

JOHN BEARGREASE SLED DOG MARATHON
COMMUNICATIONS PLAN
B.A.R.C.
BEARGREASE AMATEUR RADIO COALITION
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I. INTRODUCTION

Amateur radio operators (hams) have had a long history of providing an essential service to many events in the way of communications. Their license allows them access to many frequencies not open to the general public. The FCC also restricts what they are able to do with these licenses. This has caused misunderstandings and problems in the past and as a result this manual has been put together for all race volunteers, participants, and officials.

All of the ham operators up and down the North Shore assisting with the Beargrease race are considered a communications net. The smooth operation of communications is handled by a center called Net Control and is located in Duluth. "Net Control" controls the air, so to speak, and allows each net participant to report in an orderly manner.

II. OBJECTIVES

The objectives of this plan are as follows:

- 1) To define the requirements for providing communications with checkpoints, race officials and net control for purposes of safety, health and welfare of the mushers and their dogs.
- 2) To establish guidelines to help ensure that operators will comply with all federal regulations pertaining to communications.
- 3) To establish procedures for handling emergencies, gathering of data necessary for assessing status of crews and dogs, and obtaining routine assistance necessary for maintaining health and welfare of crews, dogs and supporting personnel.

III. REQUIREMENTS TO PROVIDE COMMUNICATIONS

A. CHECKPOINTS

In order to function efficiently, each checkpoint operator should have at a minimum all the following data for that checkpoint. Some of the information may never be used but if the need arises it will be available. It is also needed in case of emergency.

FACILITIES: It is important to all concerned, and especially ham operators, that you know which of the following is available at each checkpoint so that you may plan for the proper equipment and supplies required during the race.

1. Shelter
2. Electrical Power
3. Food/Water
4. Telephones
5. Sleeping Facilities
6. Medical Assistance

GEOPHYSICAL INFORMATION: Hams are very mobile and can operate under almost any condition. However, the type of equipment, antennas, power, etc. that you will bring depends on some of the following factors.

1. Access to the checkpoint
2. Distance to adjacent checkpoint(s)
3. Terrain

4. Distance to repeaters
5. Nearby crossroads
6. Elevation

B. ROAD CROSSINGS

Road crossings are similar to Checkpoints in many ways - you should read the section above on checkpoints. Hams that are manning road crossings should, if possible, test their equipment on site before the first race day. You should confirm that you would be able to operate your radio and get a good signal into the repeater. A scratchy signal is 10 times harder to hear in a noisy environment (such as at net control during the start of the race).

C. NET CONTROL

Net control is normally set up the night before the race. This allows for equipment to be checked out and repaired/upgraded as needed before the race. Net control should normally have one radio, power supply, and antenna, and one backup of each. Net control also normally has a voice phone line and a separate fax phone line. These phone numbers are usually made available to all participating hams the night before the race at the pre-race meeting.

D. COMMUNICATION LINKS

The following is a listing of all possible communications facilities available along the race route. It doesn't mean all of them can or will be used but in extreme emergencies the list is available for use.

1. REPEATERS

CALLSIGN	LOCATION	OUTPUT	OFFSET	PL
PRIMARY REPEATERS				
N0BZZ	Proctor, MN	147.330	-2.660	151.4 (input = 144.670)
	East Duluth	147.330	+ .600	114.8
	North Duluth	147.330	+ .600	156.7
WB0DGK	Wales	147.270	+ .600	103.5 15 mi N of TH
WB0DGK	Two Harbors	147.270	+ .600	114.8 shoreline
KB9JX	Washburn, WI	145.150	+ .600	100.0
N0BZZ	Bayfield, WI	146.700	+ .600	103.5
N0BZZ	Finland	145.410	.600	114.8
NOBZZ	Silver Bay	147.090	+ .600	114.8
KG0QR	Isabella	147.300	+ .600	114.8
N0BZZ	Grand Marais	147.360	+ .600	114.8
KC0IPA	Hurley, MI	147.165	+ .600	110.9
BACKUP REPEATERS				
W0BBN	Sawbill Trail	146.865	- .600	151.4
W0BBN	Grand Marais	146.895	- .600	100.0
W0BBN	Gunflint Trail	146.730	- .600	100.0
W0BBN	Grand Portage	146.655	- .600	151.4

W0GKP	Duluth, MN	146.940	- .600	103.5
	Two Harbors RX	146.940	- .600	114.8

LSAC-1 LINK REPEATER

NOBZZ	Bayfield, WI	443.850	+ 5.000	none
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2. SIMPLEX

Simplex may be used in circumstances where the repeaters are not operating correctly or when permission to use a simplex frequency has been obtained from net control. In the event that the repeaters are not available, checkpoints should attempt communication with net control or themselves on the established two-meter simplex calling frequency, 146.520 MHz.

