, with hips and upper body facing downhill. Bring hips over the feet to flatten the ski and pivot skis from ankles 180 degrees with hips continuing to face downhill.



Fig OP -2-16: Video of pivot turns.

Snowboarder toboggan skills



Fig OP2-17(1): Snowboard toboggan driver. Boler Mountain, Ontario

Modified pendulum

The snowboard patroller is to demonstrate the modified pendulum, maintaining control of speed and direction, and explaining its use.



Fig OP 2-17(2): Modified pendulum video.

The purpose of the modified pendulum is to allow the toboggan to track straight down behind the toboggan driver's path. It is a slower mode of transport than the dynamic sideslip.

Pendulum with a change in edge

The patroller is to demonstrate a modified pendulum on both toe and heel edges. The transition from heel edge to toe edge is made by quickly rotating the board 180 degrees to the opposite edge by flattening the board base on the snow, and pulling or pushing feet in opposite directions.

This technique allows the rider to rest muscles that may become fatigued during a long descent. Shorter runs may not require a change from heel to toe edge. This change in edge and direction will also act to overcome snow build up below the board.

The patroller will demonstrate this pendulum change in both directions (heel to toe edge and toe to heel edge).

While on toe edge, the lower body will be counter-rotated, the upper body will be facing the direction of travel.

Dynamic sideslip

This technique allows the patroller to drive the toboggan with the stopping power and control of the sideslip and the maneuverability of the pendulum. It has the edge control of the sideslip but more dynamic with shorter and faster downhill movements opposed to the side to side movements of the modified pendulum.

Having become familiar with the braking power of the sideslip and the maneuverability of the pendulum, the candidate will be able to combine the functions of both techniques to discover and practice the dynamic sideslip. The candidate will be able to show good edge control as they progress straight down the hill.

The candidate must be able to execute the Dynamic Sideslip on both toe and heel edge.

Toboggan simulations

Handlebar simulation practice

The new patroller will not have experienced driving a toboggan, nor the stance required when driving within the bars of the toboggan. It is important to transition the pre-toboggan ski and ride skills from free skiing/riding to driving within a set of handlebars without the weight and complexity of the toboggan.

For this exercise, simulated toboggan handlebars are required. Bamboo poles, ski poles or a fabricated device can be used.



Fig OP 2-19: Toboggan handle bar practice.

Tail rope practice

The new patroller will not have experienced being on a tail rope. This skill can be developed without the presence or weight of an actual toboggan. The patroller on the tail rope will respond to directions of the toboggan driver to assist in speed control or to maintain the stability of the toboggan when in a mogul field or traversing a slope.

A tail rope can be used when hill protocol or terrain dictates, or when the toboggan driver requests assistance.



Fig. OP 2-20: Tail rope practice.

Alpine toboggan inspection

Toboggans are inspected at the beginning of each day and after each use to ensure proper operation and contents. Toboggans are packed so supplies can be obtained quickly and the patient loaded easily. Each area will have a list of toboggan contents and of locations where the toboggans are placed. Ensure all equipment is dry and clean when packing toboggans.

With any vehicle, the driver is responsible for the condition and safety of their vehicle prior to driving. The same is true of the toboggan. The toboggan driver should make a quick but thorough check of the toboggan, brake, handlebars and other components prior to driving to an incident site or for practice.

Alpine toboggans	
Toboggan Inspection	Contents Check
<input type="checkbox"/> Shell <input type="checkbox"/> Runners <input type="checkbox"/> Handles <input type="checkbox"/> Brake <input type="checkbox"/> Tail rope <input type="checkbox"/> Cover	<input type="checkbox"/> 4 cardboard splints <input type="checkbox"/> Toboggan pad <input type="checkbox"/> Two blankets <input type="checkbox"/> Backboard <input type="checkbox"/> Straps <input type="checkbox"/> Cervical collars
Toboggan contents may vary at each area.	



Lift-assisted toboggan transport

Procedures vary from ski centre to ski centre, due to the variety of lifts and types of toboggans. Follow all procedures carefully to ensure the safety of fellow patrollers, lift operators and the snow sliding public.

Each ski centre will establish a lift uploading protocol for toboggans that each patroller will be trained in. Uploading protocol considerations should include:

- Lift operators and patrollers are trained at each area in toboggan loading and unloading procedures
- Patroller taking the toboggan uphill is responsible for final check of lift device
- Ensure equipment is secure and properly placed for balance
- Communicate with lift operators and the public to ensure safe approach to lift
- Public asked to hold loading, lift may be slowed or stopped
- Ensure proper distance ahead and behind toboggan on lift
- Procedure for riding lift with toboggan (one or two patrollers)
- Unloading - safety of area assured by other patrollers, lift slowed or stopped



Alpine toboggans and driving skills

Alpine toboggans

Alpine toboggans are designed to transport a patient from an incident site to the next level of medical care. They may also be used to transport individuals to the base of the slope following equipment failure or a person's inability to descend the slope on their own. To achieve on-snow qualification, a patroller must safely and competently demonstrate skills and techniques for driving and tail rope assist.

There are a variety of toboggan designs, makes and models in use at alpine ski centres.

Toboggans generally have the following features:

- Handle system, with option to lock handles in position
- Brake system, with option to run with chains engaged or disengaged
- Bottom runners or skegs of different designs and materials to provide stability and steering in different terrain and snow conditions
- Tail rope for securing or to allow two-patroller operation.

There are other alpine toboggan designs that are commonly called a two-person toboggan or brakeless toboggan. These toboggans include:

- A toboggan that requires two patrollers, one driver and one on a tail rope, as there is no chain brake system or locking bar mechanism
- A toboggan with fixed front and rear handlebars (removable) with no chain brake system

It is important to note that alpine toboggans are manufactured with different design features that require distinctly different driving considerations. Patrollers will be introduced to design and driving features and characteristics of the different toboggans used at their resort.

Toboggan skills

Communication (verbal, whistle, hand, radio)

To successfully respond to an incident, effective communication among the entire team is required. Various methods are available to the patroller. The team communicating during an incident may include the dispatcher, day leader, first-in patroller, patrollers providing coverage at merges and the toboggan team.

Clear and concise communication is maintained between the driver and the rest of the toboggan team. The driver must advise when and where they change direction, descent speed or stop. See [Methods of communication, OP Chapter 4](#).

Position in handles (stability & balance)

Patrollers are positioned in the handles so as to maintain a balanced stance, with the ability to effectively steer, control speed and, depending on the type of toboggan, engage or disengage the braking mechanism.

- The patroller stands between the handles in normal skiing or riding stance.
- The upper body remains facing down the fall-line.
- Driver positioning is dependent on the body type of driver, the make and model (design) of toboggan, the brake mechanism, and the size, weight and position of the patient.
- The driver controls speed through engagement of the braking mechanism and with different ski/ride techniques.

Check traffic on start

Before starting to move, shoulder check - over both shoulders - to ensure it is safe to proceed. Communicate with those around that you are about to move with the toboggan.

Use of brake and toboggan fins

Different makes and models of toboggans have different braking mechanisms and fin or skeg designs. The toboggan driver will demonstrate knowledge and competence regarding when and how to engage and disengage the brake while keeping the fins in contact with the snow. The patroller will demonstrate this knowledge and competence with different toboggan makes and designs in use at the ski centre.

Route selection

The toboggan driver is responsible for choosing the route and the method of controlling the descent. In every decision, consider safety for the toboggan driver, the patient, the snow sliding public and for fellow patrollers. Depending on the terrain and snow conditions, patrollers may, in some cases, remove their equipment and walk the toboggan. In very steep terrain or in icy conditions, it may be necessary to belay the toboggan up or down a trail. Follow all local area procedures with regards to challenging terrain.

When taking a toboggan downhill, patrollers should:

- Stay close to the fall-line. If traversing a slope is necessary, it must be done very cautiously, only on relatively flat terrain and where oncoming traffic can see the toboggan.
- Ski down the side of the trail; it is usually smoother and safer, with fewer moguls and less traffic.
- Ski around moguls in the trough, providing the smoothest ride possible.

Careful, safe route selection is critical to toboggan handling. Distance, trail conditions, terrain, patient condition and comfort, and the traffic on the trail must all be taken into consideration. It may be safer, faster and less tiring to take a longer route with flatter terrain than to use a shorter, steeper trail. Steep pitches and icy areas should be avoided. A safe, smooth and efficient ride down is the goal.

Parallel stops

A toboggan driver will demonstrate a parallel stop. A parallel stop is used when an immediate complete stop is required due to unforeseen circumstances such as traffic or debris that was not seen or anticipated. Driver precautions should be taken to ensure this is used in an emergency only.

- The patroller must be sure the toboggan is following directly behind them and the route is down the fall line, or just coming into the fall line.
- With a quick, crisp movement, the patroller brings their skis or snowboard to right angles with the fall line and uses their edge or edges to make aggressive contact with the snow to come to a stop.
- The patroller's upper body remains facing down the fall line, with both hands in front.
- For stability, skis should be hip width apart.

Use of fall line

Keep the toboggan in the fall line as much as possible unless traversing. Toboggans have the potential to be overturned while moving across the fall-line.

Transitions (safe, smooth, controlled)

Sideslip to falling leaf or sideslip to modified pendulum (slower to faster)

The toboggan driver is responsible for controlling speed using ski/ride skills in combination with other speed control techniques. The toboggan driver will demonstrate a sideslip to falling leaf (skiers) or sideslip to modified pendulum (snowboarders) and back again while maintaining the toboggan in the fall line with both an unloaded and a loaded toboggan.

Snowplow to falling leaf / dynamic sideslip to modified pendulum (faster to slower)

The toboggan driver is responsible for controlling speed using ski/ride skills in combination with other speed control techniques. The toboggan driver will demonstrate snowplow to falling leaf (skier) or dynamic sideslip to modified pendulum (snowboarder) with both an unloaded and loaded toboggan.

Traversing

Safely demonstrate moving from one side of a slope to another across the fall line.

- When traversing on a slope, a path should be chosen where the toboggan passes over the top side of moguls so that the angle is kept as flat as possible and where all traffic can see the toboggan and the patroller.
- Provide the maximum possible amount of lateral stability by keeping fins in contact with the snow.
- When there is need to traverse, consider the need for a tail rope patroller to assist in ensuring the stability of the toboggan and patient.

Direction change

Being able to change direction and maintain control of your speed is an essential skill set of any ski patroller. They must be able to do so as conditions and circumstance dictate. This skill is imperative when handling any toboggan unloaded or loaded.

The patroller must be aware that when changing direction while driving a toboggan, it is imperative to check for traffic in all directions prior to the direction change.

Controlled, smooth, safe descent

All patrollers must consistently be able to accomplish this objective at all times, whenever they handle any toboggan, unloaded or loaded.

Achieving a controlled, smooth and safe descent requires every skill a patroller has been taught when skiing, snowboarding and toboggan handling. It is the end result of combining all the skills the patroller has as well as sound judgement and sharp situational awareness.

Pivot turns

The unloaded toboggan should be run at a comfortable speed while skiing. Depending on the toboggan, the degree of slope and all other discussed factors, a combination of all driving techniques, including pivot turns provide the best control.

Straight running

Straight running or parallel skiing may be required when travelling across terrain with flatter sections.

Long-radius turns

Long radius turn may be used (depending on the manufacturer's recommendations and area management policies) while driving unloaded toboggans with deeper fins/skegs that will allow the toboggan to track behind you.

Long-radius turns are not be used while transporting a patient.

Faster toboggan running

The snowplow and dynamic sideslip are strong techniques for bringing a toboggan down a pitch at a faster rate. On shallow or moderate grades, toboggan drivers can use these techniques when falling leaf and modified pendulum are too slow.

- The patroller positions them-self in the parallel running/free riding stance with the bar at waist level. A skier positions themselves in a straight running stance and transitions between straight running and fast snowplow down the fall-line. A boarder positions themselves in a straight running stance and transitions between straight running and dynamic sideslip down the fall-line



Fig OP 2-31: Fast snowplow technique.

Challenging terrain (steep, moguls, ice, powder)



Fig OP 2-28: A steep run in Eastern Canada.

On challenging terrain, use a tail rope person if possible. In some cases, it may be best to belay the toboggan down the slope. Follow all area training and procedures when using this technique.

Steep slopes may require falling leaf, pendulum or sideslipping down the fall-line, but parallel/ telemark skiing or free riding is the preferred method of handling an unloaded toboggan. In this stance, an emergency stop can be made quickly and effectively. It allows the patroller to move swiftly and safely to the site, and is less tiring than other skiing/riding techniques.

Positioning of the toboggan driver on a steep pitch will depend on the driver's body type and the design of the toboggan. The patroller will demonstrate a safe, controlled descent.

- If necessary, on steeper terrain the patroller may allow themselves to move back in the handlebars until they are against the crossbar. This allows the toboggan to rest against the patroller, and the larger leg muscles are used to hold back the toboggan.

Moguls

- If at all possible, the toboggan driver should avoid driving a toboggan through a mogul field. If starting out in moguls, traverse out of the moguls at the earliest opportunity. Knowledge of toboggan design and driving capability are key in navigating a mogul run.
- Choose a route near the fall-line that keeps the toboggan flat. Travelling over the side of a mogul may cause the toboggan to tip.
- If possible, toboggan handles should be unlocked to keep the runners/fins/skegs in constant contact with the snow. Chain brake can be disengaged to prevent catching on a mogul. A tail rope patroller can be used for both stability and assisted speed control.
- The driver may ride/ski outside the handlebars for better view of the terrain.

- If handles cannot be unlocked, toboggan handles should be lifted high when going over moguls to prevent the chain from grabbing the top of the mogul and to keep the fins in contact with the snow.

Ice

If it is necessary to transport a toboggan over challenging, icy terrain, a tail rope person should be used. It also may be best to belay the toboggan down the slope. Refer to [Belay, Op Appendix E](#).

Powder

Driving a toboggan in powder conditions can be challenging. The issue is the buildup of snow, both in front of the toboggan and also below the skis/snowboard.

Refer to [Skier toboggan skills, OP Chapter 2](#) or [Snowboarder toboggan skills, OP Chapter 2](#) for details regarding toboggan handling that will assist in powder conditions.

Stopping: at a safe distance, uphill and away from incident scene

Slow down and stop above and to the side of the incident site, close enough to communicate with the patroller in charge, but with enough room to manoeuvre the toboggan as directed.

Then follow approach directions from the patroller in charge. Depending on the toboggan being driven, the driver may need to lock the handlebars into position and engage the brake prior to positioning toboggan at incident site.

Toboggan secured by at least two points at scene



Fig OP 2-29(1): Toboggan secured to a tree.



Figs OP 2-29(2) and OP 2-29(3): Toboggans secured with a snow screw.

The toboggan should be secured in at least two ways at the scene. It should be positioned across the fall line with enough downward angle to engage the chain brake. Unless the driver is needed to assist with the patient, they should remain in the handles with the handlebars locked and brake engaged. Thus the brake and driver are providing two secure points.

If driver leaves the handlebars, the toboggan must be secured mechanically by another means so that it remains secured by at least two points. These could include tying off to a fixed object such as a tree, snow gun or water hydrant. A securing device like an ice screw, snow screw or stomp tube or a ski driven into the snow could also be used.

For more details about the incident site see [Securing the incident site, OP Chapter 7](#).

Driving an unloaded (no patient) toboggan

Depending on the terrain, snow conditions, the toboggan manufacturer’s recommendations, the patroller’s ability level and local protocols, the toboggan can be run either with the toboggan handles locked and with the chain engaged, or with the handles unlocked and with the chain brake not engaged. Subject to the caveats provided, the patroller may use his or her discretion in determining the method used, provided they have been trained in each technique.

Patient loading positioning

The patroller-in-charge at the incident site is responsible to direct and ensure patient assessment, treatment and readiness for transport. They will direct the toboggan driver to approach the site and position the toboggan for loading the patient.

The toboggan driver is responsible for all aspects related to the toboggan and transport. They will ensure the toboggan is safely and securely positioned for loading and for provision of supplies as required at the site.

The toboggan driver and patroller-in-charge of the site will communicate to confirm the patient’s injury and any medical rationale for the position of the patient within the toboggan (e.g. head uphill or downhill; need for leg elevation; lying on side, etc.). Upon agreement, the patroller-in-charge will organize the loading while the driver ensures the toboggan is secure with the assistance of other patrollers as required. The patient will be introduced to the driver and patrollers involved in the loading. For more information refer to **Loading the patient into the toboggan, AFA, Chapter 21.**



Fig OP 2-23: Toboggan manufacturers used across Canada.

Patient positioning considerations

Head uphill vs head downhill

In reaching a final decision about the positioning of the patient, head up or head down, consider all factors but the most important factors are patient safety and patient comfort. Most patients are much less apprehensive if they can see where they are going so having a patient's head up-hill is the preferred method of transport.

The toboggan driver will determine where in the toboggan (toward the front or toward the back) the patient will be placed. This decision is based on:

- Make and model of the toboggan (design)
- Weight and size of patient
- Body type of toboggan driver
- Terrain, snow conditions and distance to destination

The toboggan must be secured before a patient is loaded. The toboggan must be well padded for patient comfort and the patient is always secured into the toboggan. The patient should be protected as much as possible from the elements, such as wind, snow/rain, and flying snow. The method of evacuation depends on the resources available, terrain, snow conditions, and patient considerations.

Prior to transport and when moving, the toboggan driver will:

- Ensure the handles are locked and that the chain is in the operating position prior to starting
- Explain to the patient what will occur during the transport including reference to communication and stopping, possible noise from chain, and snow spray, as well as description of terrain and what may be expected
- Select the route and direct patrollers to cover merges, high traffic areas, patient monitoring and tail rope (if necessary).
- Request assistance to manoeuvre toboggan downhill as necessary and will move following safety checks.
- Ensure safe departure from site checking for traffic and other potential dangers
- Begin with speed control techniques and test the braking mechanism in the first few metres to ensure safe operation.

In a "load and go" situation, all steps must be followed, but in an expedited manner to ensure the patient arrives at the next level of care safely as quickly as possible.

For a more review of this subject, refer to [Transporting a patient by toboggan, AFA Chapter 21](#).

Patient transport with toboggan

The toboggan driver must ski/ride safely and stay in control. The smoothness of the ride and comfort of the patient are of utmost importance.

- The chain is used to assist with speed control of the loaded toboggan.
- On gentle slopes, patrollers primarily use the snowplow/dynamic sideslip to control speed. As with an unloaded toboggan, the patroller moves back in the handles and lifts up with their legs to release the brake.
- On intermediate slopes, the patroller will primarily use techniques with more edge, notably the snowplow/dynamic sideslip, and will move forward in the handles so pressure is placed on the chain to brake the toboggan.
- On steeper slopes or when snow buildup is expected, patrollers mainly use the falling leaf/modified pendulum or side slip techniques. Hands are placed in front of the patroller on the sides of the handle(s). The



Fig OP 2-33: Tail rope patroller using off hip belay method.

patroller can move back in the handles to allow the crossbar to sit against their hip. This allows the patroller's legs to assist with the weight of the toboggan.

Note: Patrollers must be able to change to any position (parallel/telemark, snowplow, falling leaf or sideslip on skis; or straight running, dynamic sideslip, modified pendulum or sideslip on snowboards) without turning out of the fall line.

Unloading patient

The decision about how to unload patient from the toboggan is made considering several factors. Refer to [AFA Chapter 21](#).

Patient hand-off communication

Provide the receiving patroller or more advanced medical care with all pertinent information regarding the patient's injuries, condition when found, changing condition, treatment given and response to treatment given. For more information see [Documentation, OP Chapter 7](#).

Tail rope skills



Fig OP -2-33: Patient loaded, in transport.

The toboggan driver gives direction and the tail rope patroller should only be applying (emergency) brake when requested. It is not a constant brake position. The driver has two means of braking before additional braking is applied. Their skis/board and the chain brake. If the driver is fatigued, they can ask for increased braking from the tail rope patroller. There are times where the standing portion of the rope slack will be taken up by the free hand and held to manage stability in moguls, etc.

