

CANADIAN SKI CROSS EVENT HOSTING MANUAL



SKI CROSS



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INTRODUCTION/ HISTORY

Ski Cross was created as the part of very early alpine ski competitions, which had the so-called 'mass starts'. The mass start was used, for example, in the one of the first races, the 'Inferno' in Mürren Switzerland, developed by a group of British skiers. Modern variations of the 'mass start' concept were first used in snowboarding and now in skiing since the late 1990's.

Ski Cross is an action packed event with Athletes using a combination of skills competing head to head on a Cross Course with rollers, bank turns and jumps, all done with an attitude.

"First through the finish wins."



SKI CROSS OVERVIEW

Internationally, Ski Cross is governed by the Freestyle branch of the FIS and therefore the FIS Freestyle ICR is the rule book used to govern Ski Cross. The instructions and rules contained in this document are only a summary of the rules of Ski Cross.

THE HISTORY OF SKI CROSS

The Canadian Ski Cross team was formed in June of 2007 after the IOC decision to include the freestyle discipline into the Olympic program for the 2010 Olympic Winter Games (OWG) in Vancouver, BC - following a very successful introduction of its sibling discipline Snowboard Cross at the 2006 OWG in Torino, Italy.

In essence the Alpine Canada Ski Cross program focused solely on World Cup, World Championships, and Olympic Winter Games performance in alignment with the funding requirements set forth via Own The Podium (OTP). The Ski Cross team had relative success in winning a Gold medal (Women Ski Cross) and placing three other athletes in the top 6 (4th/5th/6th) at the 2010 OWG. The strength of the high performance program has also been such that the Canadian Ski Cross has been the number one team in the World for its three years of existence and has contributed to Canada's domination in the FIS Freestyle Nations Cup over the past three seasons. Ski Cross, albeit a FIS freestyle discipline, was managed under the direction of the Canada Snowsports Association (CSA) up to the conclusion of the 2010 OWG. At that point, the directive from Sport Canada was for Ski Cross to partner with an existing National Sport Organization (NSO) to ensure efficiencies and continuity in the Canadian Sport system. After much discussion and deliberation Ski Cross was accepted under the Alpine Canada Alpine (ACA) umbrella in June 2010. This ultimately was the logical place for Ski Cross as it is widely recognized by Canadian Ski Cross personnel that the long term athlete development model of ACA provides much of the essential skills needed to be successful in ski cross.

STRUCTURE OF SKI CROSS IN CANADA

Ski Cross is now structured as a discipline of the Alpine competitive stream within Alpine Canada Alpin. Alpine Canada views Ski Cross as a unique opportunity to introduce Ski Cross into the LTAD of ACA. Not only does it bring a new and exciting aspect to the Alpine world but it will allow athletes to develop new skills that can further their development and adaptability into all disciplines of ski racing. Building off the momentum of the Olympics and World Cups ACA is focused on strong partnerships within the provinces of Canada to develop and educate officials, coaches, athletes and resorts on Ski Cross competitions. This manual will give you some insight into what is needed for each age category and level of the LTAD.

SECTION 2 MEMBERSHIP AND REGISTRATION



Memberships are sold through your local club or provincial sport organisation. Please see the membership chart on ACA's website to help choose the right category for you.

<http://alpinecanada.org/alpine-canada-members>

Membership Requirements to Compete

Open Events – Both members & non-members can enter open events. As a member talk to your club about attending open events & managing entries. As a non-member you can enter in 2 ACA sanctioned open events without purchasing a club membership. If you want to continue to enter in ACA sanctioned open events you must join a club to participate before the 3rd open competition. Contact your local club or provincial organisation before the event.

FIS events – Members 15 years & older must hold a national card & register for a FIS licence in order to compete in FIS calendared events. Contact your local club or provincial organisation to get information on programs. Be sure to register for your card before June 1st each season to get the best price & maintain your point profile.

How to register for events

Each event will have a race notice posted on the Alpine Canada Alpin or provincial ski association's website. The race notice will give you all the important details for each event. For all events you can register prior to the event; the details for registration will be found on the race notice. Pre-registering is preferred in open events & required for FIS events. Open events will also have onsite registration available on the day of the event. Times & locations will be posted on the race notice.

SECTION 3 COACHING

A coach's involvement in SX is vital to the safety of the athlete and the flow of the days event schedule.

Alpine Canada Alpin is currently working with the CSCF in the development of a SX certification program.



Ski Cross is an exciting part of ski racing and offers excellent terrain and opportunities for development, for ski cross and regular alpine athletes.

Ski Cross Coaching and Safety Module

This half day indoor module will allow coaches to take athletes into beginning ski cross terrain safely and covers some of the basics of ski cross coaching. Please contact the CSCF or Alpine Canada Alpin in order to get some more information on the safety module or opportunities to get on course practical experience.

Register

The CSCF offers a limited number of modules nationally. PSOs and clubs may offer this module locally. Check with your club or PSO for availability.

To check a CSCF schedule of these modules, go to [REGISTER - CSCF EVENTS](#).

SECTION 4 OFFICIALS

Ski Cross Officials Information and Links



Alpine Canada has assembled Programs and information for Ski Cross officials. Ski Cross officials training modules have been published to provide clear education and information for all levels for Ski Cross officials. Throughout the season Alpine Canada will identify event dates that will be combined with official's education courses.

Ski cross officials education will follow a simple pathway designed to provide the necessary knowledge to safely participate as an official at any level Ski Cross event. Each module will have both class room and practical components with a weighted safety component.

