

**Guide for OPS
Radio Operators
for the Canadian Ski Marathon 2019**

Version 3

**Guide for OPS Radio Operators
for the Canadian Ski Marathon 2019-Version-3**

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Purpose

This document is a guide to radio communications activities for the Canadian Ski Marathon (CSM). Primary communications for the CSM will use commercial digital radios. Two meter ham radio will be used for backup in case of problems with the commercial units.

CSM Overview

The CSM is a two-day cross-country ski event along a wilderness trail that has been run since 1967. It originally ran from Montreal to Ottawa. For many years, it ran between Lachute and Buckingham in Quebec, a distance of approximately 160 kilometres, usually the second weekend in February. The direction of travel alternated each year. In 2018 the route was changed to start near Mont Tremblant and travel south to Montebello and then carry on to Lachute.

Approximately 1500 skiers are expected to participate in 2019. The participants are divided into two large categories: *Coureurs des Bois*, and *Tourers*. The need for volunteers is great. In past years, there have been up to 600 volunteers helping to run the event.

Amateur radio was used for communications by the CSM from 1973 to 2017. There is a requirement for communications between various mobile units and the checkpoints (CPs). Some of the CPs are in remote locations where radio communications is the only viable option. Radio operators are located at each CP, in vehicles with designated CSM staff, and at the net control location.

The radio operators are present to ensure communications with the CSM administrative and operations networks. They are in continuous contact with net control, other CPs, and the various operations vehicles.

Radio Changes for 2019

The CSM will use commercial digital radios for health&safety and for logistics (OPS) traffic. Health&safety services will be provided by a commercial supplier (Groupe Montagne Explore) and they will have their own net on a different channel from OPS traffic. OPS traffic includes checkpoints, ADMIN-1, ADMIN-2, propane trucks, water trucks, transport vans, road crossing crew, chip team, and Gold Camp.

However, the CSM still needs the skills and knowledge of ham operators to run a controlled net on the commercial rigs for OPS traffic. Where equipment or environmental factors make the commercial rigs impossible to use, 2M ham radio will be used as a backup.

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The commercial radios must be used for all “official” CSM traffic. If you are working at a checkpoint, you should test your ham backup radio with a local repeater before the checkpoint is active. Just remember that there is no formal net or agreement for the CSM to use local repeaters.

Because the CSM is using commercial radios, you do not need to be a licensed ham to operate them. However, it would be best if you were experienced in working on a controlled net (military, police, etc.)

Radio Assignments

Radio operators will be assigned to each CP, in vehicles with designated CSM staff (such as Admin-2), and at the net control location in Notre-Dame-de-Bonsecours.

Many of the OPS vehicles will be equipped with radios but may NOT have dedicated radio operators.

The organizer for radio operations, in consultation with CSM staff, assigns personnel to the required areas. The assignments may change based on available personnel and the trail and weather conditions. Be prepared to work or be reassigned to any position.

At fixed locations, such as CPs, the radio operator should arrive with or before the other staff. The CP cube vans transport the commercial radio equipment to and from the CP.

Operators assigned to mobiles with CSM staff (such as Admin-2) should contact the staff they are assigned to well in advance of the event. They often meet with their assigned staff and assigned vehicle on Friday evening in Papineauville at the high school. These operators sleep in locations assigned by their “boss” and eat with them. Contact your “boss” before the event so you are not surprised.

Directions and Maps

The operator’s website (see Reference below) contains:

-) Directions to the dormitories, CPs, and other locations
-) CP site layout diagrams
-) Maps of the entire trail route
-) Other useful information

Contact the organizer of radio operations if you have any questions.

Equipment

Use the packing list below as a guideline.

Contact the organizer for radio operations if you have any questions or concerns regarding the packing list.

Checkpoint/Net Control/Mobile Required Equipment
- Radio - 50 or 30 watt commercial rig supplied by CTM
- Cigar lighter power outlet to power radio (Keep the vehicle running when transmitting!!)
- Omni antenna supplied by CTM
- Paper/notebook
- Pencils (pens can freeze)
Checkpoint/Net Control/Mobile BACKUP Equipment
- Ham Radio - 50 watt with CTCSS (e.g., mobile, HT w/ amplifier)
- Scanner or equivalent to monitor simplex frequencies
- 5/8 Wave Antenna or equivalent (or better)
Suggested Additional Equipment for Checkpoint/Net Control/Mobile
- Handheld for Intra-site communications
- Radio user manuals or "crib" sheet for radios (Reference to change/add frequencies, adjust squelch, scan function, etc.)
- FRS type radio - useful for communications with CP captain
- Flashlight(s)
- Batteries, alternate power source
- Clothes appropriate to where you are working
- Snacks, Fluids
- List of radio operators and their assignments (and responsibilities)
Other Equipment (for the weekend)
- Bedding and toiletries (including sleeping bag, alarm clock, mattress, and towel) where appropriate

Radio Frequencies

Commercial Net Frequencies

The commercial rigs will be pre-programmed by CTM for the required frequency.