The relative speed of the descent is communicated between the two toboggan operators (driver and tail rope patroller).

The technique used by each patroller will change depending on many factors ie. snow conditions, pitch of terrain, weight of the toboggan etc. It is up to the patroller to know their ability and choose which technique to use to safely and competently deliver the toboggan or the patient and toboggan to the destination.

Teamwork and communication

As stated previously, the toboggan driver is responsible for all aspects of toboggan operation, including directing the actions of the tail rope patroller.

The tail rope patroller will follow the toboggan driver's directions to assist in speed control on steep terrain and to help stabilize the toboggan when traversing or on uneven terrain such as moguls.

The tail rope patroller's role in speed control is to respond to the toboggan driver's request for additional braking beyond the driver's use of the toboggan braking mechanism and their own speed control techniques. The tail rope patroller's speed control actions may be compared to the "emergency brake" in a vehicle, used when normal brakes are not sufficient to slow or stop the vehicle. The tail rope

patroller's position is very dynamic and is rarely in a straight line behind the toboggan. The patroller must always be adjusting their positioning to keep the toboggan in the fall line.

Clear and concise communication between the driver and tail rope patroller is vital. The driver must advise the tail rope patroller of changing conditions ahead, when and where they change direction or descent speed, or when they plan to stop. The tail rope patroller must advise the driver of any concerns related to the patient and safe transport. All communication must be acknowledged by both patrollers. See [Methods of communication, Op Chapter 4](#).

- The driver explains the conditions ahead, the route to be followed and the ski/ride technique they will use. When the toboggan driver is certain the tail rope patroller is ready, they both check the patient, then look uphill to ensure the way is clear, and then the driver moves forward into the fall-line.
- The tail rope patroller holds the rope taut, but not in a braking action, providing stability as the toboggan moves into the fall line.
- The toboggan driver will follow all steps in preparation to transport and in starting to move (testing braking mechanism, etc.) as they would if driving the toboggan without a tail rope patroller.
- The toboggan team should start slowly and cautiously. It is easier to gain speed than to slow down.
- They then proceed down the fall-line.

Rope secured and handled safely

The tail rope patroller maintains a position up-hill of the toboggan to ensure the toboggan does not slide laterally, and acts as an emergency brake if necessary.

Since each person is physically different, the patroller needs to discover the safe and effective tail rope technique that will work best for them. The rope positioning used by the tail rope patroller may differ depending on the terrain, their body or their preference. Two recommended techniques are described in Appendix H. It is important for the patroller, regardless of how the tail rope is controlled, to maintain a stance and balance that is safe and stable regardless of the terrain.

Tail rope handling methods

There are two common methods of handling the tail rope: wrap around and belay off hip.

Wrap around method

The patroller positions the rope by wrapping it once around themselves at the top of the pelvis (below the bumbag for patrollers wearing that type of first aid kit). The positioning allows the tail rope to pull against the body, not the arms.



Fig OP 2-35 (1): Wrap rope around body.



Fig OP 2-35 (2): Free end over rope.



Fig OP 2-35 (3): Free end under rope.



Fig OP 2-35 (4): Hold free end and rope.

Belay off hip method

The patroller uses their back hand as their anchor, with the rope held firmly against the uphill hip. This will act as a belaying break as the body is rotated slightly, or the working end is moved further around on the hip. The patroller should not try to control the rope with the front arm or by using arm strength alone.



Fig OP 2-36: Off hip belay method.

Stabilize toboggan during traverse

One use of the tail rope is to provide stability while traversing. Once the direction is given by the driver to proceed, the tail rope patroller moves behind the toboggan and takes up all the slack from the line. If the fall line does not lie directly on the route of the toboggan, the tail rope patroller's role is to provide stability for the toboggan. This will prevent the toboggan from sliding sideways down the fall line. If it becomes necessary to traverse a slope, a path should be chosen to:

- Allow the toboggan and patrollers to be seen by area traffic
- Keep the angle as flat as possible where the toboggan passes over moguls and pitch changes.
- Ensure the tail rope patroller is directly above the tail of the toboggan throughout this manoeuvre to prevent the toboggan from sliding sideways down the fall line.

The driver should ensure the fins or runners are in contact with the snow. If necessary, the driver can push down on the downhill side of the handlebars and pull up on the uphill side to ensure the fins or runners provide the maximum amount of lateral stability.

Make sure both patrollers are watching both above and along their intended path for oncoming traffic. If available, other patrollers can provide traffic control.

Assisted braking on descent

The other purpose of the tail rope is to provide braking when a combination of the toboggan driver and the chain brake are not sufficient to slow or stop the toboggan.

The tail rope patroller should choose a position that will allow them to give extra braking power to the toboggan or even stop the toboggan if necessary.

Toboggan driver or tail rope patroller replacement

During transport of a patient, there may be times that toboggan driver or tail rope patroller may need to be replaced. This may be the result of fatigue, equipment failure or competency on some extreme terrain.

If and when this event occurs, the toboggan driver will bring the toboggan to a safe stop away from traffic, ensuring full communication with the patient and with the tail rope patroller if one is being used.

One option is to have either the toboggan driver or tail rope patroller replaced by a patroller who has been acting as an escort to the toboggan transport. In the event the toboggan driver is too fatigued to drive the toboggan, but could still assist with the tail rope and there are no additional patrollers to assist, it is possible for the driver and tail rope patroller to change positions.

Lastly, if possible, the tail rope patroller could take over for the toboggan driver and proceed without a tail rope patroller. If this is not possible, additional patrol support must be called. The patient's safety, condition and comfort must be considered in these decisions.

Transitions

Sideslip to falling leaf to snowplow or parallel skiing for skiers. Sideslip to modified pendulum to dynamic sideslip, or straight running for snowboarders. These transition manoeuvres must be done under control without the toboggan sliding sideways. The toboggan team must communicate so that both patrollers are prepared for any sudden speed-up or slow-down that can occur during a transition.

Alpine simulation (qualification evaluation)



Fig OP 2-38: Alpine simulation training - Beaver Valley, Ontario.

During training each patroller will experience riding fully strapped into the toboggan. This provides the best understanding of what a patient feels during transport.

Patroller on-snow qualification involves two key evaluations:

- Ski/ride skills
- Incident simulation

New candidates must successfully complete all training elements of the Training and Evaluation Checklist following their ski/ride skills evaluation and prior to their final simulation evaluation. Re-qualifying patrollers may move directly to the final evaluation following the ski/ride skills evaluation. If not successful in the final evaluation, they will be required to complete the appropriate training elements prior to being evaluated again.

New candidates and re-qualifying patrollers must demonstrate knowledge and competence in each of the following skills, as listed in the Training and Evaluation Checklist. All elements may be included in a simulation, or they may be separated depending on the circumstances at the resort and direction of the evaluator.

The elements to be included in the simulation evaluation may be related to any topic in the training checklist but will include:

[Click on the heading to link to a more detailed description of the required competency.](#)

Being called to an incident

A communication is received and responded to appropriately (resort-specific protocol).

Retrieving and inspecting a toboggan

Toboggans and contents are inspected at the beginning of the patrol day. However, a quick inspection before departing considers the following:

- Running surface clean of ice or dirt
- Verify cover is secure

- Lock or unlock handlebars (if equipped) following area protocol or manufacturer's recommendations
- Check brake (if equipped)

Bringing an unloaded toboggan to an incident site

Safely drive the toboggan to the incident site along the most appropriate route and terrain.

Securing a toboggan

Toboggan is secured by at least two points.

A third patroller, if available, can assist in pivoting the toboggan into the fall line by holding a handle or rope hold towards the rear of the toboggan. As the toboggan moves into the fall line the hold is released.

Incident site management

On-site safety and logistical concerns are discussed and managed competently.

Loading and positioning of a patient

Decision is made as to how and where to position patient for transport considering all factors.

Patient transport with toboggan

Toboggan driver must ski/ride safely and stay in control. The smoothness of the ride and comfort of the patient are of utmost importance.

Unloading patient

Decision is made as to how to unload patient from the toboggan considering all factors.

Patient hand-off communication

Information is exchanged with the receiving patroller or more advanced medical care.

Demonstrate knowledge of home area

All ski areas should have a manual explaining local protocols. Patrollers must attend training and in-service sessions at the area where they patrol and become familiar with the ski area trails/runs. Memorize your area map. When visiting or moving to another area, a patroller must learn and practice the protocols of that ski centre.

Policies, Procedures, Communication

Area policies, procedures and communication protocols may be unique to each ski centre. The patroller must be familiar with this information for the area where they are assigned. Your local instructor, team leader, or patrol leader will be your source of this information.

3. Nordic patroller



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Introduction

A common feature of a Nordic patrol is the likelihood that you may be responding to an injured skier on a trail system far from any lodge or facility. The logistics of treating that patient might be complicated by the weather, time of day (or night), clothing choices of the patient and time required to bring an evacuation toboggan to the incident site.

You may be a patroller at a large Nordic centre with readily available services, access to a facility and with evacuation protocols, or your Nordic venue may be small and limited in the services available. You may also be patrolling special events such as races and loppets. Races can be short sprint races in a stadium setting or on longer, more technical trails, and can range from international and national level events to small recreational club events. Nordic clubs often host long-distance loppets, staged races and marathons, where you may be a significant distance from medical treatment services.

In most situations, on routine nordic patrol it is unlikely that an injured skier will be found, treated and evacuated in the same prompt manner as would happen when responding to a reported incident during a formally patrolled event or race.

Each type of event and each venue presents a different set of circumstances. There may be unique problems in finding, treating and evacuating injured skiers. Other aspects that will vary considerably will be the types of facilities and equipment (communication and transportation), distances, number of skiers, trail terrain, etc. The patroller's duties will vary with the circumstances of the event and at the different types of ski areas, necessitating different operating procedures.

While we will discuss methods to help you assist an injured nordic skier who might be some distance from a facility, it is not the intent of the CSP to provide survival training to its members. There are many ways to become trained and proficient in more advanced survival, remote travel skills and map and compass skills. Joining a local search and rescue group or taking additional courses are ways to gain these skills and experience.

The term Nordic centre is used throughout this document to refer to a cross country ski facility or cross country trail system patrolled by a CSP Nordic patrol.

Nordic training and qualification

Canadian Ski Patrol Nordic patrolling performance outcomes

The on-snow performance outcomes identify the essential on-snow requirements for patrollers. Patrollers are required to successfully complete training and evaluation to qualify as a nordic on-snow patroller and, once qualified, will be required to re-qualify at least every three years. The objective of being proficient in these outcomes is to ensure the patroller can travel to an incident scene and evacuate a patient in a professional, expedient and safe manner. There are many ways to master these outcomes and it is crucial that patrollers maintain, develop and improve this set of skills and knowledge.

Performance outcomes and evaluation requirements are included in the Nordic patroller training checklist.

Nordic patroller training and evaluation checklist

The training checklist is a summary of the skills and knowledge that must be demonstrated on snow by a patroller to become qualified.

To begin training related to the on-snow elements of the Nordic qualification, the new candidate must successfully complete the ski evaluation. If not successful, lessons will be arranged or practice will be required until the evaluation can be completed successfully. All items included in the checklist will be assessed and must be complete prior to the final evaluation.

The overview and checklist can be used by a candidate or patroller as a resource to review or practice the on-snow requirements. It will also be used as the guideline for on-snow classes and for qualification of on-snow skills for both new and returning patrollers. It is expected that patrollers will be able to meet the requirements outlined on the checklist. All new candidates and re-qualifying patrollers must successfully complete the two evaluation sections to attain Nordic patroller qualification.

A satisfactory demonstration of all of the items listed on the checklist represents the minimum requirement and proficiency of a patroller on snow. Due to variation of terrain and conditions across the country, zone or area-specific protocols may include additional skills because of variables that are unique to an area. This might include the ability to ski longer distances, the ability to ski in more extreme terrain, advanced toboggan skills or snowmobile handling. It is expected that a patroller will be able to meet or exceed these requirements on all terrain in the assigned patrol area.

- The on-snow checklist is completed by instructors for each patroller who is completing the on-snow qualification process.
- Results are recorded in the national database as pass/fail/incomplete.
- Records for each patroller are to be kept by the local patrol for a minimum of three years.
- Patrollers have the ability to review the [Nordic patroller evaluation & training checklist](#) with their instructor to assess their level of skill and ability in each aspect of training.
- The skills listed on the Evaluation Checklist represent the minimum national standard for qualification.
- A patroller will be qualified as a Nordic patroller upon successful completion of the Nordic skiing skills and final Nordic incident simulation evaluations.
- The Nordic training and evaluation checklist and booklet is available to print off. Refer to [Nordic Checklist & Training Booklet, OP Appendix I](#).
- Checklists and booklets can be carried by the patroller or held by your on-snow training coordinator.

The following training and evaluation overview gives a snapshot of the required training and evaluation criteria. Use the links to navigate through the sections.

Personal equipment

Nordic uniform

The Nordic uniform consists of an approved jacket or vest. The colour of a jacket must be red and the vest must be predominately red, but may contain some black, depending on style and manufacturer. The jacket and vest must be tagged with a white cross on the back and on the breast and allow for the application of the official embroidered name tag or an approved screened Canadian Ski Patrol crest on the front left breast.

Nordic patrol pack


Patrollers are required to have a first aid kit that must be worn or be readily available whenever the CSP national uniform upper body garment is worn. The first aid kit is required to provide immediate first aid service to an injured person. The patroller first aid kit may be carried in a waist pack, backpack or vest. These items must comply with national CSP standards. Refer to [First aid kit contents, AFA Chapter 1](#).

The Nordic patrol pack contains everything a patroller needs to perform the duties of the Ski Patrol. The contents of the nordic patrol pack will vary significantly depending on the type of patrolling. Nordic patrollers may choose to move between a waist pack carrying the basics for a quick ski around the lodge, or a fully stocked backpack with many extras for a loppet or a sweep of a long-distance race. Consider the type of patrolling, number of patrollers available, experience level, ski ability, trail conditions and the current and forecast weather and snow conditions when selecting what to carry.

Backpacks and waist packs should be predominantly black, but may contain some red, depending on the style and manufacturer. The backpack must be tagged with a white cross on the back.

A waist pack may feature a white cross or a screened outline of a white cross. A shoulder harness that obscures the white cross on the vest or jacket must not be used.

Optional items for consideration are included in the checklist below.

Nordic patrol pack		CANADIAN SKI PATROL PATROUILLE CANADIENNE DE SKI 
Canadian Ski Patrol standard first aid kit		
<input type="checkbox"/> Refer to First aid kit contents, AFA Chapter 1 .		
Optional first aid items	Miscellaneous	
<input type="checkbox"/> Pen light (pupil examination) <input type="checkbox"/> Small splints, for example folding splints (SAM) <input type="checkbox"/> Tourniquet <input type="checkbox"/> Tongue depressors <input type="checkbox"/> Oropharyngeal airways (OPAs) <input type="checkbox"/> Ski pole spreader splint <input type="checkbox"/> Emergency Blanket	<input type="checkbox"/> Rope/Pieces of cord <input type="checkbox"/> Hot packs (hand, foot, body) <input type="checkbox"/> Coloured survey tape <input type="checkbox"/> Tags for tagging patient equipment <input type="checkbox"/> Spare toque and gloves <input type="checkbox"/> Wax (+/-) of the day <input type="checkbox"/> Insulated pad to sit/kneel,stand on	
Optional personal items		
<input type="checkbox"/> Nutrition - snacks <input type="checkbox"/> Hydration - water container <input type="checkbox"/> Insulation - extra layers/gloves <input type="checkbox"/> Sun - sunscreen/lip balm <input type="checkbox"/> Navigation - Map/compass/GPS	<input type="checkbox"/> Illumination - head lamp & batteries <input type="checkbox"/> Repair - multitool/knife/repair tape <input type="checkbox"/> Shelter - Poly Sheet or light bivy/emergency blanket and parachute cord/small insulated pad <input type="checkbox"/> Heat - waterproof matches/lighter/candle	

Nordic patrol pack



Communication

- Radio
- Cell phone/external spare battery
- Satellite based communication devices for remote regions
- Whistle

All items may be carried in an approved waist pack with or without a white cross. Alternatively, an approved backpack or an approved vest marked with a white cross may also be used.

Improvised splint

A lightweight speed splint or a small spreader bar is very useful for creating a ski pole splint. This allows you to stabilize a leg injury in the field while awaiting the arrival of a toboggan. These spreader bars are easy to make from either thick plastic or wood, with two holes drilled to allow insertion of the ski pole. This is used in combination with the skier's poles and six triangular bandages.



OP 3-6: Improvised splint.

Caches

Many Nordic ski centres have patrol caches on the trail system. For some facilities without a main centre, these caches may be your only access to emergency supplies. For large facilities with a trail network that takes you a significant distance from the main centre, these satellite caches may allow you to stay with a patient and keep them warm and sheltered until help arrives. Be familiar with the contents and locations of caches in order to reduce the number of items in your patrol pack and quickly, efficiently and effectively put shelter, heat, etc, in place.

The patrol is encouraged to work with the nordic centre to develop a list of cache items needed for that ski area.

The following list gives some examples of items a patroller may have access to in a cache:

- Warm clothes
- Insulated footwear
- Candle and matches in waterproof container
- Insulated pad
- Plastic sheet
- Rescue blanket
- Headlamp and batteries
- Pot with lid and handle
- Portable stove
- Sleeping bag
- Bivy sack

Communications and incident site management

A communication system should be in place that is specific to the Nordic patrol centre, area and type of event. The facility will need to know when patrollers are out on the trails and where they are so incidents can be reported and responded to quickly and accurately. Each Nordic area will have a specific communications protocol, which may include radios and/or cell phones as well as check-in systems. At some remote areas or remote events (e.g. long-distance loppets) this may also include satellite technology. Patrollers should familiarize themselves with the communications system at their facility. Refer to **Communications, OP Chapter 4** and **Incident Site Management, OP Chapter 7**. A method of identifying locations is extremely important, as is a plan on how to get to and from the accident site quickly, safely and efficiently.

If patrolling a remote location, satellite-based communication tools may be your only means to call for assistance. This should be planned out well in advance with the organizers of the event. If the event organizers do not provide such devices, it is usually possible to rent them. In all cases this will depend on a number of factors which must be considered when confirming CSP attendance at events in remote locations.

Trail map and navigation

Nordic patrollers must familiarize themselves with the trail system, locations of emergency shelters and caches.

For the most part, the Nordic patroller is on a developed trail system. It is important to carry a know how to use a trail map or other navigational aid, such as a GPS-enabled devices. The patroller should also be aware of their situation at all times in order to respond quickly and efficiently as needed. Nordic trails can be quite complex, with inner and outer loops, one-way trails (especially on steep hills), connecting trails and intersections, so an important aspect of Nordic patrolling is being able to navigate to and understand the hazards associated with the terrain.

Protocols and equipment

Nordic facilities will have protocols for hours of operation, cold weather and the use of specific types of equipment on the trail system. For example, they may not allow wide backcountry skis, fat bikes, pulks or snowshoes on some groomed trails. Nordic patrollers should familiarize themselves with these protocols.

Commercial Nordic ski centres

Many commercial ski centres offer closed or controlled access to a groomed and tracked trail system consisting of looped trails. These tend to have a high level of service, with parking lots, chalets, washrooms, waxing facilities, radio communication and evacuation. Due to the nature of these facilities, however, an end-of-day sweep or control of after-hours skiing cannot always be done. CSP is encouraged to work with these facilities to develop procedures for after-hours incidents, for example using emergency communication and rescue caches.

Clubs and parks

Member-run and public ski areas exist where trails are developed and maintained by a combination of staff and volunteers. In all cases, these areas can only be patrolled under an agreement between an insured entity and the CSP.