3. AIR NATIONAL GUARD

These folks are part of our communications system. They are used in a remote location along the race route. They have extensive communications capabilities including a portable satellite cellular telephone system. They also have warm tents and other conveniences that may be used in emergencies.

IV. GUIDELINES

A. GENERAL GUIDELINES

ACCEPTABLE

- 1) Transmissions that relate to health, safety, and welfare of mushers, dogs, or race participants.
- 2) Emergencies: Any incident requiring immediate attention involving a life or death situation of a human or dog.
- 3) Requests to locate any officials.
- 4) It is the obligation of the ham radio operator to transmit the most accurate and correct departure and arrival times known to them.
- 5) Any discrepancies regarding arrival and departure times and dog counts are permissible transmissions.

UNACCEPTABLE

- 1) False information, that is known to be false by the ham operator, given by any official or otherwise, will not be transmitted over the frequency.
- 2) Discrepancies between officials shall not be transmitted over the radio except where a phone is not available. This can be handled via cell phone or other manners, but will not be transmitted over the air. The ham operator will not be placed in a position to referee a discrepancy between officials.
- 3) Requests from handlers/mushers/officials for net control to calculate specific team speeds shall be denied unless this relates to the health, safety, and welfare of the race participants.
- 4) Any swearing or abusive language not permitted by FCC rules will not be allowed or transmitted over the air by anyone, officials included.

B. INTERFACING WITH RACE OFFICIALS

Information that any race official may ask you to pass along to another checkpoint or to net control is permissible to pass on the radio as long as such information does not violate any FCC rules. The control operator of the station sending the information and the control operator of the station receiving the information are held responsible for the content of the information that is passed.

C. INTERFACING WITH NON-RACE OFFICIALS

1. MUSHERS AND HANDLERS

Mushers and their handlers may transmit over the air only information that will help them to maintain their safety and health, **NOT TO HELP THEM WIN THE RACE!** Examples include: A musher needs additional food, medical supplies, or clothing at the next checkpoint; or a musher had to turn back and needs to get his handlers back as soon as possible. If the control operator is in doubt about the content of the information, s/he should consult with a race official.

2. POLICE AND MEDICAL

All police and medical personnel may request to transmit their business over the air as long as it is race or health and welfare related. The control operator is responsible for the information being passed.

3. MEDIA

If a media person asks for information, politely refer him/her to a race official. You may allow them to use the air for safety and health reasons. For example, one of their people was bitten by a dog and needs medical attention. Requests for more equipment, etc, are not allowable. Also see FCC Regulations 97.113b.

D. PERTINENT FCC REGULATIONS

97.101c At all times and on all frequencies, each control operator must give priority to stations providing emergency communications, except to stations transmitting communications for training drills and tests in RACES.

97.103a The station licensee is responsible for the proper operation of the station in accordance with the FCC Rules. When the control operator is a different amateur operator than the station licensee, both persons are equally responsible for proper operation of the station.

97.111a An amateur station may transmit the following types of two-way communications:

- 1) Transmissions necessary to exchange messages with other stations in the amateur service except those in any country whose administration has given notice that it objects to such communications.

97.113a No amateur station shall transmit:

- 2) Communications for hire or for material compensation, direct or indirect, paid or promised, except as otherwise provided in these rules.

- 3) Communications in which the station licensee or control operator has a pecuniary interest, including communications on behalf of an employer.
- 4) ...messages in codes or ciphers intended to obscure the meaning thereof, except as otherwise provided herein; obscene or indecent words or language; or false or deceptive messages, signals or identification;

97.113b An amateur station shall not engage in any form of broadcasting, nor may an amateur station transmit one way communications except as specifically provided in these rules; nor shall an amateur station engage in any activity related to program production or news gathering for broadcasting purposes, except that communications directly related to the immediate safety of human life or the protection of property may be provided by amateur stations to broadcasters for dissemination to the public where no other means of communication is reasonably available before or at the time of the event.

97.115b The third party (a non amateur) may participate in stating the message where:

- 1) The control operator is present at the control point and is continuously monitoring and supervising the third party's participation; and
- 2) The third party is not a prior amateur service licensee whose license was revoked;...

97.119a Each amateur station, except a space station or telecommand station, must transmit its assigned call sign on its transmitting channel at the end of each communication, and at least every ten minutes during a communication, for the purpose of clearly making the source of the transmissions from the station known to those receiving the transmissions. No station may transmit unidentified communications or signals, or transmit as the station call sign, any call sign not authorized to the station.

All amateurs should read Part 97 in its entirety. The parts listed above are only for quick reference - they are not guaranteed to be accurate or correct at any time. BARC and its members cannot be held accountable for any mistakes in the FCC rules listed above.