Ham Frequencies

There is NO NET on the ham bands and NO CSM TRAFFIC should be passed on the ham bands. Of course, in cases of emergency, you should use whatever method you can to pass your traffic.

While enroute to and from the checkpoint or in the event that you cannot make the commercial radio function, consider using one of the repeaters below. If you can access your ham radio gear while operating the commercial radio, keep a watch on the amateur frequencies. You may be asked to relay traffic to net control or you may hear a request for the commercial radio tech to attend a location to fix a problem.

Net control will set up equipment to monitor the ham repeaters as back up.

For Saturday (Mont Tremblant to Montebello) you could use:

VE2RBH, 145.41, neg offset, CTCSS 123.0

or

VE2CRA, 146.94, neg offset, CTCSS 100.0

For Sunday (Montebello to Lachute) you could use:

VE2RM, 147.00, neg offset, CTCSS 103.5

Simplex Frequencies

Within a checkpoint, you can probably use FRS radios (the CP staff often have FRS radios), but the suggested ham simplex frequency is 147.57.

Checkpoint Locations

Directions to the CP locations are available from the radio operator's website (see References below) as are CP layout diagrams.

Radio Checkpoint Functions

Radio personnel for a checkpoint should arrive on site shortly before or with the CP crew and they must stay until they have clearance to leave from Admin-2.

- CP staff are responsible for erecting and dismantling the two (2) commercial antennas and masts (if needed). Antennas are to be mounted on or beside the cube van and securely fastened to it.
- The radio operator should check that the antenna ground plane radials are not damaged BEFORE it is placed on top of the mast.

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- The radio operator should install the radio in their own vehicle (if close enough to the antenna) or allow the CP staff to install it in the cube van. The location is determined by the CP captain.
- The radio operator should confirm solid communications with net control as soon as possible.
- The radio operator should inform net control as soon as the checkpoint is operational (check with CP captain).
- The radio operator is responsible for passing requests from the CP captain to various CSM staff.
- The radio operator is responsible for passing information and requests from various CSM staff to the CP captain.
- The radio operator should record statistical information required as per the form provided.
- Note that skier check-ins and check-outs will be recorded and reported automatically by a skier “chip” system. **This is new for 2019.** There will be a publicly accessible website at <https://zone4.ca/event/2019CSM/> that will record all of the ins and outs in real time.
- The radio operator should return any forms to the CP captain when the CP closes.

General Radio Checkpoint Procedures for Saturday and Sunday

Items to Remember for the day

- Net control is always in charge. Let them control the flow of traffic.
- Although Safety has its own net and radio channel, they may need to use the “OPS” net during an emergency. Safety traffic ALWAYS has priority. Net control will ask you to stand by during an on-going safety incident.
- NEVER identify a skier by name. Always use a bib number.
- Note time when messages received, from whom, for whom, and if further action is required.
- Note time when messages sent, from whom, for whom, and if further action is required.
- Inform net control when CSM staff without radios (or who are unable to use their radios) have arrived on site or are leaving site (such as OPS or Propane). Listen for net requests to locate personnel, and advise both the personnel concerned and the net if they show up at your checkpoint.

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Items to AVOID reporting or requesting

- NEVER identify a skier by name. Always use a bib number.
- You may get questions from skiers about lost luggage or equipment. Any misplaced items are taken to the CSM lost and found (ask your CP captain where that is.) Refer the skier to the CP captain if the skier demands more information.
- Skiers may ask you about the location of another skier (“Did my spouse go through CP4?”). Refer them to the publicly available web site at <https://zone4.ca/event/2019CSM/> that tracks all of the skiers. HOWEVER, ALWAYS refer questions about lost children (16 years or younger) or injured skiers to Safety at your CP.

Sequence of Events to Remember:

Start-up Events

- Get information package from CP captain; meet other CP personnel as required.
- Confirm with CP captain where any extra vehicles should be parked if they are not going to be used as part of the radio station(s) through the day.
- Ensure you have completed the waiver(s) in the information package.
- Double check the antenna radials.
- Introduce yourself to the Safety team.
- Inform net control when you are ready to receive traffic.
- Inform net control when CP is ready to accept skiers (info from CP captain).
- Confirm with CP captain – all teams present (waxing teams, safety present).

Day Events

- Note time of first skier's arrival. (May not be required if chip data is available.)
- Note time of first skier's departure. (May not be required if chip data is available.)
- Inform net control when CP closed to outgoing skiers and note the time.
- Safety related traffic (sweeps, patrols, injuries, etc.) is the responsibility of safety staff.
 - Pass any traffic requested by safety personnel.
 - If more convenient or efficient, turn over control of the radio to safety personnel.