Fig OP 3-8. Former Nordic On Snow Coordinator Al McInnes enjoying some warm weather -Horseshoe Resort, Ontario

In many cases these trails are located on Crown land or on private property, where use is obtained in the form of a lease or permission from the landowner on an annual basis. In most of these cases there is no charge or minimal charge for use of the trails and many of them have several uncontrolled access points. An honour system of payment for trail use and/or parking is often used in many of these areas.

Sweep

In most cases trail systems are extensive and trail conditions vary considerably. Operating procedures must be adapted to each system. Sweeping by snow machine is not usually possible due to the distances involved and the potential for damage to ski trails. In some locations, in place of ski sweep, a check of the parking lots indicates whether or not all skiers have returned. In some areas these cars may belong to overnight campers or late-night skiers, so this may not be a conclusive exercise for such an area.

Many factors can make an alpine-style sweep impractical for Nordic skiing, including trail length, number of trails and access points, trail lighting for night skiing and facilities such as parking lots that are shared with other user groups. Each nordic centre will determine its own requirements for opening and closing the facility.

Shelters

Fig OP 3-9 Nordic shelters.



Nordic patrollers must be able to build a modified emergency shelter using small items they will carry while patrolling. The shelter is a quick barrier to protect the patient, and potentially the patroller, from severe weather. A shelter must provide protection from outside moisture and the chilling effects of wind and cold. While many options exist, the simplest, most quickly constructed winter shelters use emergency bivy bags or plastic sheets. The nordic patroller will acquire the knowledge and skill to build a modified MacDonald shelter using such items as a plastic sheet in combination with skis and poles.

In an emergency, constructing a shelter as soon as possible is important. The Modified MacDonald Shelter is a practical solution.

- Made from lightweight materials that can be carried easily by patrollers: light rope, clear four-mil plastic sheet (90" x 11'), and a small candle
- Constructed quickly over an injured skier (approximately 10 minutes)
- Low interior air volume, easily heated
- Snow piled against the bottom edge of the plastic eliminates any wind penetration
- Patient can be monitored continuously while waiting for assistance
- Patroller can kneel at the head of the patient

Nordic skiing skills

To patrol at a Nordic facility, the patroller must first complete a ski ability evaluation. Skiers who are being re-qualified must also complete this evaluation.

To meet the minimum ski standard, patrollers must be confident, balanced and in control, and have the fitness, flexibility and strength to successfully complete the nordic skills portion of the evaluation. Candidates must qualify in Nordic ski skills before progressing to incident site training and pre-toboggan training.

Nordic patrollers must be on-snow qualified in the classic discipline. This is because it is not easy to ski with a loaded toboggan using the freestyle skate technique. However, both disciplines are used at most Nordic facilities and we encourage patrollers to be proficient and qualified in both techniques. In fact, some types of races and events only offer grooming for classic or skate skiing, so patrollers will have to use one or the other technique in order to patrol the event.

Patrollers must be able to ski the terrain of the facility. Skills are evaluated progressing from easier to more difficult terrain. In general, the evaluation criteria will include:

- Simple tracked and groomed terrain
- Moderate tracked and groomed terrain
- Steep groomed terrain
- Gentle uphill and downhill slopes
- Steep, difficult slopes (uphill and downhill technique)
- Correct cornering technique in and out of the track

Skills description

In general, the following is to be considered in the evaluation process.

Diagonal stride



The skier will be relaxed and balanced, with correct weight transfer from one ski to the other, weight transfer and propulsion onto the front leg and proper use of the wax pocket (“spring loading”).

Poles will be used to propel the skier forward, timing will be correctly offset with poles planted in line with toes, and arms will reach forward and extend back while skiing.

Body position, tempo/cadence and technique will be adjusted to the terrain (e.g., shorten stride and adjust body position going uphill).

Double pole

Skier's ankles and knees will be relaxed, slightly bent and engaged. Core muscles are engaged to crunch down with slight hinging at the hip. Poles are planted in line with the toes and arms and shoulders move together as a unit to propel the body forward. At the end of the push, hands and arms are relaxed. Weight may come off the heels as skier reaches forward, and the ski rhythm will be regular.

Kick double pole

The skier will demonstrate a combination of the skills required for both diagonal stride and double pole while demonstrating a kick double pole. The skier will kick back with one leg while reaching forward with both arms into a strong double pole position alternating legs. Hips will be over knees and knees over toes. The wax pocket will be utilized by “spring loading”.

Herringbone

Uphill ski assessment will include demonstration of the herringbone technique. This should be demonstrated both slowly (walking) to simulate pulling a toboggan, as well as quickly (running) demonstrating a response to an incident. The skier will demonstrate correct body position, adjustment to the terrain, weight transfer and balance. The angle of the skis and width of the feet will be adjusted to the terrain. Sidestep is used rarely but may be useful when pulling a toboggan uphill.

Downhill

The skier will demonstrate a variety of downhill techniques appropriate to the terrain. The ability to control speed and stop will be evaluated, as will the transition between groomed and tracked portions of the trail. The skier will demonstrate stepping out of the track safely and transitioning to a snowplow or partial snowplow in a safe manner that does not affect the groomed conditions. The skier must be able to link six turns in order to slow down utilizing either a snowplow turn, telemark turn or parallel turn. The skier must do a snowplow stop as well as a telemark or parallel stop. The hips, knees and ankles will be engaged, and the body will be well balanced and relaxed in order to absorb the terrain.



While sideslipping down a hill, the skier will be able to move downhill smoothly in one direction without drifting off to one side or the other, while using the base of the ski to slow down and stay in control.

Track change/transition (out of track and back into track)

The skier will demonstrate correct timing and location selection for stepping out and back into the track. The transition will be in control and balanced without affecting the track grooming. The skier will understand the need for communication with other skiers, if relevant, and other safety and grooming considerations. The skier will enter the track by crossing over the track with the outside ski, stepping into the track with the inside ski, then stepping into the track with the outside ski.

Correct cornering technique

The skier will demonstrate correct cornering technique for the terrain and grooming. This will include the ability to control speed, stay in the track on moderate downhill corners, safely step out of the track as needed and do a step turn (not snow plow) on the corner when outside the track. The skier will be balanced, will shift their weight and lean into the corner to stay in the track and will transfer their weight correctly between skis while demonstrating a step turn.

Ski skating

The skier will be asked to demonstrate all of the skate techniques. This includes one, two, offset and free skate techniques. Skate and pole technique will be adjusted to the terrain and will be done smoothly and efficiently. The skier will demonstrate weight transfer, body position and balance between skis, energy transfer between skis and forward leg propulsion. Arm propulsion and coordination will match the skate technique with the energy driving the skier forward.

One skate



When demonstrating the one skate, the skier poles on every step, with poles entering the snow slightly before the weight is shifted onto the new ski. Glide is held on each foot long enough to get the full body weight up and onto the ski with arms up and ready to pole forward. The body core is used to crunch down while poling. The body weight is propelled over and onto the new ski by pushing the foot out to the side (not behind) and the hips are over the knees and knees over the toes at the top of the glide. The skier must demonstrate correct weight transfer, coordination, body position and balance between skis and adjust the tempo and technique to the terrain.

Insert 1 skate video

Two skate

The two skate is the same as the one skate, except the skier is poling on every second step. The arm swing is used for momentum when coming from the gliding side up onto the polling side. The skier should be able to two skate on both the left and right sides in order to adjust for the terrain.

Offset skate

The offset skate is used for inclined terrain. The skier will demonstrate the pole tips entering the snow and the skier stepping onto the foot at the same time, with body weight fully over the poling side at the same time as the pole and foot plant. The step and pole plant is short and powerful with the glide used for recovery. The skier will adjust the tempo and foot width to accommodate the hill terrain and should be able to offset on both the right and left sides.

Free skate

The free skate is used for skating downhill when poling no longer provides additional speed and strength. Poles are not used, but are held in a more or less horizontal position as the arms swing or

drive forward for momentum. The skier is hinged forward at the hips, the core is engaged and legs are bent, providing powerful leg propulsion forward. The glide is balanced, long and extended.



Nordic toboggan skills

The Nordic patroller must be able to transport a toboggan to an incident site. At most commercial nordic resorts, there is snowmobile support through either a lodge or dedicated patrol snowmobiles. Smaller facilities may only have a warming hut and equipment cache available to the patroller. Even at clubs with dedicated snowmobiles for patrol, there will be times that a patroller must be able to ski in with a toboggan, even if its for a few hundred metres from a snowmobile staging area. Skills that will be required include driving (skiing with) the toboggan on a variety of terrain, and providing assistance to the primary driver by using outrigger ropes and a tail rope. Snowmobile drivers must comply with all provincial legislative requirements.

The Canadian Ski Patrol does not provide snowmobile training. Any use of snowmobiles is a resort-specific protocol which is the responsibility of the local area management.

Nordic toboggans

There are a variety of makes and models of Nordic toboggans designed to be driven by a patroller or towed by a snowmobile. In contrast to Alpine toboggans, a Nordic toboggan is often narrower, lighter and seldom has a braking mechanism. Similar to Alpine toboggans, the toboggan will have a weatherproof envelope, a pad and tie-down straps. It will also be designed to be equipped with one or more tail ropes or may have additional ropes at the front to assist the driver in pulling the toboggan on the flat or on uphill grades.

In Canada, a lightweight fibreglass toboggan was developed for use by Nordic patrollers for the 1988 Calgary Olympics. Other commercially designed toboggans may be towed by patrollers or snowmobile. Patrollers must be knowledgeable about toboggan characteristics and proficient in driving any toboggan located at their ski area.

Nordic - improvised toboggans

Patrollers must be able to improvise a rescue and evacuation system if touring or patrolling in an area where radio/phone reception, snowmobile transportation and/or access to nordic toboggans is not

ideal. If the situation warrants it, at least one patroller in a group should carry the equipment required to improvise a toboggan using skis, poles and other items in the patroller's pack.

Nordic incident response simulation (qualification evaluation)

A new or re-qualifying patroller must demonstrate the knowledge and competence to respond to a simulated incident. The incident will be reflective of the patrolling environment, but at a minimum will include:

- Being called to an incident
- Getting and inspecting a toboggan
- Bringing an unloaded toboggan to an incident site
- Securing a toboggan
- Incident site management
- Managing the patient environment (ground pad/clothing/blanket/McDonald shelter, etc.)
- Communication
- Loading a patient, transporting, handing over, unloading, recognizing risk factors (time, darkness, temperature)
- Driving a loaded toboggan
- Patient handoff communication

Demonstrates knowledge of home area, including:

- Policies
- Procedures
- Communication

Alternative winter patrol techniques

The provision of first aid services in the winter may not be limited to the use of skis/snowboards to get to a patient. There are many ways we can reach a patient and there are many types of events where patrol may respond using a variety of tools and equipment. For example, a patroller may be transported by snowmobile to a trail race station or high-risk feature to stand by. Some resorts use snowshoeing or fat biking. In these cases, the resort may establish proficiency standards based on their terrain and conditions, and may ask patrollers to demonstrate their proficiency before approving either a regular or event-specific patrol. As national standards are developed, skills evaluations for these disciplines may be added to this manual. In all cases the decision on alternative patrol methods will lie with the resort, Nordic patrol leader and/or zone president.

Trail etiquette for alternative patrol techniques

Many resorts have designated trails for snowshoe and fat bike, and some allow snowshoeing on Nordic trails. At most Nordic areas, however, you will not be allowed to snowshoe or fat bike on ski trails unless responding to an emergency.

The following section deals with resort-specific winter patrolling using snowshoes or fat bikes.

Patrolling on snowshoes

Many nordic centres and alpine areas have snowshoe trails that are part of the patrol area. As well, there may be a situation where snowshoe access can supplement ski or snowmobile access. While in general, if you can walk you can snowshoe, there are some specific skills that the patroller must demonstrate in order to meet the resort-specific proficiency standard. These skills may include walking on groomed trails, climbing up and descending hills, traversing a slope, use of poles and how to get up after falling in deep snow. The patroller will also require correct footwear for the area and correctly fitted and sized snowshoes.

Patrolling on fat bikes

Many nordic facilities welcome fat bikers, but trails are separate and segregated. These trails may or may not be part of the patrol area. A bike can do a huge amount of damage to a groomed ski trail, so it's important to stay off the ski trails except when responding to an emergency. There may be specific skills that must be demonstrated in order to meet the proficiency standards of the resort before patrolling on a fat bike, including the correct use of approved equipment, adjustment of riding technique to the terrain and consideration of clothing and foot wear choices for this sport.

Regardless if patrolling on skis, snowshoes or a fat bike, patrollers must demonstrate and be knowledgeable of the policies, procedures and communication requirements of the patrol area, and must clearly understand the limitations of the use of the equipment they are using and terrain they are using it on. For example, fat bike trails at some nordic centres may use highly technical mountain bike trails outside the scope of training by the resort. Under no circumstances shall a patroller enter avalanche terrain while on snowshoes or a fat bike, nor take it upon themselves to patrol outside a ski area boundary or in the backcountry. The Nordic Responsibility Code applies to all of these patrol disciplines.

4. Communications



CANADIAN SKI PATROL PATROUILLE CANADIENNE DE SKI TM _{MC}

In this chapter:

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Methods of communication

Clear and concise communication is essential for all ski patrol activities. From morning work assignments to relaying run conditions to emergency call and response, effective use of a ski centre's communication protocols is a fundamental skill for patrollers.

Effective communication relies on:

- Well-defined operational guidelines that are understood and practised by patrollers, management and staff
- Equipment being in excellent operating condition
- Common sense from all participants when situations develop that are beyond the scope of the guidelines

This chapter presents different techniques that are commonly used during both normal patrol operations and emergencies, including the use of:

- Radios
- Cell phones
- land-line phone systems
- Signage
- Hand signals
- Whistles

Communication is a fundamental ski patrol skill. It is essential that patrollers are completely familiar with all the communication devices found at their areas. If you have any questions please direct them to your Patrol Leader. Patrollers not only need to know how to use the tools at your ski centre, but how to communicate critical information so that there is no misunderstanding between sender and receiver.

When using any communication device such as radio or cell phone, think and compose your message or response before you speak. Whether sending or receiving information be certain that both the sender and the receiver have a clear and common understanding of the message; if in doubt, ask for clarification.

Radios

Radios are the most common and the preferred method of communication for both day-to-day and special event patrol activities

A radio system consists of multiple hand-held or portable units. Larger systems may add one or more base stations with on-duty dispatchers. Large ski centres may also have a radio repeater system and use multiple radio channels.

General radio features and controls

There are many makes and models of radios, but most have common features, including:

- On/off switch, often combined with the volume switch
- Frequency or channel selection switch (Confirm your radio is on the proper channel at the beginning of a duty day)
- Rotary squelch control switch that inhibits noise in the absence of a useful signal (Check squelch control frequently unless there is an automatic squelch control)
- PTT (push to talk) button (Press to talk, release to receive a message. If a remote microphone is used, it will have its own PTT button)
- Antenna

Key information

Look for the following posted information:

- Ski centre radio procedure
- Call signs and channel assignments
- Area management contact list
- Phone numbers (hospital, police, ambulance, etc.)

Federal rules and regulations

All radio usage is governed by federal rules and regulations. The important items to note are:

- Profane or obscene language is strictly prohibited.
- While anyone on a radio channel can hear conversations of others, it is unlawful to divulge information from a conversation to which you are not a party..

Clarity of voice communications - transmission techniques & procedures

The efficient use of radios (and cell phones) depends to a large extent on the method of speaking and on the articulation of the operator:

- Speak all words calmly, plainly and articulate each word clearly to prevent words from running together.
- Preserve the rhythm of ordinary conversation.
- The twenty-four hour clock system is typically used to express time.
- Use the phonetic alphabet to avoid confusion when transmitting difficult or unusual words. The table on the next page is the internationally recognized alphabet. The phonetic figure codes following it are the English and French codes.

Phonetic alphabet		
Letter to be identified	Identifying word	Spoken as
A	Alpha	AL FA
B	Bravo	BRAH VO
C	Charlie	CHAR LEE/SHAR LEE
D	Delta	DELL TAH
E	Echo	ECK OH
F	Foxtrot	FOKS TROT
G	Golf	GOLF
H	Hotel	HOH TELL
I	India	IN DEE AH
J	Juliet	JEW LEE ETT
K	Kilo	KEY LOW
L	Lima	LEE MAH
M	Mike	MIKE
N	November	NO VEM BER
O	Oscar	OSS KER
P	Papa	PAH PAH
Q	Quebec	KEH BECK
R	Romeo	ROW ME OH
S	Sierra	SEE AIR AH
T	Tango	TANG GO
U	Uniform	YOU NEE FORM/OO NEE FORM
V	Victor	VIK TOR
W	Whiskey	WISS KEY
X	X-ray	ECKS RAY
Y	Yankee	YANG KEY
Z	Zulu	ZOO LOO

Phonetic figure code		
Number	English	French
0	ZE-RO	ZÉ-RO
1	WUN	UN
2	TOO	DEU
3	TREE	TROI
4	FOW—er	CA-tre
5	FIFE	CINQ-e
6	SIX	SIS-e
7	SEV-en	SET-e
8	AIT	UIT-e
9	NIN-er	NEUF-e
Decimal point, decimal comma	DAY-SEE-MAL	DÉ CI MAL

The CSP expects patrollers to know the phonetic numbers in the language of use at their area.

Note that the French language employs a comma instead of a period as the decimals separator however the internationally recognized phonetic character in radio telecommunications is nonetheless the decimal. (ITU 2004).

Slang expressions such as "OK," "repeat," "over and out," "breaker breaker," or "come in please," are not be used. However, in practical terms, some "lingo" is commonly used in daily operations. There are also locally accepted terms that can be used in radio communications.

Expression	Signification
Acknowledge	Let me know that you have received and understood the message
Affirmative	Correct/Yes
Negative	Not correct/No
All stations	Usually repeated three times to signify a general alert or message
Break	Used to indicate the separation between portions of a message where there is no clear distinction between the text and other portions of the message
Confirm	Used to make firm or resolute. "Please confirm"
Copy	Message understood
Correction	An error has been made in this transmission (message indicated). The correct version is...
Disregard	Consider this transmission as not sent

Expression	Signification
Go ahead	I am ready for your message
I say again	Use instead of "I repeat"
Out	Conversation is ended and no response is expected
Over	My transmission is ended, and I expect a response from you
Read back	Repeat all, or the specified part, of this message back to me exactly as received. (Infrequently used as it is normally clear from the context or the sound when the PTT button is released)
Roger	I have received and understood your transmission
Say again	Repeat all your last transmission
Silence pronounced "Seelonce"	International expression to indicate silence has been imposed on the frequency due to a distress situation. Repeated three times at the beginning of a message. Eg."Seelonce, Seelonce, Seelonce, (Message)
Silence Finished pronounced "Seelonce feenee"	International expression indicating the distress situation has ended. Repeated three times at the end of a message. Eg."(Message), Seelonce feenee, Seelonce feenee, Seelonce feenee,
Relay	(To or through) can extend range or weak signal.
Verify	Confirm as correct or confirming a version
Words twice	As a request: "Communications is difficult, please send each phrase twice." As information: "Since communication is difficult, I will send each phrase twice."

Being a good communicator

Effective radio communication is based on being a good communicator and using the equipment properly.

- Be prepared and remember that a pressed transmit button blocks everyone else.
- Be patient and wait for other communications to be completed.
- Pause before speaking, (pause after pressing transmit button)
- Be concise, use the phonetic alphabet if needed to clarify a word or phrase.

Using the radio

With multiple users sharing a common frequency, correct identification is essential to ensure positive identification. Common identifier systems may use numbers or names.

Messages generally consists of four parts:

- The call-up
- The reply
- The message
- The acknowledgement or ending

Before transmitting, the operator listens for a period long enough to ensure the transmission will not cause interference to communications already in progress. If such interference seems likely, the operator waits for the first break in the transmission. A station having distress, urgency or safety communications to transmit is entitled to interrupt a transmission of lower priority at any time.