Alpine Canada Ski Cross officials will participate in and complete each level

Level 1 SX official

- Ski Cross overview, Understanding the sport
- Event structure
- Ski Cross safety

- Basic Rules

Level one will provide an understanding of the sport. Who, what, when, where and why of event structure and safety.

Level 2 SX Official

- Detailed event structure
- Knowledge of all Officials positions and experience in some of these roles
- Rules and rule book navigation
- In-depth Ski Cross safety
- Course and features

Level 2 will provide good working experience in official's positions and understanding of Ski Cross rules and safety. FIS level event experience.

Level 3 SX Official

- Major officials positions (practical)
- Jury positions (understanding and navigating the rule book)
- Course building theory and Understanding features
- Ski Cross Safety (Basis for ACA/CSX TD)
- Practical assignments (mandatory for ACA/CSX TD designation)

Level 3 will provide good experience in all Ski Cross officials' roles and a solid understanding of rules and safety at all levels of competition.

Level 4 Official

- ACA/CSX Technical Delegate designation

FIS Technical Delegate status will have to follow the FIS TD pathway as designated by FIS.

Use the attached links to find more information

Modules, Presentations and resources:

<http://alpinecanada.org/officials>

Ski Cross Rules:

<http://www.fis-ski.com/uk/disciplines/freestyle/freestyle-skiing-rules/rules.html>

http://wiki.fisski.com/index.php/International_Competition_Rules

General Ski Cross information and Guidelines:

http://wiki.fisski.com/index.php/Ski_Cross

SECTION 5 HOSTING A SKI CROSS EVENT



Goals and Objectives

The goal of this manual is to assist existing organizing committees from alpine & other snow sports clubs to become proficient in running a Ski Cross events. This guideline will empower new committees to:

- Understand the ski cross and the organizing committee structure and key communication processes that contribute to effective and successful team work.
- Perform the various roles throughout the phases of an event from course build, training and competition through tabulating and sending the final results
- Confidently prepare and maintain the field of play in accordance with recommended best practices, FIS rules and regulations and adhere to appropriate safety procedures
- Coordinate athlete services effectively and successfully to create an extraordinary experience for our Ski Cross athletes.

There are a number of stages to hosting an event, depending on the level of the event preparation may begin in the spring. All events are calendared through your provincial association, so early considerations are proactive to help your PSO create a consistent calendar.

Event Stage	Timeline
1) Calendaring & sanctioning the event a) Establishment of the Organizing Committee b) Confirm Date and Hill Space with host resort c) Establishment of the Organizing Committee	Spring
2) Promoting the Event(Race Notice)	Ongoing
3) Course Design & Build	Planning weeks/days prior
4) Registration	Early & Onsite
5) “The Field of Play” a) Course Setting b) Course Maintenance	Week of event Night before or morning of Week before event

6) Course teardown or ongoing maintenance

Following event

Calendar & Sanctioning the Event

Have the event chairman contact your provincial association by April to learn about event opportunities in their area and what will work with the schedule for the province for the upcoming year. Calendar drafts for each province are due to Alpine Canada by May 1st each season. Information on calendaring fees associated with FIS events can be received from your provincial association. There are no fees from Alpine Canada to calendar open events, national championships & NorAm's.

Sanctioning

Sanctioning is a process to ensure the organizing committee has secured the basic safety & quality standards as set by Alpine Canada & the provincial association. Through the sanctioning process we are ensuring that the organizing committee has the experience & knowledge appropriate for the level of event they wish to host. That the venue selected & course build will be safe & fun for the participant's skill level. That the organizers responsible for the direct safety of the athletes, volunteers & officials understand their roles will execute the event with the highest standards.

For club & open events course builds should be conducted under the guidance of an experienced builder or an Alpine Canada appointed "expert" as per the course build guidelines. Safety installations on course must follow the guidelines and best practices as set in this manual. FIS rule book guidelines should also be used as a reference but are not required for lower level events. For FIS events safety guidelines & requirements are as per the current seasons ICR listings. Safety of all participants is always the 1st priority when hosting events of all types. If there is any uncertainty or discrepancy about the safety of an event please consult Alpine Canada Alpin for qualified contact information.

An event agreement must be signed between the organizers, resort & provincial association/Alpine Canada in order for a proof of insurance document to be produced. Only then is the event deemed sanctioned. An Alpine Canada template can be forwarded upon request.

Insurance

For the event – once sanctioning is complete a proof of commercial general liability insurance will be forwarded to the organizers. The terms & scope of coverage information can be reviewed at <http://alpinecanada.org/cgl-insurance>.

For organizers, officials & volunteers – to access commercial general liability coverage extended to the event each must be a current member with Alpine Canada through a registered club. To register first time volunteers on site have them complete a membership registration form

http://alpinecanada.org/sites/default/files/attachments/memreg2011gc_2.pdf#overlay-context=alpine-canada-members. New comers can volunteer for their first event or series without paying a membership fee. These types of volunteers should be assigned to low risk activities.

For athletes & coaches – Canadian athletes must be current member with a registered club in the appropriate category of membership for the level of the competition. Canadian coaches must be current members with a registered club, have the appropriate level of CSCF certification for the level of athlete under their care, and be current & in good standing with CSCF. All athletes must be represented by a coach or accredited guardian who can access & are insured to enter the course. In FIS events athletes must be listed as active in the biographies section on the FIS site - <http://www.fis-ski.com/uk/competitorbiographies.html>
Forerunners can be no younger than 14 years of age & must sign an athlete declaration, Alpine Canada membership & be witnessed by a parent or guardian.