Shutdown Events

- Contact Admin-2 for authorization to release CP staff.

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- o Because the CP staff need to pack up the radio equipment in the cube van, you will effectively be off the commercial net as soon as the CP is released.
- o Use your 2M rig to inform net control when ALL of the CP staff have left (yes, you are last – make sure you are not stuck in the snow before the CP team leaves).
- o Ask net control if you are needed anywhere else after your current assignment finishes.

Radio/Net Procedures

The procedures listed below are guidelines. Contact the organizer for radio operations if you have any questions regarding radio/net procedures.

1. Use tactical callsigns. Tactical callsigns identify a functional unit or a location for this event. For example, “checkpoint seven” (not "See Pee Seven") is the tactical callsign for the operators working at CP7; “admin two” is the tactical callsign of the operator working with the CSM person(s) designated as "Admin two". Since this is a commercial net, you do not need to identify in any manner other than your tactical call sign.
2. Do not use Q codes or 10- codes. Not everyone is conversant with them.
3. Keep your communications short and concise.
4. Use traffic modifiers *when the net is busy*. This helps the net flow much smoother and allows all traffic to get through. Traffic modifiers for the CSM are **ROUTINE**, **PRIORITY**, **URGENT**. Suffix your call to net control with the modifier (e.g., Net control this is Admin 2 for looking for Checkpoint 10, urgent)
 - **ROUTINE** indicates the traffic has no particular importance or urgency.
 - **PRIORITY** indicates the traffic is time critical.
 - **URGENT** indicates the traffic is time critical and important.

Confirm with the organizer for radio operations how net control will be handled (e.g., everything through net control or net control acts a monitor and intervenes where appropriate). The latter will usually only happen when there is a longer exchange between two stations, or early (pre 05:00) in the morning.

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An example call sequence: (CPx is **bold** and net control is *italic*)

CP3: “**Net control from checkpoint three looking for checkpoint four, routine**”

NC: “*Checkpoint four, please call checkpoint three*”

CP4: “**Checkpoint three this is checkpoint four**”

(exchange occurs between CP3 and CP4)

CP3: “**Checkpoint three clear, back to net**”

NOTE: The commercial repeater **does not have** a courtesy tone, so you should say “Over” at the end of each transmission.

Net Control Location

All radio communications go through net control during the CSM. Net control will be located in the offices of the Municipality of Notre-Dame-de-Bonsecours, which is close to Montebello. Net control equipment will be set up Friday afternoon, February 8th.

Net Control Functions

- Net control personnel should keep a log of their communications and of checkpoint statistics.
- Net control must record all information provided from CP radio operators and be ready to relay it to Admin-2 on request.

Net control should be the network's memory. Therefore they should ideally record everything that happens on the net, such as “admin x is off the net / back on the net/ looking for ...” Any traffic that gets passed should be recorded and time stamped.

Who to Ask About...

Role or Responsibility	Examples
Safety-1	<ul style="list-style-type: none">• Safety teams at CPs and mobile• Injuries/frostbite/blisters/hypothermia• Missing child• Sweeps, patrols, skidoos• Trail hazards (open water, etc.)

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Admin-2 – checkpoint matters	<ul style="list-style-type: none"> • Missing or malfunctioning checkpoint equipment • Water/food/supplies running out • Buses required at CP • Waxing team has not arrived • Releasing checkpoint team
Admin-1 – Event Director	<ul style="list-style-type: none"> • Most items not covered by Admin 2
CTM technician - mobile during the event	<ul style="list-style-type: none"> • Any commercial radio problems or questions.

Use the above list as a guideline. If you are not sure, contact net control.

Accommodations

If you need accommodations for the weekend, contact the organizer of radio operations. The organizer will let you know where you will be billeted for one or two nights. Note that accommodations are provided only for operators whose duties require them to be on site late one day, and the next day as well, precluding the possibility of both a long drive and a full night’s sleep.

Most radio operators will stay in the Papineauville high school dorm, where many skiers stay. Check in at the front desk. Be prepared to sleep on the floor and to provide your own bedding and toiletries (including sleeping bag, alarm clock, mattress, and towel).

If you are working at CP11 or CP10, you will be staying at the Polyvalent Curé-Mercure Mont Tremblant Gold dorm **on Friday night ONLY**. Check in at the front desk. Be prepared to sleep on the floor and to provide your own bedding and toiletries (including sleeping bag, alarm clock, mattress, and towel).

Net controllers will stay in the offices of the Municipality of Notre-Dame-de-Bonsecours. The facility has showers. Be prepared to sleep on the floor and to provide your own bedding and toiletries (including sleeping bag, alarm clock, mattress, and towel).