The "example of voice procedure" table below, provides an example of proper radio communications.

Example of voice procedure	
Message	Meaning
The call-up	
Ski Patrol Base	Ski Patrol Base is the call sign of the station to which information will be passed.
This is	
Patroller One	Patroller One is the call sign of the portable unit that wishes to pass the information to Ski Patrol Base.
Over	My transmission is ended, and I expect a response from you.
Another acceptable method for the "call-up" is: station being called/who you are/station being called. Using the above it would be "Ski Patrol Base/This is Patroller One/Ski Patrol Base."	
The reply	
The station will respond to the message as quickly as possible.	
Patroller One	
This is	
Ski Patrol Base	
Go ahead	Proceed with your message. There are a variety of appropriate responses including "go ahead," "over" and "stand by"
In most patrol communications, it may be unnecessary for Ski Patrol Base to state both their call sign and the call sign of the calling station as the context is clear.	
This is	In such a case a less formal approach is permitted and only the call sign of the station transmitting is normally required from this point forward.
Ski Patrol Base	
Go ahead	Or other appropriate reply.
The message	
<ul style="list-style-type: none"> Information is now transmitted in an orderly manner. Repeat any important information, such as location of an incident. 	
Ski Patrol Base	
This is	
Patroller One	
The fence on Little Butterfly has been repaired	
Over	My transmission is ended, and I expect a response from you.
The acknowledgement	

Example of voice procedure

Patroller One	
This is	
Ski Patrol Base	
Roger	I have received all of your last transmission.

The example above relates a fairly formal conversation. In situations when radio traffic is light, the signal is clean and the context of a conversation is obvious, it is relatively common even amongst professionals to leave out some of the identification messages and some key words such as "over" during a communication.

Security

Protect your radio from damage, theft and unauthorized use. Patrollers need to care for their radio and it must remain with the patroller until it is checked in after sweep.

It is important to remember when you are carrying on a conversation over the radio that you have no idea who else is listening. Your audience may include patrollers on the lift with members of the public, patrollers in the lodge or other area personnel with access to your frequency. When available, use an ear piece for incoming transmissions to eliminate unauthorized listeners in close proximity.

Communication is vitally important in managing hazards, but always think before you speak. If you are unsure whether to say something over the radio ask your Patrol Leader for a face-to-face conversation.

Care and maintenance

- Radio stays warm inside your jacket.
- Check transmissions before leaving the base station.
- Ensure that call sign and unit designations are correct and that radio is on the proper channel.
- At the end of your shift or sweep turn radio off and return it to the charging station.

Troubleshooting

If there is no response to a communication,

- Wait 20 to 30 seconds before the next attempt as others (the dispatcher for example) may be busy. Attempt three or four times.
- Check battery. If it is severely drained, shut the radio off for a few minutes to let the batteries recover before turning back on.
- Check the volume setting, squelch and channel selection, and tighten the antenna.
- Move one metre or so away and try again.
- Move to a clearing, closer to a line-of-sight position or to a higher location.
- If you can receive and transmit but without voice communication, use your PTT button: one click for "no," two clicks for "yes" and three clicks for "emergency."
- If possible, open the squelch all the way (if equipped). This may be noisy but improves the chance of receiving a weak transmission.

Inform the person in charge of communications when malfunction exists or develops with the radio.

Cell phones

When cell phones are used, all users need a list of all the cell phone numbers of those who may need to be contacted. This list needs to be guarded by anyone holding a copy and destroyed when no longer needed.

While using a cell phone, the above "clarity of voice communications" procedures are to be used.

Land-line phone systems

Your ski centre may also use a land-line based phone system. Locations of these phones, typically in lift top and bottom stations, need to be known to all patrollers. Area management will post a current phone list at each phone.

This system can be used for non-urgent messages. An example is calling in run checks while priority operations are underway.

Signage

Signage is a non-verbal form of communications. Different types are used in the patrolled area to signal various situations. These include:

- A rope or closed tape across the entrance to a run or trail to indicate the run or trail is closed.
- Run condition signs (eg. early season conditions).
- Crossed skis or other appropriate device to warn of an incident site or other danger below.
- Chalkboards or whiteboards to transmit a message to someone in particular or to the general public.
- Boards with standardized messages such as "Training in progress."

Hand signals

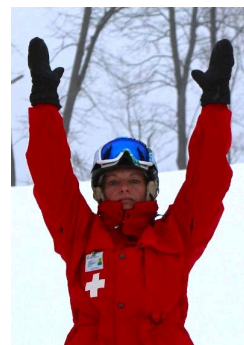
Patrollers may use hand signals for line-of-sight communication of some very specific information. Patrollers repeat the signal to acknowledge the message is understood.

Here are the hand signals to master. Letters correspond to the image on the next page.

A) One arm raised - assistance needed



B) Two arms raised - toboggan needed



C) Two arms out to the side - backboard needed



D) Two arms raised and waving - all clear, request(s) cancelled



Auditory

Whistles, shouts or voice amplifier units (bull horns) are used to transmit auditory information. They are simple, reliable and of limited range.

Whistles

Whistles are a good backup method; however, radio communication is recommended. Whistle signals are used in patrol activities for close-range communications of a few very specific requests. Whistle signals must be equally spaced with sound and dead space to avoid confusion. Whistle signals could pose a challenge with echos or misunderstood signals.

For the following, each blast of the whistle lasts for at least 2 seconds:

- One blast - Message understood/Correct
- Two blasts - Repeat
- Three blasts - Help!
- Four blasts - Bring a toboggan
- Five blasts - Bring a backboard

The receiving patroller acknowledges the signal by repeating the signal. The originating patroller gives one blast, confirming the message is correct.

Example of correct whistle exchange to call for a toboggan:

- 1) Patroller at scene: Four whistle blasts
- 2) Patroller responding: Four whistle blasts

3) Patroller at scene: One whistle blast

International distress call

Any three signals of any duration, visible or audible, repeated at regular intervals, represents the international distress call. The signals may be flares, mirror flashes, smoke signals, marks in the snow, whistles, branches, tracks, rocks, flashlights, or radio carrier (squelch) bursts. Respond to them immediately with every available means of support.

The international distress call in radio is "Mayday, mayday, mayday."

5. Public relations



OP 5-1: All smiles at F.I.P.S. - Argentina.

In this chapter:

General	2
Guidelines	2
Dealing with problematic behaviour	4
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General

Public relations is a set of activities and behaviours designed to cultivate a desired image. There are two types of public relations. One is the planned delivery of polished programs; these can be national programs or ones with a local focus.

The second type of public relations involves the day-to-day behaviours seen by the public, area managers and fellow patrollers. Of the two, by far the most important is the daily activities that shape the image of the patrol. Skiers/boarders see us in terms of the members they meet every ski day at the centre where they ski/ride. Their image of the patroller is formed by the individual actions of our members as we carry out our patrol duties.

Public relations is the responsibility of every member of the Canadian Ski Patrol. The maintenance of a professional, competent and disciplined image is important as it enhances the public's confidence to ask patrollers for assistance.

The image we present to the skiing public depends upon many things: our appearance, the way we practice our sport as we patrol, the way we conduct ourselves when wearing the patrol jacket; the competent and disciplined way in which we provide first aid and transportation services to a patient. Patrollers must be continually aware of all of these elements to create an impression of the ski patrol as competent, skilled and knowledgeable in first aid, on-snow skills and safety. Working consciously to create this image is a responsibility of every patroller and patrol leader.

The maintenance of this image is important. The public is continually changing and newcomers to the sport may not be acquainted with the ski patrol. We must earn their respect and confidence.

Because we wear a distinctive jacket and crest, we are highly visible on the hill or trail, and around the ski centre. The way we act is constantly being observed and remembered by other skiers/boarders, as well as by the area management.

Guidelines

What follows are principles to guide the patroller while carrying out patrol activities. Adopt these as guidelines for your personal public relations program and you will be making a major contribution toward enhancing the image of the patrol.

Health, condition and fitness

Working in the outdoors as a patroller, often on varying terrain, puts unique physical demands and stress on the individual, sometimes for prolonged periods. Addressing health, physical condition and fitness not only has the outcome of improving strength, flexibility, endurance, balance and agility, but will improve the individual's overall performance of duties, margin of safety and preparedness to meet the demands of patrolling.

A physically well-prepared patroller will give the sliding public the image of a patroller ready "to do the job."

Public relations with the snow sliding public



Fig OP 5-3: Patrollers from Quebec Division having fun.

- Patrollers are always in the public eye, and public relations must be consciously maintained on a high level. Abusive language, consumption of intoxicants while wearing the uniform, or admonishing another person in view and hearing of others damages the patrol image. Be mindful of conversations that could be overheard by the public. Treat everyone as you would like to be treated and make friends of all guests.
- When encountering someone with an offensive manner it may be difficult to maintain a courteous and polite attitude. While firm direction may be necessary, never offer a sarcastic reply.
- At alpine areas, take your turn in the lift lines unless you are on your way to an incident or are on a tight turn around for shift changes. When or if patrollers have the privilege to use a crash gate at the head of the line, approach this gate one at a time if possible. Ask politely to go ahead of the person in line and offer to share the chair with others. Sharing a chairlift with the public is an excellent way to get to know the skiing/riding public and to have them get to know you. In particular, joining ski school students on a chairlift offers an excellent opportunity to be more visible.
- Be courteous and helpful to all the people working at your ski centre. If any problems occur in your relations with them, ask your patrol leader to take it up with management.
- On the hill or trail, ski/board safely and in control; be a good model. It is extremely difficult for you to reprimand a skier/boarder for an infraction you have also committed.
- Support your ski centre to the fullest extent. Talk about its good points. Tell other skiers/boarders about its runs, facilities and people. If you don't convince people that you think it is a good place to ski/board, they will wonder why you patrol there.
- Never criticize the Canadian Ski Patrol or area management in public. If you have an issue with the way the patrol or area management is doing something then take it to your patrol leader or their designate, not to the skiing public.

Public relations with a patient

At times a patient may have to spend a lot of time in the first aid room under ongoing care or while awaiting transportation. The patient's comfort is largely dependent on the environment.

Remember that the room is a first aid station and act accordingly:

- Allow the patient to rest. Generally, an ill person does not want to be disturbed unnecessarily. Complete rest permits the body to devote all its energy to healing.
- Keep noise to a minimum. A patient is often sensitive to sounds they would otherwise not notice. Loud talking or laughter, careless handling of their equipment, rattling or banging doors should be discouraged and any unnecessary personnel should remain outside the room.
- Conversation should be carried on in a normal tone of voice. Do not whisper within range of the patient.
- Make your movements gentle and confident as you work. Combined with reasonable explanations to the patient, this will contribute to a restful atmosphere and increase patient comfort.
- Reassure the patient regarding their ultimate recovery. To the degree you are able, relieve the patient's worries about their injuries. Ensure that the patient is comfortable.
- Complete the report form using a normal tone of voice. Gather the information in as factual a manner as you can. Ensure the patient's equipment is looked after by their friends, family or a member of the patrol. If the patient has rented ski centre equipment and is without friends or family, the ski patrol should return the equipment to the rental shop.

Dealing with problematic behaviour

At some point, every ski centre suffers the problem of skiers/boarders disrupting the enjoyment or safety of others. It is the responsibility of the area management to decide what level of action will be taken in dealing with problematic individuals. Different areas have different policies. Be sure you clearly understand the limits of your authority and the management support for the actions you take. The patroller's role is to educate ("Educate, Don't Alienate") and thereby change individual behaviour. Handled properly, an attitude of respect and understanding will result.

Remember that to some people you represent authority. As a result, the skier/boarder you are approaching may be apprehensive or defensive. Patrollers are expected to develop verbal and non-verbal skills that will help to resolve problem situations.

How a confrontational situation is dealt with will affect the skier/boarder's future behaviour and attitude. Be sure to follow the ski centre's protocols. Some guidelines:

- Approach in a way that is courteous, sincere and, whenever possible, private.
- Introduce yourself, give your name and ask for theirs.
- Keep a cool and calm manner. Don't appear angry or aggressive. Don't try to intimidate the skier/boarder.
- Explain ski centre policy. Emphasize that you are not out pursuing a vendetta and that you are required to administer ski centre policy.
- Stick with the facts, don't be judgemental or preachy.
- Remain calm, stress the importance of safety and enjoyment for all, and restate the relevant area policy or safety guideline.
- Ask for the person's help, assistance and cooperation.
- Be a good listener and give individuals a chance to state their position and feelings.
- Avoid rising to their emotional level by arguing over perceptions or by challenging their right to be upset.

If the situation escalates into a confrontation, secure the involvement of ski centre staff.

Following these guidelines, you will promote safety, reduce injury and be seen as an asset to your area and patrol.

Area relations



Fig OP 5-5: Patrollers from Ontario Division ready to help.

The CSP is a partner with the ski centre management in the snow industry. As a partner, the CSP will be part of the ski centre's public relations programs. General guidelines include:

- Understand the ski centre's PR program and the CSP's roles and responsibilities.
- Enthusiastically represent the ski centre and promote its safety standards to the skiing public.
- Never publicly criticize an area or act in any way that could be interpreted as implying that safe practices are not followed.
- Be aware of and follow the centre's social media policy. Seemingly innocent posts may actually be inappropriate.
- Should questions regarding any area activities arise, bring them to the attention of the patrol leader, who will discuss them with the relevant management representative.

6. Injury prevention and safety



Fig OP 6-1: Patrollers on the job – Quebec.

Presentations to organizations, schools and ski clubs2

Setting a positive example2

The Canadian Ski Patrol's mandate is to prevent injuries and apply first aid in cases of injury or sudden illness.

Injury prevention is the responsibility of every patroller. When patrollers promote safer snow-sliding and take steps to minimize potential on-snow hazards, they help protect both themselves and the snow-sliding public.

Promoting Safety

Patrollers can promote safety by educating the public and by modelling safe skiing/riding activities.

Always approach members of the snow-sliding public with courtesy and respect when discussing possible safety concerns such as:

- Not following the Alpine or Nordic Responsibility Codes
- Wearing clothing inappropriately (e.g. long, loose scarves or unfastened helmets)
- Having missing or broken equipment (e.g. pole baskets or retention devices)

Presentations to organizations, schools and ski clubs

Patrollers may also have opportunities to share safety information with organizations like clubs and school groups. Presentation topics may include:

- Responsibility codes
- On-snow etiquette
- Use of lifts
- What to do if an incident happens
- Familiarization with the ski area (e.g. terrain, signage, area maps)

Setting a positive example

Patrollers are expected to set a positive example for the snow-sliding public. While on duty, always model safe practices.

- Follow and exemplify responsibility codes and area-specific rules of conduct
- Maintain your own equipment properly
- Demonstrate proper handling of equipment
- Engage in continuous personal improvement through practice or lesson-taking
- Wear appropriate clothing, which may include a helmet (The CSP supports Canadian Ski Council policy recommending helmets for alpine activities. Most alpine centres mandate helmet use for staff and volunteers)

Minimizing Potential Hazards

Patrollers identify and effectively manage on-snow hazards to prevent injuries. Potential hazards may include:

- Overhanging tree limbs at face height
- Debris on a run or trail
- Downed signs, fencing or padding
- Tower pads or signs covered in snow
- Bamboo/plastic poles leaning in an unsafe orientation
- Unexpected snow conditions (e.g. chunks of ice, large ruts, bare spots on runs)

Hazards can be managed by removing snow, replacing fencing or erecting signs to alert people to dangers. Follow your area's and patrol's protocols to report identified hazards, actions taken to manage potential dangers and situations where hazard mitigation exceeds patroller capacity.

7. Incident site management



Fig OP 7-1: Patrollers from Yukon prepping a toboggan.

In this chapter:

General	2
Notification/dispatch	2
Securing the incident site (Inner and outer perimeters)	3
Other considerations for incident site management	6

General

Incident site management is the effective and systematic use of all resources to deal with a situation involving a patient. It is the overall management of the incident from the moment the patroller is notified of the incident until the injured person leaves the ski centre or patrol room.

Every incident will have its own unique circumstances. Some incidents are simple and easy to manage, while others are more complex. Examples of situations that will affect the complexity of an incident's site management:

- One or more persons may be injured. **Triage** may be required.
- The location of the incident site may make it difficult to work in and/or require extrication of the patient.
- The severity of injuries can range from cuts and bruises to life-threatening problems or even death.
- The incident site may be in a hazardous location such as a very busy trail or the on/off ramps of a lift.

Teamwork and good communication are vital to ensuring a well-managed incident site.

Notification/dispatch

Each patrol will have its own system of communication and dispatch. Most centres use radios, but each centre will have its own radio protocols to follow. If radios are not used or are malfunctioning, there are alternatives including hand signals, whistles and cell phones. Patrollers need to understand and respect the system used by their patrol.

Once a call for a patroller is made, the responding patroller must clearly indicate they are on route. Upon arrival at the incident scene, they must give regular updates on the type of incident and the assistance and equipment needed. This also applies when the patroller happens upon an incident for which no dispatch has been made.

For more details about using radios or other systems of communication refer to **Communications, OP Chapter 4**.

Scene survey and safety

Patrollers must respond quickly and demonstrate safety, control and competency when called to an incident. The first patroller on the scene conducts a thorough survey of the scene and is in charge unless command is turned over to another qualified person. All other patrollers approaching the scene will also do a survey of the scene to ensure the area is safe and secure before reporting to the "first in patroller".

Upon arrival, mark the incident site appropriately and evaluate the situation quickly to determine the potential for further injury exists for anyone at the scene, including the patroller. Any hazardous or potentially hazardous conditions should be resolved before taking further actions. See **Scene survey, AFA Chapter 4**.

Note the time and any issues regarding potential liability.

A patroller may choose to keep their equipment (skis/board) on if removing them would limit their mobility, such as in deep snow. When equipment is removed, it should be secure and visible.

The number of injured people at the incident site will also affect how the incident site is managed. For details on triage, see **Multiple patients - triage, AFA Chapter 4**.

Securing the incident site (Inner and outer perimeters)



Fig OP 7-3: Off piste incident scene management.

Mark the site above the incident to notify oncoming skiers that there is an incident below and they take care or slow down. Marking sites can be done in different ways and using different types of equipment. Patrollers may make use of the flashy part of their skis in a crossed fashion, or use a warning sign to indicate an incident. Bystanders or a flashing LED light on a ski pole can also be used to warn or redirect oncoming traffic. Ensure all possible avenues to the incident are marked. This is particularly important where runs merge and on Nordic trails with traffic coming in both directions.

Whatever you use to mark the incident site must be in a location that is clearly visible to oncoming skiing/boarding traffic, in order to give them enough time to avoid the incident site. This is especially important if the site is not visible from a distance or is partially hidden, which may mean walking higher up the slope to mark the site. If the incident is off the trail and not easily seen, it can be useful to mark the site or situate a patroller at the side of the trail at the closest point to the incident so that assisting patrollers can find the incident.

Assess the need to temporarily close the run due to the severity of the incident or the space available to treat the injured. Work with ski centre management to do so if necessary.

Establish an inner and outer perimeter of operations for the incident site when there are enough patrollers on-site to perform this task. The outer perimeter determines the safety zone for keeping onlookers and skiers away from the incident. The inner perimeter is the working zone where the first aid is performed. The area between the inner and outer perimeters is useful for staging additional equipment and resources until they are ready to be used. Defining the two perimeters is especially

beneficial for more significant incidents or incidents with multiple injured people (triage). **Multiple patients - triage, AFA Chapter 4.**

The outer perimeter is defined by the placement of the crossed skis or other warning device(s) above, to the sides and/or below the incident site. The inner perimeter is the area directly around a patient.