Foreign athletes & coaches – Athletes from the USA are insured by their USSA membership to participate in Alpine Canada sanctioned events with confirmation from their association. US coaches registered with USSA are insured by their USSA membership to participate in Alpine Canada sanctioned events All athletes must be represented by a coach or accredited guardian who can access & are insured to enter the course.

ESTABLISHMENT OF THE ORGANIZING COMMITTEE ORGANIZING COMMITTEE “OC” STRUCTURE

Events involve distinct groups of people that play important roles in the lead up to the event:

Group	Start Date
The Organizing Committee	Spring
The Officials	Month before the event
Volunteers	Week before
The Athletes and Coaches	Days before
The Fans	Ongoing

The Race Organizing Committee “ROC” plans and organizes the competition and management as it pertains to construction and maintenance of the course. The Officials and volunteers conduct the competition and the athletes and Coaches participate in the competition. Many of these roles will overlap between these groups of people i.e., Chief of Start [ROC] = Start Referee [Official] could be the same person. The fans aren’t just at the event they can access it online, or sometimes on television.

Appointments by the Organizer

The organizers appoint all other members of the organizing committee. The chairman (or their representative) represents the committee in public, leads the meetings and makes major decisions concerning the event in consultation with by other persons of the group. Before, during and after the competition they work closely with the provincial association, Alpine Canada and their appointed officials. They take on all other duties that are necessary for carrying out the competition

http://wiki.fissski.com/index.php/Competition_Organization

http://wiki.fissski.com/index.php/Organizing_Committee_Roles

OFFICIALS DESCRIPTIONS

Technical Delegate

- Assigned by Alpine Canada or FIS
- Responsible for applying rules of the governing organization, supervises work by competition officials, inspecting Ski Cross safety procedures and installations
- Chairman of the Race Jury

Chief of Race

- Assigned by the Organizing Committee
- Responsible for overall race operations, liaison with the host resort
- Manages work of competition officials
- Member of the Race Jury

Referee

- Assigned by FIS, Alpine Canada, TD or Club (depending the level of competition)
- Assists the Technical Delegate
- Records reports from the Chief of Gate Judges about any rule infractions or gate faults
- Records results of heats provided by finish judges
- Provides results information data/timing group, signs official results and post results to notice board
- Member of Race Jury

Chief of Course

- Assigned by Organizing Committee
- Responsible for maintaining the Ski Cross course, including the start area, installing timing system and managing course workers
- Sets the race course (i.e. gate panels) in consultation with the Course Setter/Connection Coach

Start Referee (Chief of Start)

- Responsible for managing the start area and start procedures including directing the work of the Starter and Assistant Starter

Chief of Finish (Works closely with the referee)

- Responsible for managing the finish area and directing the work of the Finish Judges

Chief of Gate Judges

- Responsible for directing the work of the Gate Judges and conveying necessary information to the Referee

Chief of Timing

- Responsible for directing the work of the Hand Timers and Time Keepers for the electronic timing system
- Responsible for setup and insuring the electronic timing systems are operating correctly

- Responsible for communicating with the Starter regarding operations of the timing system , starts and course holds
- To provide an accurate and detailed timing report to the TD
- Provide appropriate data to supply final results files to meet FIS specifications

Connection Coach/Course Setter

- Assigned at the Team Captains meeting
- Responsible for setting the course gates prior to training and competition on the Ski Cross course
- Liaison between all coaches and the Organizing Committee

Course Builder

- Assigned by the Organizing Committee
- Responsible for designing or redesigning the layout of the course in conjunction with the host venue
- Directing the construction and testing of the course (often operates the snow cat during construction)

Starter

- Responsible for the warning signals and start command
- Start recording
- Assign duties to Assistant Starter as needed

Assistant Starter

- Responsible for calling competitors according to the start order
- Also checking competitors bibs, clothing and equipment for violations before they enter the start area

Gate Judges

- To observe and report accurately whether the passage of the competitor was correct through their assigned area of observation
- To observe and report accurately infractions to the rules governing DSQ and contact
- May be responsible for course clear in their assigned area of observation

Finish judges

- Responsible for determining the finish order of the competitors
- To assist the Jury with DNF and DSQ rulings if necessary

Bib coordinator

- Responsible for preparation, assignment, distribution and collection of all bibs provided to competitors and other officials
- Keeps track of which athletes are assigned which colour bib during heats
- Works closely with the Assistant Starter

Bib Collector

- To collect numbered bibs from competitors as they leave the finish area following the qualification run.
- To collect coloured bibs from competitors at the end of each heat and coordinate their return to the start

Medical Services Coordinator/Pro Patrol

- Responsible for organizing adequate first aid and medical coverage during training periods and the actual competition
(Lower level events may have medical covered by mountain Patrol services coordinated by the organizing committee, approved by the Technical Delegate)

Other minor positions that we may find at an event would include Hand Timers, Section Chiefs and course work crew. All these positions report to the appropriate Chief official

The First Aid and Medical Services

General Medical and rescue coverage can be provided by ski patrol. Two ski patrol must be stationed at the top of the course during training and competition or anytime there are athletes in the field of play (Course).

Appropriate medical and rescue equipment must be easily accessible on course. Always discuss an action plan and have it presented to the team captains prior to the event.