For other locations, ask the organizer of radio operations whether you will be required to bring your own bedding and toiletries. For all locations, check with either the accommodation site coordinator or the organizer of radio operations to confirm where to park your vehicle.

Check-in Times

Mont Tremblant Gold dorm - After 5 PM Friday

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Net control – the offices of the Municipality of Notre-Dame-de-Bonsecours will open Friday afternoon.

Contact the organizer of radio operations or the accommodations site coordinator if you have any questions regarding check-in times.

Checkout Times

Mont Tremblant Gold dorm – 8 am Saturday morning.

Check your schedule, as you will probably have to check out before proceeding to your assignment, possibly before going to breakfast.

Net control – the offices of the Municipality of Notre-Dame-de-Bonsecours will stay open until the end of the event on Sunday.

Contact the organizer of radio operations or the accommodations site coordinator if you have any questions regarding checkout times.

Meals

Radio volunteers working at:

- Checkpoints – A “checkpoint staff” lunch will be provided while at the checkpoint. If you are eating in Papineauville for breakfast or supper, contact the accommodation coordinator for breakfast or dinner meal vouchers. (CP11 and CP10 operators will have breakfast at the Gold dorm in Tremblant.)
- Safety Points/Water Points – There are no OPS radio operators at Safety Points. Safety will use their own net.
- Net control – Meals will be brought in to net control. Contact the accommodation coordinator for meal vouchers.

Radio operators working in other positions should contact the CSM person they are working with (if appropriate) or they should contact the organizer of radio operations for information regarding meals.

Terms and Definitions

Coueurs des Bois:

Skier to complete all 10 sections.

There are 4 different levels (Gold Bar, Gold, Silver, and Bronze) of skiers. The differences are outlined below:

Bronze- Skier intends to complete all 10 sections

Silver - Skier intends to complete all 10 sections carrying a pack weighting a minimum 5 kg and skier has previously completed the event as Coueurs des Bois Bronze

Gold - Skier intends to complete all 10 sections carrying a pack weighting a minimum 5 kg and has previous completed Silver.
- Skier intends to camp out Saturday night at Gold Camp.

Gold Bar - A Coueurs des Bois who have previously completed Coueurs des Bois Gold.

NOTE: Sometimes a Gold Bar skier with a permanent bib # elects to participate as a Tourer.

Note usually the Gold and Gold Bar are thought of as Gold for our purposes.

Tourer:

Individual category for a person who intends to complete any number of sections.

Maxi-team:

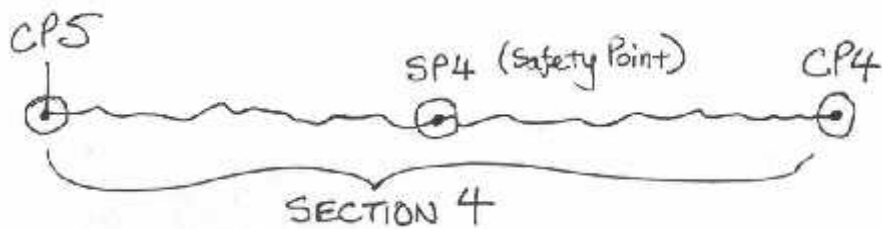
Minimum of 12 skiers under a common team name. Twenty best results combined to determine team's standing

Mini-team:

4 skiers as a team

Section:

Part of the trail numbered based on the checkpoint with the lower number. For example, section 4 is the trail between checkpoint 4 and checkpoint 5.



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Sweep:

One or more skiers that follow behind the skiers. No skier should be behind the sweep (whether skier or skidoo)

Admin x:

Designated CSM admin personnel (e.g., chairman, etc.)

Admin-2: - Responsible for checkpoint logistics issues

Admin-1: -The Event Director.

OPS:

Designated Operations Staff

Net Control:

As you expect; controls all the radio traffic on the net. You should only pass traffic if net control approves.

Reference Material

1. Radio Operator's website ---- <http://hambone.ca/CSM>
2. CSM website --- <http://skimarathon.ca/>

Document Change History

1. Versions 1 to 7: 2001-2002, Development of document
2. Version 7.1: 2002, Public release – CSM 2002
3. Version 7.2: 2005, Presentation changes, obsolete info removed, reference to websites changed.
4. Version 8.0 2017, obsolete information removed, website reference changed, Safety related information removed
5. Version 2018-v1 – rewritten to reflect commercial radio operations
6. Version 2018-v2 – removed radio ops from waterpoints, added Tremblant/Gold dorm info, other small corrections
7. Version 2018-v3 – changes to accommodations
8. Version 2019-D1 – first draft for review
9. Version 2019-v1 – no comments from reviewers, a few typos corrected
10. Version 2019-v2 – a few more typos corrected
11. Version 2019-v3 – significant changes to accommodations and radio setup.