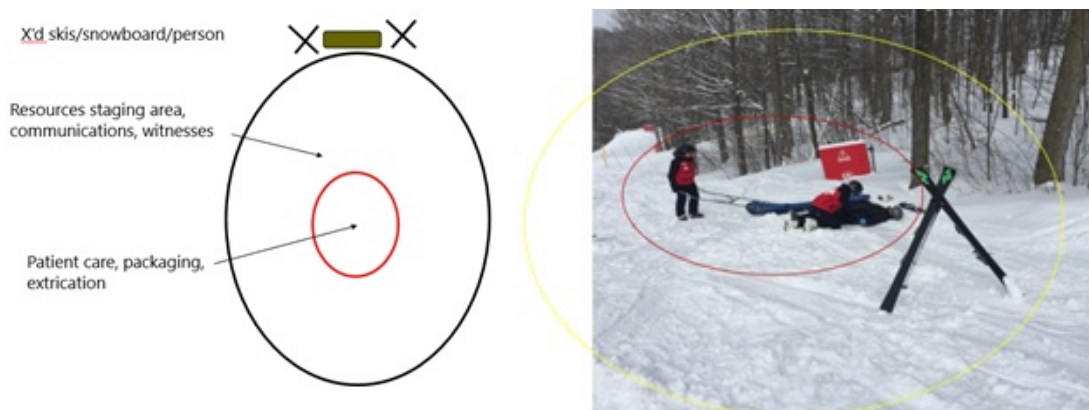


Fig OP 7-4: Incident scene outer perimeter explained.

Patient assessment, decision-making & equipment

Perform the primary assessment and make your transportation decision. Move to the secondary assessment if the situation allows. (See **Patient assessment, AFA Chapter 4**). Ensure that you effectively communicate exactly where you are and what equipment and support is needed at the incident site. See **Sample Intervention Report** in AFA Documents for an example of a form you can fill out while on-site.

Whenever life-threatening priorities are encountered, access to EMS is appropriate and an ambulance should be requested as early as possible in the assessment. An ambulance provides rapid, safe transport. Some injuries are not life-threatening but may be limb-threatening and will still require immediate transport. For instance, fractures and dislocations with compromised distal circulation require immediate medical attention and may be best transported by ambulance.

Teamwork and managing assisting patrollers

The first patroller on the scene (patroller in-charge) manages and directs the assisting patrollers. In most incidents the first patroller will perform the patient assessment and direct the first aid treatment. However, in more complicated incidents, such as multiple casualties or where the location of the incident is a potential hazard, the first patroller may want to delegate the first aid component to one or more assisting patrollers and oversee the management of the entire incident site.

Any patroller that comes upon an incident site where other patrollers are already working with a patient should stop, survey/assess the scene and offer assistance to the patroller in charge. If their assistance is not required, the patroller should continue on. If required, the assisting patroller receives instructions from and supports the efforts of the patroller in charge. This patroller follows the specific instructions given and confirms with the patroller in charge when they are completed. The instructions given may include such tasks as:

- Assisting with first aid
- Appropriately marking the site access in some highly visible manner
- Crowd control
- Unpacking the toboggan
- Providing a blanket (or jacket) for warmth

- Laying out bandages, splints, and other equipment as required
- Reassuring the patient
- Assembling the toboggan if required
- Removing or assisting in removing the patient's or the patroller's equipment
- Keeping the site clear of unnecessary equipment
- Marking or tagging the patient's equipment
- Cleaning up the site after the patient has left
- Complete or start note taking

Treatment

Perform the appropriate treatment as prescribed in the Advanced First Aid section of the Patroller's Manual.

Remember the following:

- Patrollers must never step over the patient and, if possible, remain downhill of the patient.
- Bystanders may be used in some capacities, such as with crowd control.
- Reassure the patient that their equipment is being taken care of properly.

Extrication

Depending on where the incident is located, the extrication of the patient may be quite simple or it may be very complex and require some problem solving and improvisation. Extrication most frequently occurs as a result of the patient becoming lodged in a confined space such as among trees, in tree wells, etc. Be careful to prevent further injury to the patient when extricating.

Some general extrication considerations are:

- Is there enough working space around the patient?
- If not, can objects be moved or removed to create more room?
- If not, it is generally easier to remove the patient from the confined space by reversing the process that got them there.
- Where possible, sliding a patient up a backboard is less space consuming than the standard log roll or lift.
- When working in a confined space, be wary of dangers above.

When choosing the extrication method, consider the space around the patient, available equipment, the number of people available and the weight of the patient. Extraction methods, protocols and equipment are specific to each patrol and ski centre.

Patient transport

Most patients are transported to the ski centre clinic or ambulance using a toboggan. The specific procedures for transporting patients with a toboggan are covered in [Alpine](#) and [Nordic](#) toboggan skills. Snowmobiles are also used, particularly in Nordic areas.

When the toboggan arrives at the incident site, the patroller in charge directs the placement of the toboggan. See [Hand signals, OP Chapter 4](#).

For cases that occur in or near the ski centre chalet a toboggan may not be appropriate for transportation. For these cases, there are various techniques that can be used to transport the patient to the clinic, these methods are explained in [Transporting patients, AFA Chapter 21](#).

Incident site clean-up

After the toboggan leaves, the patrollers at the site clean up by:

- Ensuring that no potential hazards remain, or that they are minimized after the incident site is vacated,

- Arranging transportation and storage of all patient equipment left behind,
- Arranging transportation and proper disposal of medical waste left at the incident site,
- Covering or removing any bodily fluids left on the snow and repairing any ski or boot tracks.

Documentation

An essential part of incident site management is the completion of all required reports and statement forms. It is important that each patroller be familiar with the various forms at their centre and how to complete them. The reports have many uses, including a means for follow-up, a basis for the analysis of diagnosis and treatment, area and trail hazard surveys, and items required for area insurance. Remember that a report must be completed for each patient treated and should include only the facts. The CSP does not have its own form. Use the ski area's report forms.

Ski areas have accident investigation protocols. Work with ski area management when dealing with incident sites involving death, major trauma and/or ski area equipment. Management may want the site to be preserved for pictures or videos.

Next level of care & off-area transportation

Selecting the most appropriate method of transportation from the ski area to medical care is often determined by:

- The type of emergency encountered
- The condition of the patient
- The distance from medical facilities

In many instances, the patient may be transported in a private vehicle. See [Transporting patients, AFA Chapter 21](#). Have directions to the nearest medical facilities readily available in the patrol room.

Restock first aid kits and toboggan packs

At the end of every incident patrollers must restock their first aid kits and the toboggan packs. For details on the contents of a first aid kit refer to [First aid kit contents, AFA Chapter 1](#). For details on packing a toboggan refer to [Alpine toboggan inspection, OP Chapter 2](#). The re-packed toboggan must also be returned to its original location at the ski centre or on the mountain if one has not already replace it.

Other considerations for incident site management

First aid in an outdoor environment

The outdoor environment presents challenges for all patrollers who are trying to perform their duties. The working environment can be very hostile, and patrollers need to respect and have knowledge of the challenges of working outdoors.

A stable internal core temperature is essential for survival. This is true of cold or hot weather conditions. The effects of heat and cold injuries and strategies to prevent these injuries is discussed in detail in [Environmental injuries, AFA Chapter 17](#).

The ability to perform physical tasks necessary for first aid can be affected by temperature, light conditions, terrain, footing, physical fitness and natural obstacles. One of the best ways to ensure patrollers are well prepared is to train in situations that mirror the conditions in which duties are performed.

Dealing with the public

Only patrollers involved with the treatment and their assistants are to be with the patient. Witnesses and friends should be requested to remain near the patient (between the inner & outer perimeter of the incident site) or to meet the patient at the first aid clinic. They can provide valuable information and can offer reassurance and comfort. Onlookers should be politely requested to leave. In the case of an injured child, the presence of a parent is often reassuring and is appropriate.

8. Risk management



In this chapter:

The Canadian Ski Patrol and risk management _____ 2

The Canadian Ski Patrol and risk management

Risk management is the process of identifying potential risks and analyzing them in order to reduce or eliminate the risk.

Managing risk by minimizing hazards is an ongoing process for every patroller. It can reduce the necessity to perform first aid by preventing an incident from happening in the first place. Skiing/boarding is more enjoyable for everyone when they know and see that patrollers are on duty and are helping to reduce the elements of risk that are inherent with skiing and snowboarding.

Canadian Ski Patrol members must adhere to risk management policies and procedures as directed by local ski centre management. The development and implementation of all risk management procedures (e.g. lift evacuation, incident investigation, documentation of incidents), is the sole responsibility of ski centre management. As a member of the Canadian Ski Patrol you fulfill your responsibilities to both the ski centre and the public by helping staff identify and minimize hazards encountered while patrolling.

The nature of patrol activities and the environment that patrollers work in have inherent risks that cannot be eliminated. Minimize these risks through continuous patroller education and development along with personal skills practice.

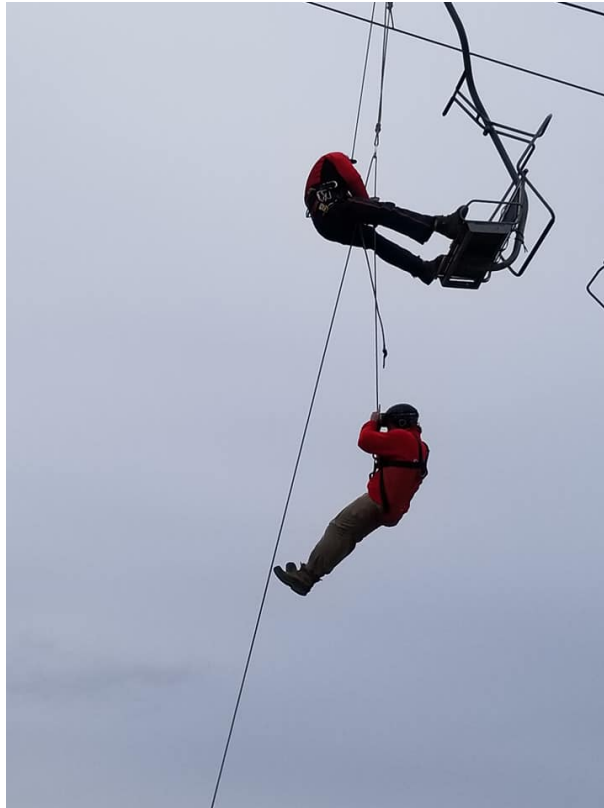
Risks exist at many levels:

- Ski centre - its facilities, runs and operational procedures
- Personal - individual fitness, equipment and skiing/snowboarding ability
- Training - learning new skills

Before participating in any activity, understand the risks, determine how to manage those risks and decide whether or not to proceed. No-one should undertake any activity or maneuver for which they do not feel adequately prepared or equipped. Any member that has misgivings in this regard should immediately and clearly communicate this to their instructor/patrol supervisor

The key to good ski patrol risk management is training and practice. Communication between patrollers and between the patrol and ski centre management is vital. The goal is to be ready to handle all patrol activities with skill and confidence, and as safely as possible.

9. Lift evacuation



OP 9-1: Lift evacuation training.

Lift Evacuation2

Lift Evacuation

Each alpine ski centre will have a system for moving people up the mountain. This may include surface lifts and/or aerial lifts. Surface lifts include rope tows, T-bars, J-bars, Platters, Magic Carpets and, on occasion, Snowcats. Aerial lift systems include chair lifts and gondolas. There is a great deal of variety in these systems (e.g. single to six seats per chair, fixed grip or detachable configuration) and their construction, installation and operation. Regardless of the systems in use, the patroller must have a working knowledge of how these systems function, the risks associated with their use (e.g. scarves, backpacks), and the protocols and procedures for their use, specific to the resort.

Overall, management of the lift operations, lift safety and evacuation of a person on a lift is the responsibility of the centre. No lift evacuation will take place except under the specific authority of the area's designated incident commander. However, all patrollers will likely be trained by the resort on how to assist with lift evacuation.

For many ski areas, the training of all patrol on lift evacuation is mandatory and will form part of the yearly on-snow recertification. Some resorts may include extra training or special procedures (e.g. adaptive skier/rider lift evacuation systems, self-evacuation, etc).

The development of detailed procedures, training of evacuation teams, and an actual evacuation require a joint effort between several parties. These may include hill management, CSP patrollers, staff patrollers, operations staff, local fire departments and rescue groups.

See [Lift evacuation for adaptive skiers and snowboarders, OP Appendix D](#) for information on special considerations when assisting in this type of situation.

10. Races & special events



OP 10-1: CSP showing the world how it is done.

In this chapter:

Pre-event planning _____	2
Race event procedures _____	2
Additional resources _____	3
Example alpine racer down protocol _____	3

Providing first aid at competitive events is part of the duties of most patrols. Alpine and nordic competitions are very structured events that attract highly motivated participants and their coaches. There are timed events such as alpine slalom and cross races, and long-distance nordic marathons and loppets. There are events are judged on a combination of factors, such as moguls and aerials. All require the services of the patrol to provide expertise on injury prevention and incident site management. Careful and complete liaison between the event organizers and the patrol is vital to participant safety and event success.

Pre-event planning

The actual event and coordination of operations/participants will be under the authority of the ski centre management or of event personnel such as the chief of race. Patrol coordination and an understanding of race protocols, including the role of the patrol, is crucial to the safety of the event. A lead patroller is to be designated to co-ordinate the patrol activities.

Prior to the event, the designated lead patroller must be an integral part of the event committee. This committee should deal with such medical services issues as:

- Composition of the medical team (i.e. are there other medical professionals than patrollers?)
- Location of checkpoints
- Communications
- Patroller logistics
- Evacuation equipment and routes (What is its effect on the course, the flow of the event and the potential danger presented to the injured athlete, to other competitors and to officials on the course?)
- Transportation to hospital
- Contingency measures due to severe weather conditions

Procedures are to include provisions for first aid to be rendered to spectators, volunteers, course officials, coaches and athletes.

Race event procedures

On the day of the competition the lead patroller must ensure that all members of the patrol know the protocols relating to event officials, volunteers, athletes and coaches:

- Event specific information (e.g. type of event, numbers of competitors, specific protocols to follow)
- Location of the check points
- Evacuation routes from each section of the course
- Secondary coverage plan should one team be called to an emergency situation
- Method of communication

Patrollers must also be prepared to be out on the course for extended periods of time and carry adequate clothing, food, fluid and personal items.

The event medical services plan will consider the following items:

- Location of patrol stations. Predetermine these strategic points on the course, considering length of course, visibility, and access/egress points. Ideally to be staffed by two or more medical team members.
- Communications. Patrollers should be in radio contact with the patrol leader, who is in contact with the chief of race. In an emergency only the chief of race can delay the event or make a decision about the course.
- Protocols for assisting athletes. Depending on the type of race, assisting an athlete may disqualify them. There may be a need to obtain permission from the athlete or their coach before rendering assistance. There may be an "athlete down" protocol in place for the event.
- Athletes will have a high level of motivation and competitive nature. They may attempt to continue the event in spite of an injury. Patrollers may discourage this but cannot stop it. In such cases, patrollers must

communicate in order to advise the patrol leader and other check points along the course so they may monitor the athlete's progress.

- Awareness of frostbite and/or hypothermia dangers because of the nature of the athlete's clothing. Exhaustion, dehydration and overheating may also be concerns, especially in spring and summer events. Monitor the athletes and communicate any concerns to the patrol leader and finish area.
- The requirement for an "end of event" course sweep. For Nordic or bike races, least one patroller should accompany the sweep. At the conclusion of an event it is the responsibility of the event committee to ensure that all athletes are off the course and accounted for.

Some types of events, such as freestyle events and alpine races, have "athlete down" protocols. These protocols are in place for several reasons, including course safety, and will also have rules relating for provision of assistance to athletes. Nordic races do not use a specific racer down protocol, but there will be protocols in place to ensure course safety.

Additional resources

For some large events that require additional patrollers, a patroller that is AFA qualified but not qualified in the specific discipline of that event may be asked to "boot" patrol the start/finish line or respond by snowmobile to a scene. This will require a level of training and familiarity with the facility commensurate with the role of that patroller.

Example alpine racer down protocol

The Racer Down Protocol was developed to reduce, and hopefully eliminate, the risk to alpine race course workers, in the event a ski racer crashes and requires assistance. Initially developed for World Cup events, it is now widely used and adaptable to any level of competitive on-snow event.

The protocol will avoid instances where well-meaning, but untrained individuals attempt to assist athletes following an on-course incident, for example, jumping onto the course to assist an athlete or calling in the Ski Patrol prior to the race being stopped. Racer Down Protocol may vary with different race organizations, regions, or clubs. Patrollers should make sure they are familiar with the protocol for the race that they are covering. The following is an example of a Racer Down Protocol:

1. Prior to the start of the race, the Chief of Ski Patrol will identify the Chief of Race or Technical Director (TD) and introduce themselves. The Chief of Ski Patrol will notify the Chief of Race or TD that throughout the event Ski Patrol members may rotate in and out. Ski patrol members arriving at their course station will identify the jury member (Chief of Race, TD, etc.) and introduce themselves. The Chief of Race or TD will be directing them onto the race course in the event of an incident.
2. The jury member with a radio who is closest to the incident site will call for a "Stop Start" (meaning that the starting gate will stop any further racers from starting their runs).
3. The Start Referee will confirm immediately on jury/race channel "Start Stopped, holding racer number (#) in start, racer(s) number(s) on course".
4. The person calling the "Stop Start" will then call, on the jury/race channel, "Racer down at (position identified by gate number). Please flag racer above this point" (if necessary). It is important that the position be clearly stated to avoid having a racer stopped who is already below the incident.
5. The flag person will confirm as soon as possible on the jury/race channel "racer (#) flagged and stopped at (position identified by gate number)".
6. The jury member having called the "Stop Start" will confer with the TD as to whether ski patrol is necessary. The Chief of Race or TD will then switch radio channels and request the ski patrol attend to the incident site. The ski patrol, once on scene, will determine if any additional assistance, such as a toboggan, is required.
7. No person is to move onto the course or approach the racer down until ordered to do so by either the TD or a jury member who will have heard the confirmation that the start is stopped and any racers on course have been flagged and stopped.

8. Any person other than the ski patrol attending at the incident site may only remove "debris" from the race course and may only assist the athlete under the specific direction of patroller in charge. Under no circumstances is anyone other than the ski patrol permitted to attempt to remove an athlete's equipment, remove the athlete from nets or attempt to move the athlete in any way.
9. The patroller at the scene will communicate, using established ski patrol radio protocol, with other ski patrol members and the race official in charge. Any other person attending the incident site will only communicate with the Chief of Race, TD or the race crew member closest to the incident site using the jury/race channel.
10. During the time immediately following the "Stop Start" call, all persons will clear all radio channels until advised by Chief of Race or TD that normal radio communications may resume. Compliance with this simple rule may be vital to the rescue effort. During this time, the only radio traffic on the race communications system should be between the Chief of Race or TD and the race crew member closest to the incident site.
11. The race crew member closest to the incident site will be responsible for the orderly conduct of people around the incident site. Care should be taken to control the number of non-patrol people in the area. Strictly apply a "need to be there" rule.
12. During the conduct of the rescue, the ski patrol will reposition patrollers as necessary to ensure adequate coverage when the event resumes.
13. Immediately upon the incident site being clear and safe for the event to resume, the jury member closest to the incident site will advise the Chief of Race or TD. At this time, the Chief of Race or TD will advise that normal radio communications may resume.
14. The Chief of Race or TD will instruct the Finish Referee to commence a "course clearance" from the bottom up and then, as soon as it is safe to do so, will direct the Starter to resume the event.
15. The Chief of Ski Patrol or designate will then advise Chief of Race or TD of the destination and status of an injured athlete as soon as this is known.