Details of the Medical Support Requirements are given in Chapter 1 of the FIS Medical Guide (containing the Medical Rules and Guidelines).

<http://www.fis-ski.com/uk/medical/medical.html>

Promoting the Event

Once your event has been sanctioned & your dates are confirmed there are support networks to promote your event within the community. You want to promote your event to volunteers, officials & athletes. There are a few basic pieces to promoting events that are required but get creative & use any network at your disposal to promote your events.

Athletes, Coaches & Parents

An event notice must be created to compile all the key pieces of information for this group. Examples can be found on the ACA & PSO websites. Race notices are recommended for all events & required for FIS events. A race notice includes key information for athletes, coaches & parents. The notice should include registration options, requirements, times, & locations. Race entry fees, lift ticket costs, pick up locations, accepted passes & payment methods must be declared. Event start times, team captains meetings, and ROC contact information should be listed. This is also an opportunity to promote special rates being extended to the event for lodging, car rentals and alike.

Using Technology

For events using timing & data software, live timing can be used to give real time results to the fans extending the reach of your event beyond the finish area. Live timing is required for NorAm & National Championship events.

Registration

Depending on the level of your event there are different requirements for registration. Review the membership requirements outlined earlier in the manual for your level of event.

Registration of competitors & support for the event should be managed by separate people wherever possible. It is important to offer preregistration for volunteers & athletes. Once participants are registered there are few key pieces to check for each before the start of the event on site check in.

Volunteers & Officials

Alpine Canada events are promoted on the Alpine Canada site & online registration is available. Contact your PSO to get information on online sign up for provincial events.

When dealing with preregistered volunteers & officials you need to confirm they are current members of a registered club. If they are not have them complete a Alpine Canada membership registration form before the start of their duties. If they are filling an officials role or one of higher risk have them complete their registration with a registered club prior to the event and pay the appropriate membership fees for the season. If this participant is not a member & will only be participating in this one event they may be signed up on site as a one time volunteer & no membership fees need to be taken.

Athletes

Nonmembers for open events

Non-members may register in up to 2 ACA sanctioned open events without purchasing an ACA club membership. These participants will pay for their insurance coverage for the day as part of their event registration fee. If these non-members can provide proof of registration in another Canadian Snowsports Disciplines (I.e: Canadian Freestyle Ski Association or Canada Snowboard) they insurance fee may be waived. All non-members must complete an open event waiver at each event. At each event a master list of participants attending their 3rd ACA sanctioned open event will be supplied to verify proper policies are being applied.

Members for open events

Members can enter into unlimited ACA sanctioned open events. Registration can be done prior to the event by the club as per the race notice instructions. Members may also register on site. No insurance fees need to be taken and waivers have already been completed with their club membership.

FIS Events

FIS events are limited to FIS licensed athletes. FIS licenses can be purchased from your local club and must be done at minimum 5 days before the event. Registration in the event must be received from the club, PSO to the race administrator prior to the event as per the ICR & race notice requirements. For each registered athlete the race administrator must verify that the information supplied on each athlete is accurate. You can verify each participant by going to the biographies section of the

FIS website. If any registered athlete can not be found on line, or is listed as inactive contact the athlete, club or PSO to have the athlete instructed to complete their registration with FIS prior to the event. If the athlete is not listed as active and you allow them to complete you are risking the insurance for the event, that athlete & the validity of the results.

Must Verify

Proper spelling of athlete's name
 FIS code numbers
 Birth year
 FIS points
 Active status



The Field of Play

The next step in hosting an event is the preparation of the field of play, course & the event day elements. There are tasks for all members of the organizing committee the week before, a few days out, morning of & day of the event. Ensuring all the elements needed to execute & manage any challenges on the day of the event all comes down to being prepared before your event starts.

Task	When	by Who?
Coordinate volunteers leads/volunteer coordinator	Weeks before	Crew/Chief
Verify registrations	Week before	Race Administrator
Placing participants into the field	upon registration	Race Administrator
Team Captains meeting	24hrs before event	Organizing Committee & TD
Onsite registration	Morning of	Race Administrator

Sample Single Day Competition Day Schedule

Start Finish	Duration	Event
6:30 AM- 7:00 AM	0:30	Officials meeting/ Day overview
7:00 AM- 7:30 AM	0:30	Early lift for officials and course setters
7:30 AM - 8:00 AM	0:30	Qualifications Inspection
8:15 AM - 9:15 AM	0:60	Qualifications Training
9:30 AM - 10:00 AM	0:30	Ladies' Qualification Round
10:15 AM - 11:00 AM	0:45	Men's Qualifications Round
11:30 AM - 12:00 PM	0:30	Ladies' and Men's Inspection
12:15 PM - 12:45 PM	0:30	Ladies' and Men's Training
1:00 PM - 2:45 PM	1:45	Ladies' and Men's Finals

START OF THE DAY

Officials meet at the bottom of lift

Officials inspect the course

WHO? - Jury Members, Course Setter, Chief of Course, course workers

WHY? - Assess snow conditions, check timing systems, set course, check safety

Determine locations for gate keepers, course maintenance workers and coaches

Conduct course maintenance

paint all features and skiers' line of travel

smooth out start area & features

side slip course as required

check starting gate - make sure it works!

check timing system

MAKE SURE THE COURSE IS SAFE FOR EVERYONE BEFORE INSPECTION STARTS!