V. PROCEDURES

A. EMERGENCY PROCEDURES

1. EMERGENCY PROCEDURE

Emergency traffic takes precedence over all other traffic. If you have emergency traffic that can not wait for the end of regular reports or the three-second pauses, use the standard "BREAK ! BREAK ! BREAK !" Remain calm and state the following:

"This is (call sign) at (name of checkpoint) with emergency traffic."

Then proceed to state the nature of your emergency. Be specific! Use exact names, locations, times, etc. that will help us to direct the proper officials to the emergency. An emergency is defined as: An incident requiring immediate attention involving a life or death situation of a human or a dog.

2. SPECIAL Q-SIGNALS

The following Q-signals are incorporated for these special situations.

QIH	Injured Human
QID	Injured Dog
QDH	Dead Human
QDD	Dead Dog
QJC	Judges Call

THESE Q-SIGNALS ARE FOR AMATEUR RADIO OPERATORS ONLY

3. TELEPHONE NUMBERS

The telephone numbers listed in the checkpoint descriptions should be used if needed. 911 is available at all locations that have phones. Net Control often has telephone numbers not readily available to all checkpoints.

B. NORMAL

1. THE NET

Net control will bring the BARC net up on the agreed upon frequency one hour before the start of the first race.

All times relayed on the net should be in 24-hour local time. A chart is included if needed:

1PM = 1300	2PM = 1400	3PM = 1500	4PM = 1600
5PM = 1700	6PM = 1800	7PM = 1900	8PM = 2000
9PM = 2100	10PM = 2200	11PM = 2300	12PM = 2400 or 0000

All checkpoint and road crossing operators are expected to be at their assigned checkpoints at least 1/2 hour before the expected arrival of the first team through that location.

2. CHECKPOINTS AND ROAD CROSSING TO NET CONTROL

NOTE: When ever possible; PLEASE state your request as you call Net Control for anything OTHER than your traffic. For example: If calling Net Control for permission to talk to another checkpoint; say "Net Control this is Finland with a request to call Sawbill". It will save much time and transmissions. Also use your location as much as possible and not so much as your call at the beginning of transmissions.

a. ABBREVIATED FORMAT

To reduce the time on the air without reducing the amount of information we have streamlined what we say during the start of the race because of the number of calls that will take place. Based on the number of road crossings and checkpoints to the Normanna road, 24 teams would generate 192 calls to Net Control. An example of this format with a road crossing and Net Control would be like this.

GRAVEL PIT: "Gravel Pit"

NET CONTROL: "Gravel Pit"

GRAVEL PIT: "Twenty Three," your callsign (meaning the team that went by you)

NET CONTROL: "Twenty Three"

This format is continuously being revised as new ideas and input from the group comes in.

b. NORMAL FORMAT

Normal radio format will be followed after all teams have passed the Billy's Checkpoint.

The following format for reporting is for the remainder of the race.

Checkpoints should report as follows. "Net Control, this is (name of checkpoint) checkpoint with (race)(arrivals/departures)". Wait for Net Control to acknowledge.

"I have the following mushers and teams arrived at this checkpoint; Musher bib# ____ with (number) dogs; Musher bib# ____ with ____ etc." Unkey your mike, Wait for Net Control to acknowledge. "The following mushers and teams left this checkpoint; Musher bib# ____ with seven dogs; Musher bib# ____ with etc. I have no further information. (Your callsign), Over."

Please list arrivals, departures, and then any other traffic in that order. This makes the net control operator's job easier.

All emergency traffic will take priority and all other checkpoints will stand by. At periodic intervals, Net Control may provide weather and road condition updates for checkpoint hams. Key Beargrease personnel arrivals and departures from checkpoint should also be forwarded to Net Control.

3. CHECKPOINT TO CHECKPOINT

Communications between checkpoints should occur only after regular reports are finished. Emergency traffic is the only exception. If the two checkpoints are close enough for simplex; the checkpoints should remain on repeater output frequency or tell Net Control when they are leaving and back on the frequency. As the race progresses Net Control may allow direct checkpoint-to-checkpoint calls without Net Control approval. It will be at Net Control's discretion when to start and end this procedure.

C. LOGGING

Each checkpoint communications operator is asked to keep the log. This log is usually available at the last meeting prior to the race. The form is intended to make it easier for you to keep track of mushers and teams, and record when you have reported it to Net Control. It is recommended that you keep this form in case any disputes arise in the future. Different hams try new form ideas every year and you may choose one that suits you. The most important thing is to keep ALL the information in a way that others replacing you can understand it if a question arises.

D. QUESTIONS ON PROCEDURE

If you have questions on procedure it can be transmitted over the air, but Net Control would prefer you check the manual first and then call by landline if possible. If unable then contact Net Control via normal means.