Appendix A. CPR in a toboggan

It is important that each ski centre establish a CPR protocol based on its layout and terrain. This may be load and get to the bottom of the run, given the short distance. Others may look at some runs or areas where there are “CPR stations” where a patient is loaded (after 2 minutes of CPR), then travels 60 to 90 seconds directly to a “CPR station” where another 2 minutes round of CPR is repeated and then moved again to the next “CPR station” or base. In this system, patrollers will go to their assigned areas so that they are in place upon arrival of the toboggan, immediately do 1 round of CPR, perhaps change driver, rope person and escorts, etc., and go again. Once this specific resort protocol has been developed, it should be practiced until every patroller at the resort is proficient in the protocol.

The following is an example of a CPR in a toboggan protocol:

Call reporting a person down on trail ABC

- Patroller arrives on site and proceeds with their approach and assessment.
- Patroller discovers no breathing, no circulation and unconscious: VSA (vital signs absent).
- If alone, patroller calls for help then starts CPR (at 30-2). If with another patroller, first patroller starts CPR and second calls with appropriate code for the ski centre's protocol, and for:
 - Toboggan and back board
 - AED
 - Oxygen
 - Assistance
 - Ambulance
- Once the AED arrives, without stopping CPR, place pads, turn on device and follow instructions of the AED (shock/no-shock).
- If shock advised, deliver shock then place patient on backboard and continue CPR.
- If no shock, the patient is placed on a backboard and CPR continues.
- The patient is loaded in the toboggan with their head uphill, toward the summit and with space near the top of their head for the AED.
- The compressions stop when the toboggan starts downhill.
- During the CPR sequence, a patroller or patrol team is sent downhill to staging area #1 (no more than 60 seconds travel from the top) where they stop on a flat, near a pitch, mark the scene and wait for the toboggan to arrive.
- Once the toboggan arrives at staging area #1, the designated patroller does compressions for one cycle (2 minutes) and an AED check (shock/no-shock).
- A second patroller or patrol team is sent or dispatched to staging area #2 (approximately 60-90 seconds travel from staging area #1) and follows the same routine.
- After 2 minutes of CPR, a fresh patroller drives the toboggan from staging area #1 to staging area #2. The compressions stop when the toboggan starts downhill.
- This sequence is repeated down the hill until the cut-off (go fast) point.
- Once the cut-off (go fast) point (90 seconds from bottom of the hill) is reached, the toboggan driver proceeds to the bottom of the hill, the first aid clinic or a waiting ambulance.
- If the ambulance has not arrived, CPR (30:2) and AED sequence is continued until transfer to ambulance.

Appendix B. Responsibility codes

This appendix presents examples of alpine and Nordic responsibility codes that are used throughout Canada. It is essential that patrollers are aware of and adhere to the responsibility codes that are posted in their local area.

Alpine Responsibility Code

ALPINE RESPONSIBILITY CODE



THERE ARE ELEMENTS OF RISK THAT COMMON SENSE AND PERSONAL AWARENESS CAN HELP REDUCE. REGARDLESS OF HOW YOU DECIDE TO USE THE SLOPES, ALWAYS SHOW COURTESY TO OTHERS. PLEASE ADHERE TO THE CODE LISTED BELOW AND SHARE WITH OTHERS THE RESPONSIBILITY FOR A SAFE OUTDOOR EXPERIENCE.

<p>1 <i>Always stay in control. You must be able to stop, or avoid other people or objects.</i></p>	<p>6 <i>Always use proper devices to help prevent runaway equipment.</i></p>
<p>2 <i>People ahead of you have the right-of-way. It is your responsibility to avoid them.</i></p>	<p>7 <i>Observe and obey all posted signs and warnings.</i></p>
<p>3 <i>Do not stop where you obstruct a trail or are not visible from above.</i></p>	<p>8 <i>Keep off closed trails and closed areas.</i></p>
<p>4 <i>Before starting downhill or merging onto a trail, look up-hill and yield to others.</i></p>	<p>9 <i>You must not use lifts or terrain if your ability is impaired through use of alcohol or drugs.</i></p>
<p>5 <i>If you are involved in or witness a collision or accident, you must remain at the scene and identify yourself to the Ski Patrol.</i></p>	<p>10 <i>You must have sufficient physical dexterity, ability and knowledge to safely load, ride and unload lifts. If in doubt, ask the lift attendant.</i></p>

Know the Code – Be Safety Conscious
It is Your Responsibility

Skiers and snowboarders are encouraged to educate themselves on the benefits and limitations of helmet usage.

Fig OP 8-1: Alpine Responsibility Code. Used in all provinces except Quebec. Endorsed and used by the Canada West Ski Areas Association, the Ontario Snow Resorts Association, the Atlantic Ski Areas Association, and the Canadian Ski Council.

Mountain Code of Conduct

Mountain Code of Conduct

**Code adopted under the Act respecting safety in sports.
This Code applies to all persons practicing snow sports.**

- 1 Remain in control of your speed and direction. Make sure you can stop and avoid any person or obstacle.**
- 2 Yield the right of way to persons downhill and choose a course that ensures their safety.**
- 3 Stop on a trail only if you are visible from above and if you are not obstructing the trail.**
- 4 Yield the right of way to persons uphill when entering a trail and at intersections.**
- 5 If you are involved in or witness an accident, remain at the scene and identify yourself to a first-aider.**
- 6 Use and wear at all times a proper device to prevent runaway equipment.**
- 7 Keep out of the lifts and trails if your ability is impaired through use of alcohol or drugs.**
- 8 Obey all signs and warnings and never venture off the trails or onto a closed trail.**

There are elements of risk that common sense and personal awareness can help reduce. Regardless of how you decide to use the slopes, always show courtesy to others. Observe the code listed above and share with others the responsibility for a great outdoor experience.



You must obey all other rules and signs pertaining to any particular activity as marked out by the resort.

Fig OP 8-2: Mountain Code of Conduct. English version. Used in Quebec only. Regulated by the Quebec Act Respecting Safety in Sports. Translated by the Quebec Ski Area Association.(ASSQ)

CROSS COUNTRY RESPONSIBILITY CODE



THERE ARE ELEMENTS OF RISK THAT COMMON SENSE AND PERSONAL AWARENESS CAN HELP REDUCE. REGARDLESS OF HOW YOU DECIDE TO USE THE TRAILS, ALWAYS SHOW COURTESY TO OTHERS. PLEASE ADHERE TO THE CODE LISTED BELOW AND SHARE WITH OTHERS THE RESPONSIBILITY FOR A SAFE OUTDOOR EXPERIENCE.

- | | |
|--|---|
| 1 <i>Always check posted trail conditions.</i> | 5 <i>Ski in control. On two-way trails descending skiers have the right-of-way.</i> |
| 2 <i>Ski in indicated direction and obey all posted signs and warnings. Keep off closed trails.</i> | 6 <i>Do not stop where you obstruct a trail or are not visible to others. Move off the track quickly if you fall or during</i> |
| 3 <i>Always ski to right when meeting on-coming skiers and when skiing on double track.</i> | 7 <i>Do not litter. Take out what you pack in. Respect all property.</i> |
| 4 <i>Yield the track to faster skiers and skiers calling "track".</i> | 8 <i>Report all incidents.</i> |

**Know the Code – Be Safety Conscious
It is Your Responsibility**

Fig OP 8-3: Cross Country Responsibility Code. Endorsed and used by the Canada West Ski Areas Association, the Ontario Snow Resorts Association, the Atlantic Ski Areas Association, and the Canadian Ski Council.

Appendix C. Avalanche safety



Fig OP C-1: Avalanche training at Sasquatch Resort - Hemlock Valley, BC.

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Introduction

For the majority of CSP patrollers, knowledge of avalanches and avalanche safety is not required. However, some of the alpine and nordic ski centres, primarily in western Canada, have significant avalanche terrain within, above or adjacent to open public runs. In recent years, there has been greater use of the “side country” or “slack country” — terrain accessible from the ski centre but outside the ski centre boundaries. For patrollers at some western Canadian ski centres, avalanches are part of their operating environment.

The role and responsibilities of Canadian Ski Patrollers regarding avalanches fall into three areas:

- Public education and injury prevention
- Support of the ski centre’s avalanche control program
- Provision of first aid to those injured in an avalanche

Public education and injury prevention

Communicating with the public about avalanches

Patrollers have a responsibility to become knowledgeable about local terrain and avalanche conditions, as we are seen by the public as credible sources of information. At ski centres with avalanche terrain, in-bounds or out-of-bounds, patrollers can educate skiers and riders on:

- The importance of obeying avalanche closure signs and understanding ski area signage
- Where to obtain information on avalanche conditions at the ski centre and in the backcountry
- The risks of skiing or riding in uncontrolled avalanche terrain in the backcountry and how to manage those risks
- The need to travel with a competent, trained partner and carry the right equipment
- The purpose and practice of avalanche control at the ski centre.

When communicating with the public about “out-of-bounds” skiing, the following topics are to be discussed:

- Do you have any backcountry knowledge and avalanche training?
- Do you know the type of terrain you are heading into and where you will end up?
- Have you read the current public avalanche bulletin? What is the danger rating? (Advise people where the current bulletin can be viewed if posted by the ski centre.)
- Do you have the basic rescue equipment (probe, shovel and transceiver) and know how to use it?
- Are you with a buddy and does that person have rescue gear?
- Does a responsible person know where you are going? If cell phones do not work, do you have a way to call for help?

Explaining ski centre signage

Whether one skis entirely within the ski centre or ventures beyond the ski centre boundary, there are numerous signs to be familiar with. These signs provide an understanding of the dangers of nearby terrain.

Ski centre boundary and out-of-bounds skiing

Typically, people are free to cross the ski centre boundary, if they so choose. Any information given to the public on out-of-bounds skiing must be consistent with ski centre policy. The public should also know the difference between an area boundary and closed areas.

If someone is considering going out of bounds, the following points should be conveyed:

- No marked trails or runs

- No hazard markings
- No avalanche control
- No ski patrol. (You are responsible for your own rescue and, depending on the jurisdiction, you may be financially responsible for any rescue assistance.)



Advise the following:

- Tracks do not mean it is safe.
- Tracks may not always lead back to the ski centre.

In-bounds avalanche closures

Within the ski centre, there are two types of avalanche terrain closures that may exist — permanent closures and temporary closures.

Entry into these closed areas may result in lift privileges being revoked or other measures as determined by ski centre management.

Permanent closures



Permanently closed areas are “no-go areas” because they represent significant safety issues. Reliable avalanche control is not possible in such terrain. The terrain in these areas often includes cliffs and other hazards. A skier or rider can be knocked over by even a small amount of moving snow, and if that happens there is a high risk of serious injury or death.

Temporary closures

Temporary closures occur while avalanche control work is underway to stabilize the slope for public use. Once control work is completed, the slope may open to the public, as shown below right.

Dealing with public who enter avalanche closure areas

Drawn by untracked powder, skiers and boarders who ski/ride in avalanche closures are putting themselves and others in significant danger. If spotted, these individuals must be intercepted once they leave the closed area. The importance of understanding the risks to themselves and rescuers cannot be overstated. Local ski centre policy will dictate what to do next. It might be to provide a warning, remove the person's lift pass or escort the person to the base area for handling.

How this confrontational situation is dealt with will affect the person's future behaviour and attitude. Be sure to follow the ski centre's protocol. The best approach is to treat this as a teaching moment — "Educate, Don't Alienate." Focus on education in addition to enforcement. Refer to [Dealing with Problematic Behaviour OP Chapter 5](#).

Support of the ski centre's avalanche control program

Avalanche control is carried out by ski centre staff that are highly skilled and trained. Control programs are led by professional members of the Canadian Avalanche Association.

While CSP patrollers are not trained in avalanche control, we do have a role in supporting the ski centre's control programs:

- Prior to control work, closing access to avalanche terrain, ensuring avalanche signs are flipped into the "closed — avalanche danger" position and that access gates are closed.
- Standing guard at major entry points to ensure the public do not enter.
- Relaying information to the skiing public regarding control activities and possible completion times.
- Once control work is complete and permission is given to open the closed areas, flipping avalanche signs to the "caution — avalanche danger" position and opening access gates.

Avalanche first aid

People caught in avalanches, either fully or partially buried, may have significant injuries. Rescuers should be prepared to provide airway support, assume traumatic injury and use spinal precautions when treating avalanche casualties. Follow **Patient Assessment, AFA Chapter 4** to determine injuries and treatment. When working with a patient involved in an avalanche:

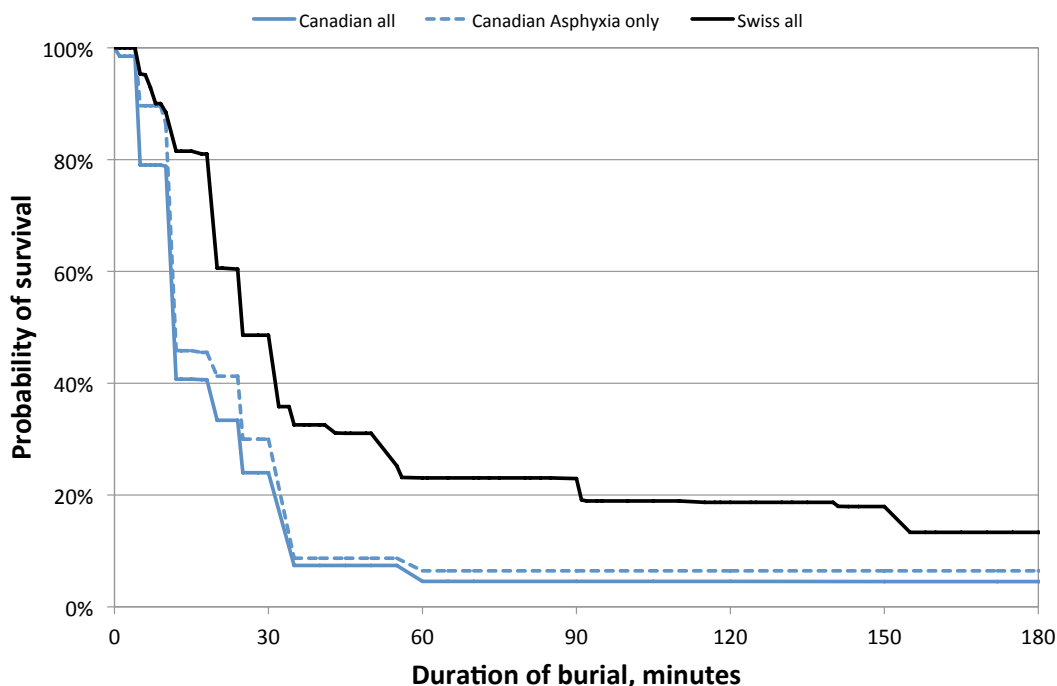
- Be aware of heightened risk of traumatic injury to the chest, head, neck and abdomen.
- Take spinal precautions.
- Use modified jaw thrust instead of head tilt chin lift because of heightened potential of spinal injury.
- Start CPR if necessary.
- Administer oxygen and monitor vitals.
- Treat for hypothermia. A patient will rapidly cool when extricated from snow.
- Administer oxygen therapy as soon as possible.

Hypoxia and hypercapnia reduce the level of consciousness. Continually monitor the airway and be prepared to start basic life support at any time.

As soon as the casualty is removed from the snow, expect the rapid onset of hypothermia. Insulate the person with foil sheets, blankets and a hat. Use chemical heat bags to add some external heat.

Avalanche survival

On average, a person buried in an avalanche has a 79 per cent chance of survival in the first 10 minutes. After that time, survival chances are reduced considerably.



Haegeli P., Falk M., Brugger H., Etter H.-J. and Boyd J., 2011. Comparison of avalanche survival patterns in Canada and Switzerland. Canadian Medical Association Journal, 183(7): 789-795.

A fast, efficient response is mandatory. Training in avalanche scene management and rescue techniques is required. A patroller attending an avalanche scene with a full burial may be exposed to single or multiple fatalities. Critical Incident Stress needs to be considered as part of the post-incident review (see Critical Incident Stress, AFA Chapter 19).

Avalanche safety training

The CSP has a long history of involvement with public avalanche safety education. Some programs, initially developed and delivered by the CSP, are the foundation on which current public avalanche education materials are based. Avalanche Canada is now the national organization responsible for public education.

Avalanche Canada www.avalanche.ca is the place to go for Canadian public avalanche information, including hazard bulletins and educational resources.

Avalanche Canada's mission:

"To minimize public risk in avalanche terrain by providing leadership, development, communication, coordination and delivery of public avalanche safety education, warnings, products and services"

Products and services provided by Avalanche Canada include:

- Public avalanche warning service — providing access to avalanche bulletins in Western & Northern Canada and Chic-Chocs, Quebec
- Mountain weather forecast for western Canada
- Avalanche Skills Training (AST) courses
- Snowmobile-specific information
- Youth education guidelines and programs

You may also contact the CSP's National Avalanche Program Coordinator for more information.



Appendix D. Adaptive snow sports



Fig D-1: Sit ski extrication training.

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Introduction

With the increased popularity of adaptive sports, patrollers may face unique challenges when assessing, treating and transporting persons with physical, intellectual or developmental disabilities. There is a vast array of adaptive equipment available both commercially and through personal ingenuity and adaptation. Equipment is adapted to suit each individual. The aim of using adaptive equipment is to use the least amount of equipment necessary to overcome some of the barriers an individual faces.

If there is an adaptive snow sports program at your ski centre, you should become familiar with the type of equipment used in that program and how to handle it, in case you are required to do so because of an incident.

The following information is intended to give you a general understanding of different types of snow sports, different types of adaptive equipment, relevant terminology and how to safely remove a patient from a sit-ski.

Refer to [Persons with disabilities, AFA Chapter 22](#) to review disabilities and assessment protocols.

Specialized equipment

A prosthesis is an artificial body part that replaces a lost body part. In this section, only musculoskeletal parts will be considered. A below-the-knee amputation is called a B/K trans-tibial amputation, while an above-the-knee is called an A/K trans-femoral amputation. An A/E amputation is usually the upper limb, between the elbow and the shoulder (trans-humeral or trans-radial). There are many different types of artificial legs, ankles and joints. They range in cost and technical sophistication, and may have been designed exclusively for the chosen sport. Because of the nature of snow sports, most prostheses will be mechanical, not computerized or electrical.

For people who have difficulty with balance and strength, helpful tools include canes and crutches, which vary widely in style and composition. The person may hold the aid on either the affected side or the non-affected side according to preference. Another common aid is a sling made out of a loop and tether, which helps the disabled person bring their leg into a desired position.

Wheelchair design varies widely and often caters to the specific needs of the individual. Chairs may be motorized, hand-powered or pushed by a caregiver. Some have removable parts to ease entry and exit, and may have extra padding or back extensions. Wheelchairs that are used for snow sports tend to be more rugged, with thicker, knobby tires for traction.

Most people will have a way they like to be assisted for transport and should be asked for their preference whenever possible.

Because of the variety of adaptive equipment, patrollers should take every opportunity to ask questions and engage in scenarios involving people with disabilities. Many adaptive participants are very open to discussion and take pleasure in the interest shown by others.

Types of adaptive snow sports

Two Track Skiing

Three Track Skiing

Four Track Skiing

Alpine Sit-Skiing

Nordic Sit-Skiing

Snowboarding

Two-track skiing

The skier uses two skis, initially without poles, and may use poles as they progress in ability. Good overall body strength and cognitive function are necessary.

Disabilities common to two-track include visual impairment, brain injury, developmental disability, cerebral palsy, below the knee amputation, arm amputation, multiple sclerosis and learning disabilities.

Equipment used

Ski Link

Also called Ski Bras, Edgie-Wedgie, TrySkis or ski clamps, this is a device attached to the front of the skis. It prevents the skis from crossing or spreading apart when the student cannot control their skis independently. Independent leg movement is reduced, so moving around on the flat is limited to shuffling.

Spacer Bar

A tube with a bungee cord through it, with connectors at either end, it is positioned between the student's boots, at the heels. The spacer bar is used when the student cannot form a wedge and needs the more stable platform provided by the position for balance. Wedge size is determined by the length of the tube.