The Draw & Determining the Start Order

Team captains meetings are not required before an open event to determine the start order. However a captains meeting is recommended to announce event information. For FIS events a team captains meeting as per the instructions in the ICR is required 24hrs prior to the event. The team captains meeting will announce the program for the event, format of the event, draw of competitors to determine the start order of the qualification round.

Open events – start order for qualification rounds are determined at random. Start order for heat rounds are determined by rank from qualifications or by groupings that will offer the most balanced start to the event based on registration. The ladder sheets for open events list rank orders to follow when building your heats.

FIS events – The start order for qualification rounds varies depending on the category of FIS event you are hosting. Be sure to refer to the proper rule book. Start order for FIS category events can be found at in section 4505.3. Rank from the qualification round determines how athletes are placed into heats for the finals.

The Start Area

The [Start Area](#) must be closed off to everyone except the starting competitor, accompanied by only one trainer and the [Start Officials](#). A special roped off corral or

staging area must be provided for trainers, Team Captains, service personnel, etc., in which they may take care of the waiting competitors without being interrupted by the public or interfere with the start. A [tent](#) or a warming hut may be provided at the [start area](#). If the temperature is expected to be below -10° Celsius, a [heater](#) may be installed in the tent or the warming hut.

The [Start](#) shall be prepared in such a way that the competitors can stand relaxed in the starting area. The [Ski Cross](#) Start uses a start device, see [4507.8](#) for a description. The starting installation will be located where the competitors have easy access to their skiing line and can quickly reach full speed after leaving the start device. This consideration is addressed at the course building stage, pre event. http://wiki.fisiski.com/index.php/Ski_Cross_Start_Gate_Standards

Timing System

- Must be hard wired for FIS events and recommended for Open events)
- Start Clock included for start intervals
- Wand at Start or Light Beam
- Photocells at Finish
- Hardwire communication from start to finish via headset
- Proper padding of photocells at finish line
- USED ONLY DURING TIME TRIALS.

Qualification Start will preferably be a single lane with an open gate that uses a [light beam](#) installed approx. 1.5 - 2.0 meters down across the hill parallel to the [starting line](#). The starting line and the [light beam](#) will be as wide as the [control gates](#) on top of the course are set. There will be a [starting line](#) or a Wand attached securely to the start gate. The competitor should plant his poles in front of the line and his [boots](#) should stay behind until the [starting signal](#) is given. The starting installation will be located where the competitor has easy access to his skiing line and can quickly reach full speed after leaving the start. A wand can also be used at the start when a light beam is unavailable. The start line will be directly below the Wand

COURSE INSPECTION

- Inspection is a mandatory for all athletes
- Entry to the course prior to inspection is controlled by the Technical Delegate
- All gate keepers, timers, course workers must be in place on the course before the start of inspection
- All athletes must participate in course inspection while wearing their bibs & helmets
- Minimum of 15 minutes

Athletes are permitted to slowly side slip alongside or through the course
At the end of inspection the Jury members must clear the course of athletes from top to bottom

TRAINING

Training is mandatory for all athletes and should be a minimum of 1 hour.

BEFORE TRAINING BEGINS

- Ensure Patrol / Medical team is in place on course.
The course is closed to all skier traffic.
Course is cleared via radio communication initiated by the Chief of Race and the Chief of Gate Judges
Course is cleared from bottom to top via radio communication, starting with Finish Referee and ending Start Referee.
NO MOVEMENT ALLOWED ON COURSE
Athletes must wear full race equipment (bibs, helmets, etc)
Clear communication between officials along the entire length of the course is mandatory
Jury members should be placed along the length of course with good line of sight
Train in blocks – Women / Men
Officials may change course set as a result of training
1st training session, skiers will train in “sections”, including starts
YELLOW FLAGS must used in training
If an accident or crash occurs:
“STOP START skier down Section 5”
Gate Judges in sections higher up the course and including “Section 5” wave a **YELLOW FLAG** to stop skiers on course above the accident (reference Ski Cross officials materials for detailed radio protocol on course)
Skiers below the accident may continue to end of course
If multiple stops, officials may extend training
BEFORE TRAINING STARTS AGAIN, COURSE MUST CLEARED VIA RADIO FROM FINISH TO START

QUALIFICATIONS – TIME TRIALS

- Single Timed Run
One Athlete on course at a time
Set intervals between starts - 30 seconds; multiple skiers on course at the same time if timing allows
Every skiers starts from same gate position or where timing wand is installed



If 2 athletes tied with same time the athlete that started later in the day is ranked higher (FS ICR 4505.4.2)

Results posted on Notice Board in Start & Finish Areas
Determines seeding for Finals (e.g. Knock Out format)



FINALS

Single “Knock Out” Format

No timing system required

Organized into 8, 16 or 32 athletes

Heats run 4 skiers at a time

Top 2 skiers from each heat advance

Training before finals for athletes that qualify only, usually 2 runs

If on separate day, inspection and training are required prior to the start of competition

FINALS FLOW CHART

See Ladders on the ACA website at: <http://alpinecanada.org/officials>

START PROCEDURES

Skiers seeded & assigned to heats according to time trial results

Start lane choice during each heat based only on the skier’s qualification results.
Fastest qualifier in the heat can chose his/her lane; 2nd fastest qualifier chooses lanes next.

Fastest Qualifiers in each heat assigned specific Bib Colour

RGBY: Red = fastest, Green = 2nd fastest, Blue = 3rd fastest, Yellow = 4th fastest.

Lane Choice by fastest qualifiers.

Bib Coordinator distributes bibs in the Athlete Warm Up area in the Start prior to the start of each heat.

Start Command (from Starter):

“We are ready for the next Heat, Proceed to the start gate”

“Enter the Start Gate” (30 seconds before start command)

“Skier’s Ready”, then “Attention!” follow by the Starter opening the gate

Once Heat is on-course, Start Referee communicates, “Heat Number X is on course”.

FINALS - ON COURSE

Gate Judges:

Observe each race and record missed gates and rule infractions in writing

Record by bib color

Report to Chief of Gate Judges immediately

Chief of Gate Judges reports infractions to Referee

Infractions must be reported and resolved prior to the start of the next heat

The Referee is located in the Finish Area

Yellow flags in competition are used ONLY in rare situations to prevent injury.

Note that the use of a yellow flag may result in a re-run as determined by The Jury.

FINALS - FINISH LINE

3 Finish Judges placed at finish line

Each Finish Judge assigned 1st, 2nd or 3rd place

Record finish by Bib Color

The Referee: Confirms finish with Finish Judges and records finish position by bib color, Assesses on-course infractions with Chief of Gate Judges and communicates directly with TD if video review needs to be used

Before moving to the next Heat , the Jury must decide on any protests

Referee must:

Confirm results from the current Heat before starting the next Heat

Communicate to the Start, "WE ARE READY FOR THE NEXT HEAT"

FINISH - DETERMINING RESULTS

Skiers 1 - 4 ranked according to their finish in the final heat

Skiers 5 - 8 ranked according to their finish in the consolation final heat

All remaining skiers ranked:

According to 'round they go out', placing in that round and qualification time.

Reference FS ICR 4510.

EQUIPMENT GUIDELINES

Event Equipment

Start gate

Numbered Bibs

Coloured Bibs

Gates

Panels

Long Poles (non hinged)

Stubby or Short Poles

Timing Equipment (where necessary pending on event)

B-Net and safety installations where required on course

Rakes and Shovels

Dye Packs



Warming Tent (optional)

Helmets

FIS referral

The National Ski Associations shall require their athletes to use helmets which conform to recognized and appropriate standards including CEE 1077 or US 2040, ASTM F2040, etc. (FIS Congress, Cape Town, May, 2008)

Rule 4511.3 (Ski Cross specific)

The competitors are required to wear helmets. Full face helmets are recommended for all inspection, training, timed trials and competition.

FURTHER REFERENCE

FIS Freestyle International Competition Rules “ICR”

FIS Wiki Site

This is an online resource that the senior FIS Freestyle

For a complete listing of the rules of Ski Cross see the:

FIS Wiki <http://wiki.fis-ski.com>

FIS ICR http://wiki.fis-ski.com/index.php/International_Competition_Rules

SECTION 5 COURSE BUILDING GUIDELINES



Overview

Alpine Canada’s goal and mission is to provide host clubs and resorts the tools to execute Ski Cross events successfully and safely. This includes training each host club or resort in course build best practices and event execution. These guidelines are ‘Best Practices’ when building a Ski Cross course. It is still recommended to consult with a Course Builder/Designer before starting your construction phase to ensure your site and design are appropriate for the level of competition you will be hosting and/ or the level of Skiers that will be using the course.

Furthermore, Alpine Canada will be providing hands on assistance through the national event director to help execute events while training the local organizing committees and resort build staff.

Canadian Course Rating

Alpine Canada has developed a series of course levels specific to event types to help ensure development of the sport and ensure the safest environment possible for the participants.



Canadian and Provincial Ski Cross Series/ Development Events

Ski Cross style start, bank turns, large and small rollers combined with GS style turns. Focus is on racing within traffic and learning the basic elements of ski cross while experiencing some general ski cross terrain. Courses can be built by resort staff with some direction from experienced Ski Cross coaches or Staff. Coaches must have CSCF EL certified certification and the Alpine Canada Coaching and Safety module. **SMALL** level courses are intended for the Gliding Start through Learn to Train phases of the LTSD.

Canadian Ski Cross Series Events / Nor-Am (detuned)



Ski Cross style start, bank turns, large and small rollers, and introduction of technical features and small air features. Focus is on racing within traffic and learning the basic elements of ski cross while experiencing some general ski cross features, terrain and some low level air time. Courses can be built by resort staff, it is recommended to consult an experienced Ski Cross course Designer/Builder. Coaches must have CSCF EL certified certification and the Alpine Canada Coaching and Safety module. **MEDIUM** level courses are intended for the Learn to Train through Learn to Race phases of the LTSD.

Nor-Am / Europa / World Events



Full use of terrain and features found in a Nor-Am or World Cup level but in a toned down version. Course needs to be built by an experienced Ski-Cross course builder and meet all FIS safety regulations. **LARGE** level courses are intended for the Learn to Race through Train to Race phases of the LTSD

World Cup / Olympic Events/ XGames or Specialty Events



Full World Cup and Olympic level courses built by an experienced Ski-Cross course builder and meet all FIS Safety regulations. Other unsanctioned event courses are built with no specific guidelines and built for specialty events. **EXTRA LARGE** level courses are intended for the Train to Race through Train to Win phases of the LTSD

Rules and Recommendations Surrounding Course Building Best Practices

Currently there is no homologation for Ski Cross courses built for FIS sanctioned races. It is the responsibility of the Chief of Course and the Course Builder/designer and Technical Delegate to ensure that the course and its features are safe for the competitor's level of skiing.