Tethers

A tether is a long strap or leash used by an instructor to assist the student in making turns, slowing and emergency stopping. Tethers are attached to students at the ankles or to an upper body harness.

Three-track skiing

Using one ski and two outriggers, this method of skiing is commonly used by a person with an amputated or partially amputated leg.

Anyone who has difficulties with balance, strength or mobility may find outriggers to be beneficial. This includes individuals with conditions such as cerebral palsy, spina bifida, muscular dystrophy, hemiplegia, incomplete paraplegia (spinal cord injury), as well as those who have had strokes, traumatic brain injuries, or any type of leg weakness, leg injury or knee injury.

Equipment used



Outriggers

Handheld outriggers are an elbow/forearm crutch with either a ball or the tip of a ski on the bottom of the crutch. Most outriggers have a flip-ski function that allows them to switch easily between a sliding and a walking crutch. Some outriggers have a claw on the tail of the ski to add friction when used as a walking crutch. They all provide extra balance, mobility and turning maneuverability that a standard ski pole does not.



Wiffle ball

The wiffle ball is designed as an intermediate step toward independent use of regular outriggers. It is a grapefruit-sized ball that attaches to the end of an outrigger shaft in place of a ski and provides the balance support of a regular outrigger, but lacks edges.

Four-track skiing

Four-track skiing refers to a skier who has both legs and arms (either natural or prosthetic) and uses two outriggers.

This is the best method for individuals with mobility and/or balance issues, or who have lower limb weaknesses, but who have good upper body strength and are able to stand and walk (either with or without the use of walking aids or extra support).

Equipment used

- Outriggers for extra support and balance
- Tip clamps, Try Skis or the Edgie Wedgie may be necessary if there is a lack of lateral control
- Snow Sled or Walker Ski (A snow sled or walker on skis can also be used instead of outriggers)

Alpine sit-skiing

Sit-skis come in two varieties, bi-ski and mono-ski. Both have multiple configurations.

Bi-Ski



A bi-ski is a seat mounted on a pair of articulated skis. It can be used with hand-held or fixed outriggers and/or a handle bar. The bi-ski provides more stability than the mono-ski. Fixed outriggers (when equipped) control lateral stability and assist in defining the arc of the turn.

Bi-skiers may be able to ski with hand-held outriggers. If they are unable to return to the neutral skiing position with hand-held outriggers, they may use fixed outriggers and a handle bar. If fixed outriggers are attached to the bi-ski, the ski is tethered by a qualified instructor.

Disabilities common to bi-skiers include high-level injuries (C1-T7), quadriplegia, and people with severe multiple sclerosis, muscular dystrophy, cerebral palsy, spina bifida and multiple amputations.

Equipment used

- Handheld outriggers or fixed outriggers and tethers
- Tethers can be used by an instructor to assist the student to make turns and for slowing and emergency stopping. They are attached on the frame at the back of a bi-ski.

Mono-ski

A mono-ski is a seat mounted on a ski through a shock absorbing frame.

People with lower-level injuries including paraplegia and orthopaedic impairments most often use the mono-ski. Mono-skiers have strong upper bodies and have limited or no movement from the waist down.



Equipment used

- Handheld outriggers are used for balance. The skier can use outriggers to move the ski on the flats and uphill slopes, as well as to lift and rotate the ski while seated in it.
- Mono-skis come in a wide range of designs and performance levels suiting different skiing abilities.
- An instructor-held single tether may be used with a mono-ski to assist with speed control. As the skier progresses, the tether becomes unnecessary.

Nordic sit-skiing



A Nordic ski-ski is a seat mounted on a pair of Nordic skis. The skier uses modified ski poles to propel the skis.

Disabilities common to Nordic sit-skiers are the same as for alpine sit-skiers. Nordic sit-skiers have strong upper bodies and usually limited or no movement from the waist down.

Snowboarding

Equipment used

- Outriggers can improve balance and increase stability while walking, skating, side-slipping, straight-running or turning. Outriggers can also facilitate skill development and lend support to prevent falls. They are particularly useful for individuals with balance, strength or mobility challenges.
- A fixed outrigger is used by an individual with only one leg or prosthetic leg attached to a binding for support in their other binding. A fixed outrigger is an outrigger or a combined boot and outrigger that is strapped into the snowboard's binding. This provides a base of support for the individual. A single outrigger in one hand is used in conjunction with the fixed outrigger.
- A tether is a long strap used by an instructor to assist the student in turning, slowing and emergency stopping. They are attached to the students at the ankles or to an upper body harness
- A hula hoop can be held by both the student and instructor, allowing the instructor to stabilize the movement of the rider's centre of mass, giving the student more balance.
- A Sno-Wing is a device designed to allow an instructor maximum control of their student's movements. It is a lightweight, elliptical frame with a padded harness. The harness is attached at the pivot point of the student's hips.
- A snowboard bar is useful as a teaching aid for snowboarders who have low leg strength and control.



Fig OP D-6: Snowboard bar.

Blind/vision-impaired skiing and riding

Equipment used

- Wireless two-way radios allow the instructor and student to communicate. This allows an instructor or guide to provide directions or guidance on the student's skiing/riding.
- Bibs are worn by people with a visual impairment for visibility and safety. For vision-impaired students, both the guide and the student wear a bib.

Interactions with adaptive athletes

When attending to persons with disabilities, remember that there are many different physical and developmental disabilities you may encounter. Refer to the **Persons with disabilities, AFA Chapter 22**, for an overview of some types of disabilities you may encounter. Sit-skiers generally ski with an assistant (a family member, friend or coach), although some ski on their own.

Most people will have a way they like to be assisted and should be asked their preference whenever possible.

Rescuers should take every opportunity to ask questions and engage in conversation with people using adaptive equipment. Many adaptive participants are very open to discussion, and take pleasure in the interest shown by others.

Engaging with adaptive skiers and snowboarders is rewarding. If a patroller accompanies a sit-skier on the lift and they do a run together, the patroller gains a closer look at the equipment and has the opportunity to ask questions. Then, if a situation should occur at a later date, they will know more about the adaptive skier and their injury.

Sit-ski extrication

The most successful extrications are the result of a team approach. This may require as many as four rescuers: two to stabilize the patient and two to safely remove the equipment. Sit-skis vary greatly in design by manufacturer and from recreational skis to the competition skis. In most situations the sit-skier will be able to give specific instructions for the sit-ski they are using. Familiarity with the safe removal of a sit-ski is of vital importance to prevent any injury to the rescuer.

Carefully remove the gear from the patient. Alpine sit skis can be very heavy, and patients can be found upside down and suspended by their straps. The adaptive gear should be lifted from the patient rather than pulling the patient out of the equipment.

Transporting adaptive equipment and prosthetics should be done with extreme care and respect. They often cost thousands of dollars and may be irreplaceable if damaged. Keeping a patient's adaptive equipment nearby may be useful and will help reduce anxiety. Accept any instructions given by the patient with regards handling their gear.

Lift evacuation for adaptive skiers and snowboarders

Chairlift evacuation procedures for adaptive skiers and snowboarders are the responsibility of ski centre management. Refer to **Lift evacuation, OP Chapter 9**.

Patrollers should familiarize themselves with the process for their area.

Every sit-ski should carry three evacuation straps, placed on either side of the seat and between the skier's legs, and hooked into special holders. During an evacuation, these straps form a triangle and are joined together by carabiners. The lift evacuation belay is attached to the main carabiner, and the skier may then be lowered using the standard method with extra assistance on the ground. Before proceeding with an evacuation, inspect all straps and tethers, and double-check locking carabiners. Everyone involved needs to feel comfortable with the procedure and know their roles.

Note: Most sit-skiers will never have been evacuated and many will have never looked at their straps. This is one situation in which they may not be familiar with their own system.

When evacuating a sit-skier, the rescuer needs ensure the sit-skier is lifted off the chairlift seat before they are swung out. There are two reasons for this. First, if the sit skier wiggles off the seat they will drop a little and surprise everyone. Also, they have likely never hung from the straps and don't going to know how it feels. The weight distribution can be tricky. If a person leans backwards with their weight on two points and almost no weight on the front point, they could flip over backwards. So always lift the person off the chairlift seat to give them a chance to find their centre of gravity.

Visually impaired skiers may require additional instructions and coaching during a lift evacuation. If a basket harness is available, this may lessen anxiety and expedite the process. A rescuer may also be hoisted into the chair using the harness and ropes. Once in the chair, the rescuer can remove the harness, slide over and safely place it around the patient for lowering.

Appendix E. Knots, hitches and belay



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This section addresses basic rope skills and is not intended to provide for technical skills training. The techniques and skills discussed in this chapter are of importance to both alpine and nordic patrollers.

CSP members are expected to work within their scope of practice and level of training. Technical high-angle rescue is not within the CSP scope of practice. Some ski areas might provide additional training to CSP members to enable them to assist in certain situations (such as belay techniques) and will have a certification and training process to do this, separate and distinct from the CSP.

Although some of these knots will be used almost daily by patrollers, others will rarely be used. The knots that are used regularly need to be practised so that the patroller is proficient with their use in incident response or day-to-day operations. For example, a clove hitch is used regularly to install or tighten up rope and bamboo fence lines.

Depending on the ski centre, you may be asked to carry additional equipment as required by the skills and techniques you are certified to use. Responsibility for technical equipment such as climbing ropes and lift evacuation ropes, and the logging and inspection of this equipment lies with the ski centre.

CSP members who wish to learn more about technical rope skills are encouraged to do so through a local search and rescue (SAR) group or through accredited training. There is no national Canadian governing body that the CSP can refer its members to. Some jurisdictions do have standardized training, such as the Justice Institute of British Columbia, which provides standardized training for search and rescue members, or the Association of Canadian Mountain Guides. As well, accredited mountaineering schools who use ACMG instructors can also provide standardized training.

Knots and hitches

Knots are a weak point in any system. Always use the best and strongest knot for a given situation, whether it is tying a bandage, joining two lengths of rope together or installing a rope and bamboo fence line.

The "end," or "working end," is the part of the rope in which the knot is tied. The unused portion is called the "standing part."

Knots and Hitches	
Bowline	Used to attach a line to an object. Can be used to attach the tail rope to the toboggan.
Clove hitch	Used to tie a rope to a pole or to attach a rope to the front of the skis when making an improvised toboggan.
Overhand knot	Used as a back-up knot to another knot to prevent the principle knot from becoming untied.
Munter hitch	Most commonly used in belaying, to provide friction.
Reef knot	Used for tying bandages because it lies flat, will not slip and is easy to undo.

Bowline

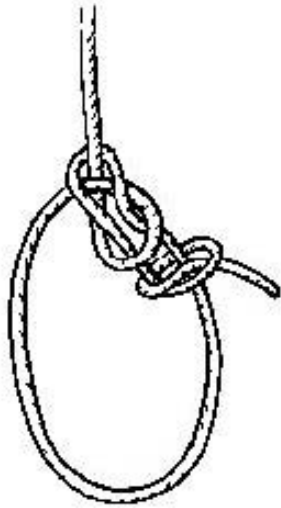


Fig OP E-3: Bowline.

The bowline creates a loop that will neither jam nor slip.

- Form a loop from the standing part.
- Bring the end up through the loop, around the standing part, and back down through the original loop.
- Tighten the end by holding onto the bight formed by the rope end and pulling hard on the standing part.
- Tie off with an overhand knot for safety.

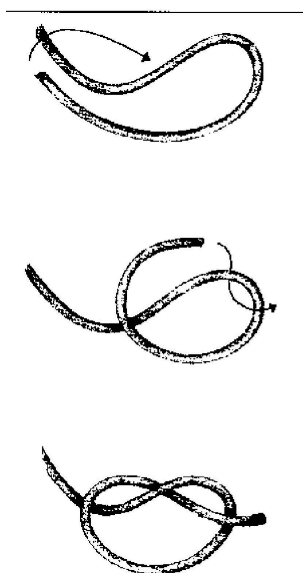
Clove hitch



The clove hitch is used to tie a rope to a pole or to attach a rope to the front of the skis when making an improvised toboggan.

- Take two turns around the object being fastened to.
- Pass the end through the turn so that the end of the rope and the standing part of the rope are pointed in opposite directions.

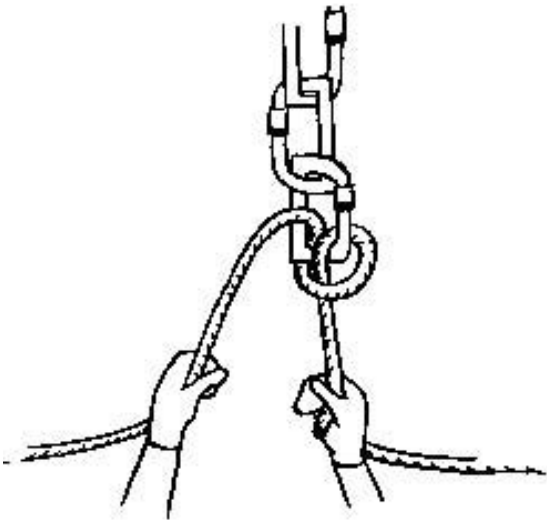
Overhand Knot



The overhand knot is the simplest of knots. Once loaded, it jams easily and is difficult to untie and is therefore used on packages and other items more easily cut open than untied. It is also useful as a back-up knot to another knot to prevent the principle knot from becoming untied.

- Form a loop and pass the end through the loop.

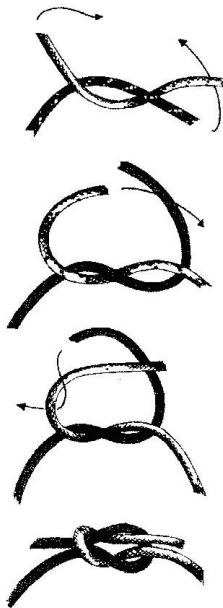
Munter hitch



The Munter hitch is very simple and most commonly used to provide friction in belaying.

- Make a turn and a half through a ring or carabiner.

Reef Knot



The reef knot is used for tying two ropes of equal size together. It is also used for tying bandages because it lies flat, will not slip and is easy to undo.

- Begin with an over-and-under crossing.
- Bring the ends back above and reverse the crossing.
- Pull on the ends to snug up the completed knot.

Belay

Whether you patrol alpine slopes or nordic trails, the need may arise for you to belay a toboggan over terrain on which you could not safely drive it.

It is not only important to recognize when a belay is required, but also to be trained in the various aspects of performing a belay, including tying specialized knots in ropes and webbing, determining and setting an anchor, and helping lift and pull the rig over the terrain.

That said, this special application of toboggan handling should only be conducted with the approval of your local area management. In some instances, you may have to comply with local, provincial or other mandated guidelines.

General Principles

Ensure equipment used for a belay is certified for the purpose and is routinely inspected according to the manufacturer's recommended guidelines for use and life expectancy.

Use a belay when it is not possible to safely transport a toboggan down or across certain terrain. For example, a belay may be necessary when a slope is rocky, very steep and icy, or when the incident is off trail.

Do not attempt a belay unless all the patrollers involved have been properly trained and authorized by the area management to conduct a belay.

This is in no way authorization to use a belay, and patrollers wishing to operate a belay system should seek certified training specific to the techniques and equipment used for the loads to be encountered during this type of evacuation.

Appendix F. Search and rescue



CANADIAN SKI PATROL PATROUILLE CANADIENNE DE SKI TM _{MC}

Missing person search

Jurisdiction

In Canada, responsibility for Search and Rescue (SAR) is assigned to different bodies depending on where the incident takes place. The approach is designed to promote individual, collective and organizational behaviour that minimizes the risk of injury or loss of life while maintaining timely and effective response services.

The Canadian Armed Forces are responsible for aeronautical incidents, the Canadian Coast Guard is responsible for marine incidents and Parks Canada is responsible for incidents within national parks. Provincial and Territorial governments are responsible for searches for missing persons, including those who are lost or overdue, on land or inland waters. These incidents are commonly known as Ground Search and Rescue (GSAR). Responsibility for GSAR is usually delegated to the jurisdiction's police service.

The local ski area will have a Missing Persons Plan or Standard Operating Procedure. They are responsible for initiating a missing person search at the ski area, including calling the jurisdictional agency responsible for SAR (e.g. the RCMP). CSP is not responsible for SAR and members are not specifically trained in SAR procedures. It is likely that all available operational personnel at the ski area, including CSP, will be deployed to assist in a search. It is important to remember, however, that the primary responsibility of CSP is to the rest of the skiing public at the area and this role cannot be compromised.

Recording Information

A CSP member may be the first person to receive information about a missing person. For example, a parent might approach you to tell you of a missing child. Recording correct information from those reporting a lost person is an important part of search procedures and a critical step in a successful operation. An **example missing person form** is appended. This comprehensive data avoids misunderstandings that can often result from oral communication. This data will be used as a reference throughout the search.

Be Prepared

The patroller must consider factors such as possible weather patterns, the difficulty of the terrain, the remaining hours of daylight and personal fitness if preparing to assist. Your patrol pack may not include all the items you might need to assist with an extended search, and this should be carefully considered before joining the search. Some patrollers leave ready packs at the hill in case of this type of emergency. Items in the ready pack might include avalanche rescue equipment (if trained and qualified to use it), climbing skins for ski/board, headlamps, extra warm clothes and extra food.

Communication

The arrival of other SAR resources will mean that multiple communication systems and radio frequencies might be in use and an incident management system will be deployed. The patrol radio will form a critical link in the communication system and extra diligence will be required by patrollers to limit use of the radio to essential communication and stick to defined and assigned roles.

The patrol's experience travelling on ski/board and familiarity with the terrain and the hill equipment will render you an important part of the incident command structure.

SAR Training

CSP members who wish to be trained in SAR procedures and skills including SAR management, incident command systems, navigation/map and compass and survival should consider joining a local SAR team. All provinces and territories use a similar structure for training SAR team members through certification such as "Basic Ground Search and Rescue."

Missing person form Page 1/2



Time	Date	Location	Recorder
Informant information - (should be in contact until search is complete):			
Name	Address		
Phone	Current location		
Age			
Missing person information:			
Name	Activity		
Age	Local address		
Phone	Local phone		
Height	Weight	Hair	Complexion
Route and objective			
Equipment			
Clothing description			
Footwear description			
Skis, Snowboard, etc.			
Colour/type of shelter <input type="checkbox"/> None			
Food	Amount		
Drink	Amount		
Packaging/brands/containers			
<input type="checkbox"/> Knife	<input type="checkbox"/> Map	<input type="checkbox"/> Compass	<input type="checkbox"/> GPS
<input type="checkbox"/> Shovel	<input type="checkbox"/> Probe	<input type="checkbox"/> Avalanche transceiver	<input type="checkbox"/> Repair kit
<input type="checkbox"/> 1st aid kit	<input type="checkbox"/> GPS tracker	<input type="checkbox"/> Light	<input type="checkbox"/> Fire starter
<input type="checkbox"/> Other	<input type="checkbox"/> Flares	<input type="checkbox"/> Whistle	
Vehicle Year/Make/Colour		Licence plate	
Vehicle location			
Health and habits			
Vision	<input type="checkbox"/> Good	<input type="checkbox"/> Weak	<input type="checkbox"/> Glasses
Hearing	<input type="checkbox"/> Good	<input type="checkbox"/> Weak	<input type="checkbox"/> Hearing aid
Language	<input type="checkbox"/> Able		<input type="checkbox"/> Mute
Handicaps	<input type="checkbox"/> Mental	<input type="checkbox"/> Physical	Description
<input type="checkbox"/> Smoker	<input type="checkbox"/> Drinker	<input type="checkbox"/> Medical conditions:	

Missing person form Page 2/2



Nutritional state	<input type="checkbox"/> Good	<input type="checkbox"/> Normal	<input type="checkbox"/> Poor
Emotional state	<input type="checkbox"/> Good	<input type="checkbox"/> Normal	<input type="checkbox"/> Poor
Stamina	<input type="checkbox"/> Good	<input type="checkbox"/> Normal	<input type="checkbox"/> Poor
Physical ability	<input type="checkbox"/> Good	<input type="checkbox"/> Normal	<input type="checkbox"/> Poor
Outdoorsmanship	<input type="checkbox"/> Good	<input type="checkbox"/> Normal	<input type="checkbox"/> Poor
Area familiarity	<input type="checkbox"/> Good	<input type="checkbox"/> Normal	<input type="checkbox"/> Poor

Other _____

Circumstances (concerning the missing person/party)

Number in Party	Leader (Y/N)	Experience (yrs.)
_____	_____	_____
Last seen:	Location	Date
_____	_____	_____
	Time	

Weather at site

Temp. _____ °C

Clear
 Cloudy
 Whiteout
 Fog
 Calm
 Windy

Heavy
 Heavy rain
 Light rain
 Snowing
 Misty

Further details

Appendix G. Trauma packs



Fig OP G-1: Trauma pack.