When building a course for FIS Sanctioned Ski Cross, part of your goal must be to maintain good flow and speed control with a focus on smooth takeoff and landing based on the length, trajectory and height of the features.

FIS Hill Requirements

- 650 to 1200 meters long, depending event level <WC
- 130 to 250 meters vertical drop
- 30 meter course width minimum, 40-50 meters is recommended where at all possible

- Slope average of 15 degrees, ideally 12-22 degrees of varied terrain
- Race lane width can be no less than 5 meters wide and should safely accommodate 4 skiers
- A Drop down Start Gate is used; refer to FIS specifications FS ICR 4507.8.3
- Course is a series of 'features and direction changes'
- 50% turns of varying size, radius and speeds between the features
- 25% straight running, traversing and absorption, bumps and rollers
- 25% in the air or airtime off of different air features
- The Start stretch should be no less than 60 meters to the first corner/turn
- The first turn/direction change must be no less than 100 degrees
- Also see FS ICR Sec 4501.0

General Characteristics

- Course design should follow the flow of the ski hill & incorporate as many different features as the course builder desires
- Avoid blind take offs and landings on features
- Combine turns with features to control speed
- Separate skiers as quickly as possible after the start with multiple features before the first turn
- Use of 3-5 rollers of different sizes or other features immediately after the start, placed in straight line, these features should be designed so skiers can gain speed without using poles
- Minimum 60m to 1st turn, longer is better as long as it does not promote constant unsafe acceleration. The start should NOT be built on a steep slope.
- Arc of the first turn should be no less than 100 degrees in change of direction
- The first turn is the largest on course to accommodate all skiers entering at the same time
- Link each section with direction changes. These direction changes can be a flat or banked turns
- Last feature prior to finish line should be directly in line with finish (i.e. no turns, skiers should be on a flat ski before the finish line)
- Flat level race lane prior to Finish Line to ensure skiers are on the snow when timing is used
- Finish line must be at least 8m wide and marked clearly
- Technical installations must be safely protected
- Finish area must be a safe length to allow skiers to stop from full speed. The width must accommodate 4 skiers stopping at the same time. A minimum of 15 meters wide is recommended. Flat and completely fenced in.

When Building

There are no official guidelines for non FIS level courses; however FIS recommendations for length, pitch, width and size are good best practices to review when choosing a site for your course. Difficulty of features should be scaled appropriately for the level of skiers who will be using it. When building a SMALL course your focus should be to promote dynamic movement, line choice, with as many features as possible in a fun and safe environment that allows all four competitors to successfully finish the course. Simple guidelines may be implemented during your construction process so you keep to your intended target.

Insure that a Cat /Groomer can groom the course (race lane) from top to bottom easily with the tiller down. This includes all features on the course. Your goal will be to groom your course (race lane) top to bottom in 2-3 passes.

Use your terrain to control speed. When you speed up the skier you must slow them down with features.(rollers, direction changes, Berms etc)

Build your course from top to bottom in sections. With a capable skier, test each section for speed, flow and safety before moving on to the next. Overlap your testing from one section to another, ensure sections flow together in a safe controlled manner.

When testing sections during your build process insure you can let your skis glide without breaking before your features. A skier should be able to maintain a good balanced body position over their skis throughout the whole course.

The features and order of the features chosen should be designed so that the skiers are attempting to gain speed and not having to break before each one.

See SMALL course feature guide for recommended features and designs



Follow the same simple guidelines suggested for building a small course. A MEDIUM course should also promote dynamic movement. The introduction of small air features at this level will promote the unweighting of the body and some long, low trajectory flight. The dynamic motion can also be amplified by increasing the size of smaller features like rollers, single or in combinations.

When adding small air features ensure both the takeoff and landings are level allowing the skier to maintain a flat ski. All jumps must be proportional to the landings. A skier must land on the top half of the landing when gliding off the feature. Use an experienced Skier in the testing phase to calculate your jump angles. Keep all trajectories low without kick or rapid upward motions.

See MEDIUM course feature guide for recommended features and designs



A LARGE Ski Cross course is usually built from scratch for a specific competition. It is also possible to add features or alter a lower level course to bring it up to a higher level for competition. This level of course should be built under the recommendations, design and supervision of a course Builder/Designer. It will also be subject to inspection by qualified competition officials prior to the competition day. Consulting or hiring a Builder/Designer will ensure there are no unnecessary changes needed at the last minute prior to competition. This level of course needs close attention paid to every aspect as feature size as the speed is increased dramatically over lower level courses.

A LARGE course is not for public use.



Full World Cup and Olympic level courses are built by an experienced Ski-Cross course builder and meet all FIS

Safety regulations. Specialty courses are designed and built by private contractors or event companies for specialty events and have no guidelines, they also hold different insurance considerations.

An EXTRA LARGE course is not for public use.



Gates and Poles

A [Ski Cross](#) gate consists of a [triangular gate panel](#) attached to one non-breakaway non-hinged, static or fixed base, outside pole and on the inside or turning side a hinged, or breakaway, 45 cm long rubber stubby pole ([turning pole](#)).

Triangular gates must be used in Ski Cross. The size of the gate is: Base Long side Short side 130cm 110cm 40cm. The [turning pole](#) must be a rubber stubby pole (45 cm long)



Safety Net and Installations

Insure all spill zones and dangerous areas are netted correctly according to the manufactures instructions of the product used.

B-net is best used in all cases. All Banked corners must be lined with B-net on the top from entrance to exit. Place net at least 50cm back from the edge of the bank, slightly angled inwards toward the race lane. B-net on burms must be pulled tight.

Use Crash padding for additional protection where applicable.



More information on courses, features and explanations can be found on the FIS wiki site at http://wiki.fis-ski.com/index.php/Ski_Cross_Courses





SMALL COURSE FEATURES

Single Roller



Double Rollers



Multiple Rollers



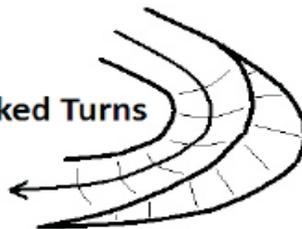
Changing the size and amplitude of rollers is a good way to vary terrain.

i.e. Small ,big

Small, big ,small

Small ,small, big

Bank or Banked Turns



Bank turns are great direction changes that control speed using different gate set.

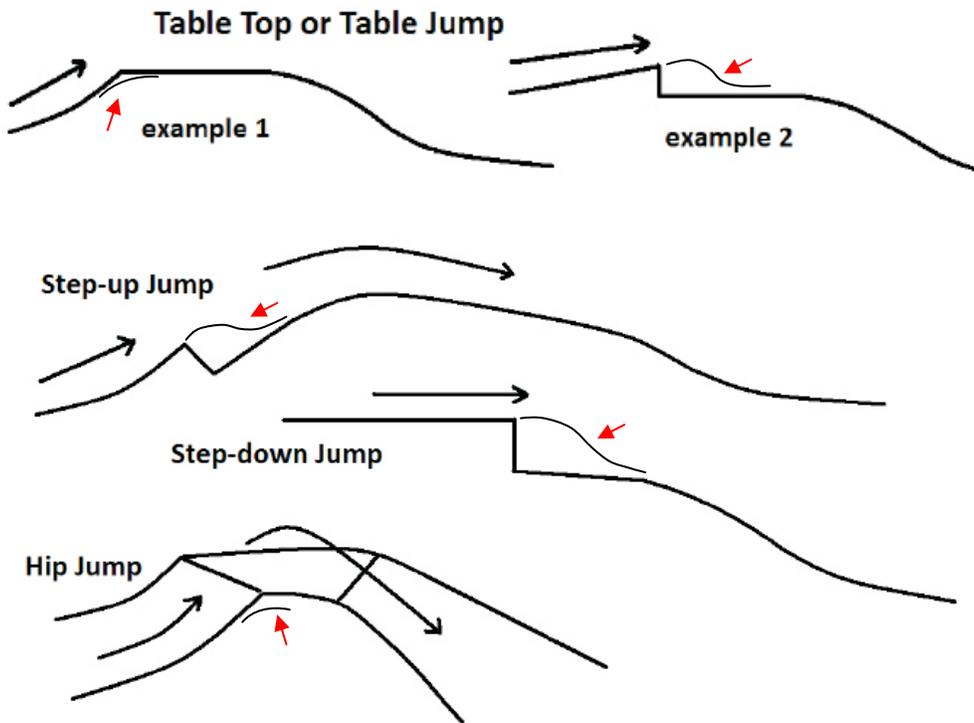
"Basketball"
or Fall-away Bank Turn



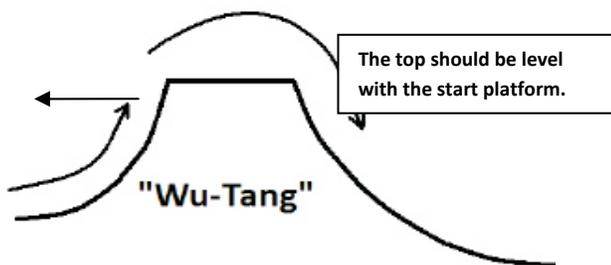
Fall away turns are challenging for all levels of skiers. It is the opposite dynamic from the bank turn. Ensure it is not too steep and there is a large spill zone below it for those that don't hold a strong edge. Add safety netting below if needed.



MEDIUM COURSE FEATURES



Air or Jump features will vary in size according to the speed of the skier in the area they are placed. It is important to size appropriately. It is recommended to **roll** off the sharp edges and take offs so a skier has the option to absorb or ski over the feature without leaving the ground.



As a start feature the Wu-Tang is designed to separate skiers in the start stretch. The top of this feature should match the level of the start gate base forming a small Half Pipe effect. Skiers should almost stop as they travel over the feature. It is possible to link two Wu-Tangs together followed by Rollers for the start stretch before the first corner. This feature also lets skiers glide without skating or poling at the start.

SECTION 7 CONCLUSIONS

Alpine Canada has the vision to include the exciting discipline of Ski Cross into every level of alpine club programming in Canada. It is realized that the skills developed through racing head-to-head in ski cross terrain can only be beneficial to increasing the athletic abilities of a strong alpine ski racing program. Many of the benefits derived through ski cross type training and racing include:

- Competitive drive – mass start
- Air awareness/body positioning
- Fore/aft balance through undulating terrain
- Ability to generate speed through terrain features
- Pressuring skis in various angles/trajectories
- FUN



It is also fully recognized in order to become a world class competitor in ski cross an individual athlete must possess a strong technical background in the classic alpine disciplines. Ski cross should serve as a tool to enhance skiing ability and not be viewed as a specialized discipline/sport of its own until the early years of FIS racing.



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