Some areas store their more advanced and supplemental first aid supplies in a knapsack or bag for easy transport to more serious incidents. These packs are frequently stored in huts closer to the terrain. These supplemental packs are often called trauma packs/kits.

The contents of trauma packs may include equipment for:

- Oxygen therapy
- Airway management
- Spinal immobilization
- Bandaging and splinting

Automated External Defibrillators (AEDs) may be stored in the same location as the trauma pack for faster access, but keep in mind that AEDs must be stored in a warm location to protect the battery.

For patrols that attend off-site events such as ski loppets and marathons, or summer events, trauma kits may also contain items to enable you to manage injuries for the longer times caused by distance from EMS. They may also contain first aid supplies particular to injuries possible at the event.

Appendix H. Alpine checklist and training booklet

Instructions Alpine On Snow Training and Evaluation Checklist – 2021 v1

The Alpine Training Checklist has changed. The modifications create a systematic approach to ensure both competence and confidence in the toboggan driving ability of new candidates and patrollers doing their three-year requalification. Instructors are encouraged to refer to training modules in the national database for instructional consistency, accuracy, and national standards compliance.

It consists of 4 components, 1) initial evaluation, 2) competency, 3) toboggan driving and 4) summary evaluation. These components are further divided between 8 sections.

Initial Evaluation Component -1

Section A) **Ski/Ride Ability Evaluation**

Start here. Once the on snow instructor has been assured that the candidate meets the requirements of the Ski/Ride evaluation, the candidate should then move on to the competency components, sections B, C, and D. If further instruction or practice is required prior to evaluation, CSIA/CASI instruction is recommended.

Competency Component - 2

Sections B) **Incident Site Management**, C) **Equipment**, and D) **Pre-Toboggan Training**

These three sections may be done in any order or concurrently, however, in order to ensure confidence and competence in the candidate, they should be complete before moving on to the toboggan driving component.

Toboggan Driving Component - 3

Sections E) **Toboggan Unloaded**, F) **Toboggan Loaded**, and G) **Two Person Toboggan**

When both 1) the on snow instructor is satisfied* that the candidate has qualified to move on in the training and 2) the candidate also feels prepared to move on, they should begin with section E) **Toboggan Unloaded** and then move on to section F) **Toboggan Loaded**. Once "one person toboggan" training is complete, the candidate may continue with section G) **Toboggan Two Person**.

****Both instructor and candidate should be in agreement throughout the training. If either feels the candidate is not ready to proceed, the training should continue at the current level.***

Summary Evaluation – 4

Critical Outcomes section

After training is complete, the candidate must complete a summary evaluation of the prescribed objectives listed in this section. The final evaluation can be done in one complete scenario or broken up into parts demonstrated at different times.

It is strongly recommended when possible that this section be evaluated and signed off by two on snow instructors. There is a signature line for each instructor. When not possible, the instructor(s) doing the initial training should be different than the instructor conducting the summary evaluation.

Once the final section, **Critical Outcomes**, has been completed successfully, the candidate is considered an Alpine qualified patroller. Congratulate the candidate, congratulate yourself(s), and give the signed checklist to your on snow coordinator so the results can be recorded on the National Database (NDS).

Instructions

Alpine On Snow Training and Evaluation Checklist – 2021 v1

3 Year Requalification

For qualified on snow patrollers who are confident and competent in their on snow skills, the summary evaluation may be administered.

In this case the returning patroller must successfully demonstrate the listed Critical Outcomes to a certified on snow instructor. Upon successfully completing all ten competencies and speaking about the three knowledge competencies of their home resort, the patroller can be signed off and may be considered re-qualified.

If a returning patroller wishes to train before the summary evaluation, they may choose to join new candidate training or work through the checklist with an on-snow instructor(s).

Once the requalifying patroller is confident in their skills they can ask to complete the summary evaluation.

Alpine On Snow Training Checklist



Patroller Name: _____ Date Ski/Ride Ability Evaluation: _____

CSP ID#: _____ Date Training Begins: _____

Discipline: Ski Snowboard Telemark

1. Initial Evaluation

A) Ski/Ride Ability/Evaluation

- Travel, turn, climb, stop
- Stable and balanced stance
- Control of speed and direction
- Sideslip (S),(SB. toe and heel edge)
- Traversing (toe and heel edge) (SB)
- Snowplow
- Edging, pivot, and pressure control
- 180-degree flat spins down the fall line (SB)
- Timing and coordination
- 4-6 turns on moderate terrain
- 4-6 turns on difficult terrain
- Three toe edge hops uphill and hold an edge for count of three (SB)
- Remove and secure skis/snowboard while on medium pitch then put on skis or snowboard.
- With back foot unstrapped skate, turn left & right, stop (SB)
- Carrying equipment
- Fitness/flexibility/strength
- Applies Alpine Responsibility Code
- Safe and in-control
- Full run
- Ride all lifts at area (when terrain available)

2. Competency

B) Incident Site Management

- Scene Survey
- Communication (whistle, hand, radio)
- Teamwork, roles, competency, safety
- Marks incident site
- Location of key equipment
- Secures toboggan and equipment
- Loading patient
- Location, directions to medical facility
- Follow-up and site clean-up
- Transport of backboards/equipment
- Patient follow-up at base
- Racer Down Protocol

C) Equipment

- Toboggan inspection
- Pack check/uniform check
- Toboggan set up/operation
- Toboggan transport uphill
- Area specific equipment

D) Pre-Toboggan Training

- Falling leaf (S)
- Direction change
- Stable and balanced position throughout drills
- Modified pendulum (toe and heel edge) (SB)
- Dynamic side slip (toe and heel edge) (SB)
- Pivot turns on flat skis (S)
- Handlebar simulation practice
- Tail rope practice
- Toe edge hops uphill /ski or step uphill against resistance

3. Toboggan Driving

<p>E) Toboggan Unloaded</p> <ul style="list-style-type: none"> <input type="checkbox"/> Communications(whistle, hand, radio) <input type="checkbox"/> Check traffic <input type="checkbox"/> Route finding <input type="checkbox"/> Position in handles <input type="checkbox"/> Stable and Balanced <input type="checkbox"/> Use of brake and toboggan runners <input type="checkbox"/> Sideslip <input type="checkbox"/> Falling leaf or pendulum <input type="checkbox"/> Snowplow (S) <input type="checkbox"/> Traversing <input type="checkbox"/> Direction change <input type="checkbox"/> Controlled, smooth, safe descent <input type="checkbox"/> Pivot turns / Straight running <input type="checkbox"/> Use of fall line <input type="checkbox"/> Compensating (for varying conditions) <input type="checkbox"/> Stopping: at a safe distance, uphill and away from accident scene <input type="checkbox"/> Toboggan secured by at least two points at scene 	<p>F) Toboggan Loaded (2 Person)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Load position and communication to patient <input type="checkbox"/> Check traffic on start and stop <input type="checkbox"/> Position in handles <input type="checkbox"/> Route finding <input type="checkbox"/> Stable and balanced <input type="checkbox"/> Sideslip <input type="checkbox"/> Falling leaf or pendulum <input type="checkbox"/> Snowplow (S) <input type="checkbox"/> Use of brake/runners <input type="checkbox"/> Use of fall line <input type="checkbox"/> Transitions (safe, smooth, controlled) <input type="checkbox"/> Controlled, smooth, safe descent <input type="checkbox"/> Direction change (static and moving) <input type="checkbox"/> Compensating (for varying conditions) <input type="checkbox"/> Tail rope used for stability while traversing <input type="checkbox"/> Tail rope used for assisted braking (if applicable) 	<p>G) Toboggan Two Person (See (F)... plus)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Tail rope is handled and secured safely <input type="checkbox"/> Driver change over efficient and safe <input type="checkbox"/> Communication with other patrollers <input type="checkbox"/> Tail rope patroller is in stabilizing position during traverse, and braking position during descent <input type="checkbox"/> Toboggan driver in charge (route, communication)
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4. Summary Evaluation

<p>Critical Outcomes</p> <p>Demonstrates safety, control and competency during incident simulation that includes:</p> <ul style="list-style-type: none"> <input type="checkbox"/> being called to an incident <input type="checkbox"/> getting and inspecting a toboggan <input type="checkbox"/> bringing an unloaded toboggan to an incident site <input type="checkbox"/> securing a toboggan <input type="checkbox"/> incident site management <input type="checkbox"/> loading a patient <input type="checkbox"/> driving a loaded toboggan <input type="checkbox"/> two-person driver change-over <input type="checkbox"/> tail rope handling <input type="checkbox"/> patient handoff communication <p>Demonstrates knowledge of home area:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Policies <input type="checkbox"/> Procedures <input type="checkbox"/> Communications 	<p><u>Summary evaluation evaluator name and CSP ID#:</u></p> <p>Instructor #1: _____</p> <p>Instructor #2: _____</p> <p>Date: _____</p> <p>Notes: _____</p> <p><u>Ski/ride ability evaluator name and CSP ID#:</u></p> <p>Instructor: _____</p> <p>(S) indicates item is directed to skiers (SB) indicates item is directed to snowboarders</p> <p>Modifications to OST checklist are not permitted without written approval of the National On Snow Coordinator</p>
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Appendix I. Nordic checklist and training booklet

Instructions Nordic On Snow Training and Evaluation Checklist – 2021 v1

The Nordic Training Checklist has changed. The modifications create a systematic approach to ensure the new candidate and the requalifying patroller have both competence and confidence in their ability to extricate (as needed) and participate in the transportation of the patient. Instructors are encouraged to refer to training modules in the national database for instructional consistency, accuracy, and national standards compliance.

It consists of 4 components, 1) initial evaluation, 2) competency (two sections), 3) toboggan and 4) summary evaluation.

Initial Evaluation Component -1

Section A) **Ski Ability/Evaluation**

Start here. Once the On Snow instructor has been assured that the candidate meets the requirements of the Ski evaluation, the candidate should then move on to the competency components, sections B and C. If further instruction or practice is required prior to evaluation, CANSI instruction is recommended.

Competency Component - 2

Sections B) **Incident Site Management**, C) **Survival** and D) **Equipment**

These two sections may be done in any order or concurrently, however, in order to ensure confidence and competence in the candidate, they should be complete before moving on to the toboggan driving component.

Toboggan Component - 3

Sections E) **Toboggan unloaded** and F) **Toboggan loaded**

When both 1) the On Snow instructor is satisfied* that the candidate has qualified to move on in the training and 2) the candidate also feels prepared to move on, they should begin with section E) **Toboggan unloaded** and then move on to section F) **Toboggan loaded**. Once the training is complete the candidate may then move on to the summary evaluation.

****Both instructor and candidate should be in agreement throughout the training. If either feels the candidate is not ready to proceed, the training should continue at the current level.***

Summary Evaluation Component - 4

Critical Outcomes

After training is complete, the candidate must complete a summary evaluation of the prescribed objectives listed in this section. The final evaluation can be done in one complete scenario or broken up into parts demonstrated at different times.

It is strongly recommended when possible that this section be evaluated and signed off by two on snow instructors. There is a signature line for each instructor. When not possible, the instructor(s) doing the initial training should be different than the instructor conducting the summary evaluation.

Once the final section, **Critical Outcomes**, has been completed successfully, the candidate is considered a qualified Nordic patroller. Congratulate the candidate, congratulate yourself(s), and give the signed checklist to your on snow coordinator so the results can be recorded on the National Database (NDS).

Instructions

Nordic On Snow Training and Evaluation Checklist – 2021 v1

3 Year Re-qualification

For qualified Nordic on snow patrollers due for requalification who are confident and competent in their on-snow skills, the summary evaluation may be administered.

In this case the returning patroller must successfully demonstrate the listed Critical Outcomes to the evaluator. Upon successfully completing all ten competencies and three knowledge competencies of their home resort, the patroller can be signed off and may be considered re-qualified.

If a returning patroller wishes to train before the summary evaluation, they may choose to join new candidate training or work through the checklist with an on-snow instructor(s).

Once the re-qualifying patroller is confident in their skills, they can ask to complete the summary evaluation

Other (specify)

"Other" provides the opportunity to specify an alternate discipline.

AFA Certified Patrollers who wish to patrol with an alternate mode of transportation (snowshoes, fat bike)

The CSP does not provide evaluation for snowshoe or fat bike skills at this time. Competence relative to the terrain is the responsibility of the patroller. The Patrol Leader and/or the ski centre management or event operator should approve the involvement of any qualified patroller at the venue.

For snowshoe qualification:

The patroller is required to complete components 2) Competency, 3) Toboggan and 4) Summary Evaluation.

For fat bike qualification:

The patroller is required to complete components 2) Competency and 4) Summary Evaluation (without including driving a toboggan)

Nordic Checklist

Nordic On Snow Training Checklist



Patroller Name: _____ Date Ski/Ride Ability Evaluation: _____

CSP ID#: _____ Date Training Begins: _____

Discipline: Classic Skate Other Specify: _____

1. Initial Evaluation

- A) Ski Ability/Evaluation
- Diagonal stride – Classic
- Relaxed and balanced
 - Weight transfer complete from one ski to other
 - Propulsion forward from front leg
 - Use of wax pocket to spring load
 - Correct pole plant timing
 - Body position and tempo adjusted to terrain
- Double pole – Classic
- Core muscles engaged to crunch down
 - Poles planted in line with toes
 - Arms and shoulders move together as a unit
- Kick double pole
- Kicks back with one leg while reaching forward with both arms
 - Double pole position with alternating legs
- Herringbone – Classic
- Herringbone fast/slow
- Track transition – Classic
- Correct timing and location to step in/out
 - Control and balance
 - Communication and safety
- Downhill – Classic/Skate
- Relaxed and balanced to absorb terrain
 - Hips, knees, and ankles engaged and flexible
 - Transition, control speed and stop (snowplow, telemark / parallel)
 - Link 6 snowplow turns
 - Side slip
- Cornering
- Stay in track in moderate terrain
 - Step turn on corners (not snowplow)
- Skate skiing (depends on area)
- One, two, offset and free skate
 - Skate type and pole use adjusted to the terrain
 - Arm propulsion coordinated with skate technique
 - Weight transfer and balance from one ski to other
 - Energy transfer and forward leg propulsion
- Overall ability
- Skis efficiently in all terrain
 - Skis in control at all times
 - Skis all trails at facility

2. Competency

- B) Incident Site Management
- Scene Survey (AFA patient assessment)
 - Communication (whistle, hand, radio)
 - Teamwork, roles, competency, safety
 - Marks and secures incident site
 - Location of key equipment
 - Secures toboggan and equipment
 - Loading patient
 - Location, directions to medical facility
 - Follow-up and site clean-up
 - Transport of backboards/equipment
 - Ski with gear in arms
 - Patient follow-up at base
 - Facility specific requirements (e.g., snowmobile operation)
- C) Survival
- Modified McDonald Shelter
- D) Equipment
- Toboggan inspection
 - Pack check/uniform check
 - Toboggan set up/operation
 - Toboggan transport
 - Area specific equipment (e.g., vacuum splints)

3. Toboggan Driving

<p>E) Toboggan unloaded – Nordic sled</p> <ul style="list-style-type: none"> <input type="checkbox"/> Check traffic <input type="checkbox"/> Route finding <input type="checkbox"/> Uphill travel <input type="checkbox"/> Downhill travel <input type="checkbox"/> Direction change <input type="checkbox"/> Controlled, smooth, safe descent <input type="checkbox"/> Compensating (for varying conditions) <input type="checkbox"/> Toboggan secured by at least two points at scene 	<p>F) Toboggan loaded – Nordic sled</p> <ul style="list-style-type: none"> <input type="checkbox"/> Load position and communication to patient <input type="checkbox"/> Check traffic on start and stop <input type="checkbox"/> Route finding <input type="checkbox"/> Stable and balanced <input type="checkbox"/> Transitions (safe, smooth, controlled) <input type="checkbox"/> Controlled, smooth, safe descent <input type="checkbox"/> Direction change (static and moving) <input type="checkbox"/> Compensating (for varying conditions) <input type="checkbox"/> Tail/outrigger rope used for pull assist, stability, braking
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4. Summary Evaluation

<p>Critical Outcomes</p> <p>Demonstrates safety, control and competency during incident simulation that includes:</p> <ul style="list-style-type: none"> <input type="checkbox"/> being called to an incident <input type="checkbox"/> getting and inspecting a toboggan <input type="checkbox"/> bringing an unloaded toboggan to an incident site <input type="checkbox"/> securing a toboggan <input type="checkbox"/> incident site management <input type="checkbox"/> loading a patient <input type="checkbox"/> driving a loaded toboggan <input type="checkbox"/> two-person driver change-over <input type="checkbox"/> tail rope handling <input type="checkbox"/> patient handoff communication <p>Demonstrates knowledge of home area:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Policies <input type="checkbox"/> Procedures <input type="checkbox"/> Communications 	<p><u>Summary evaluation evaluator name and CSP ID#:</u></p> <p>Instructor #1: _____</p> <p>Instructor #2: _____</p> <p>Date: _____</p> <p>Notes: _____</p> <p><u>Ski/ride ability evaluator name and CSP ID#:</u></p> <p>Instructor: _____</p> <p>Modifications to OST checklist are not permitted without written approval of the National On Snow Coordinator</p>
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(F.I.P.S.) Fédération internationale des patrouilles de ski



Fig OP I-1(1): F.I.P.S logo.

The Fédération internationale des patrouilles de ski (FIPS) is the international organization representing ski patrol and associated ski safety organizations with membership from throughout the world. These patrol and safety organizations comprise full-time and volunteer ski patrollers, doctors, lawyers, engineers, technicians, ski equipment instructors, and ski area managers, who are involved in the multi-disciplinary activities of ski patrolling and safety.



Fig OP I-1(2): CSP contingent at the 2019 F.I.P.S. conference in Argentina.

Member countries of FIPS are Australia, Argentina, Canada, Chile, Finland, France, Italy, Japan, Korea, New Zealand, Norway, Romania, Russia, Scotland (UK), Serbia, Sweden, Switzerland, USA. In addition, there are a number of Associate Members who are non-national organizations.

Mark Labow, a member of the Canadian Ski Patrol was the impetus for starting FIPS and the founding president. In 1979 the first meeting was held in Calgary, Alberta. Although there were many ski patrols in existence at that time, there was very little communication between them. Patrollers who had the opportunity to ski in other countries noticed differences and some commonality in procedures and standards relative to their own. In addition, accident prevention programmes were being implemented in some countries but not in others. A number of countries did not have



Fig OP I-3: CSP Life Members at the 2019 F.I.P.S.

FIPS was created as the world forum for ski patrollers to meet, exchange ideas and compare the latest in patrol techniques on a regular basis. FIPS is supported by national patrol organizations, both large and small, to provide the necessary input and to offer potential solutions to patrolling issues. To enable this collaboration FIPS holds a congress every two years in at a location of a member nation. For more information on F.I.P.S. see the website at <https://www.fips-skipatrol.org>, a national ski patrol organization.