
BJC E-COM Project

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Section I: BJC Net Overview

Operating Hints:

- Be organized, keep your operating position clear
- Speak clearly and calmly at a speed warranted by the conditions
- Use the repeater's ID to remind you to ID
- This is a formal net, use "This is ..." unkey "Your Name and callsign" said clearly. NOTE: Only use phonetics if conditions are poor or you are marginal into the repeater, the NCS will advise when phonetics are applicable.
- If you are NCS give marginal stations a second opportunity to try to check in or ask for relays. If the marginal station is still difficult ask them to stand by and continue the net.
- If you are NCS, acknowledge all stations that check in but take checkins in groups.
- The NCS will direct all exchanges between net stations either on frequency or on an alternate frequency. If you are directed to an alternate frequency when you return to the net frequency check back in with the NCS by saying "Re-Check".
- Do not acknowledge jammers.
- Before attempting to check in make sure your frequency and offset are correct and any CTCSS tone is enabled.
- If you are NCS attempt to find a backup NCS station.
- If you are NCS record: (a) all stations that check in with their location, and (b) all traffic handled.

NCS Net Agenda:

- Make a formal call to begin the net using this script, *"This is the BJC Emergency Communications Net. Your net control for this net is (callsign) and my name is (your name). I am located at (location). This is a formal net and all communications will be directed by net control. The purpose of this net is to provide emergency communications for the BJC facility."*
- Order of net:
 - Call for formal traffic (Emergency/Priority, Time-Valued, Routine) make a list for each type
 - Take check-ins (Check-ins should provide Name, Call-sign, Location & Availability)
 - Handle traffic (NCS should document TX and RX stations for each piece of traffic handled)
 - Close the net when directed by the BJC Emergency Management Director or designee

BJC Net Frequencies & Modes:

Band	Mode	CTCSS/Mode	Tactical
2-meter	146.850(-)	141.3	Tack 1
2-meter	146.490(simp)	Simplex	Tack 2
70-centimeters	443.075(+)	141.3	Tack 3
75 meters	3.972Mhz	LSB phone	Tack 4

Section II: BJC Emergency Communication Team

Introduction

BJC Emergency Communication Team is an organization of amateur radio operators who provide backup communications in time of disaster to the hospitals within BJC.

Whom We Serve

BJC Emergency Communication Team serves the hospitals in the BJC organization under the direction of the corporate offices of BJC.

Mission Statement

BJC Emergency Communication Team is an organization of volunteer public safety communicators whose purpose is to assist authorities during emergencies.

BJC Emergency Communication Team personnel are amateur radio operators who provide communications on amateur radio frequencies.

BJC Emergency Communication Team personnel are under the command of BJC and are assignable to other hospitals/agencies on a mutual aid basis.

BJC Emergency Communication Team personnel are prepared to respond during emergencies by a continual training program and by maintaining their radio equipment and other response items in operating condition.

BJC Emergency Communication Team consists only of those who want to help and who are dedicated to staying prepared to render radio communications assistance during emergency conditions.

What is Expected of Personnel

BJC Emergency Communication Team personnel are expected to report for duty during any call-up by BJC. During a disaster, personnel are expected to first ensure the well being of their families before reporting for duty.

BJC Emergency Communication Team personnel shall not self-activate but shall monitor at least on one of the **BJC Emergency Communication Team** frequencies for a call-up or to exchange information immediately after becoming aware of a disaster possible affecting BJC.

To retain certification, **BJC Emergency Communication Team** personnel are expected to attend at least two thirds of the following: scheduled meetings, drills, exercises, simulated disasters, training sessions, and nets.

To avoid conflicts during disaster call-ups, **BJC Emergency Communication Team** personnel are permitted to belong to other emergency response organizations but are expected to dedicate first response to BJC.

BJC Emergency Communication Team personnel are required to adhere to all FCC Rules and Regulations and to conduct themselves in a manner befitting certified public safety communicators. They shall take pride in using excellent operating procedures at all times.

BJC Emergency Communication Team personnel are expected to show a desire to help, learn from, and train other personnel. They must exhibit an interest and aptitude for handling emergency communications.

BJC Emergency Communication Team personnel are expected to maintain their duty bags and personal first-aid kits to be ready for virtually any type of activation.

BJC Emergency Communication Team personnel are expected to present a professional appearance whenever on duty.

Section III: BJC Net Control Procedures

BJC Net Control Station Operators Guide

To the current and new net control operator for BJC Emergency Communication Team, many thanks for your volunteer service for this important function.

This manual is a comprehensive guide to BJC Net Operators. It includes an agenda and discussion of net procedures, a simple script, how to handle the unexpected, list of common mistakes, and a phone list of control personnel.

Emergency Net Operation and Agenda

If there is a requirement to initiate an Emergency Net and there is a QSO in progress, politely interrupt and inform them that the repeater is needed for emergency Net Operation. If their traffic can not be immediately wrapped up, suggest that they meet on another repeater or simplex.

Agenda

1. Call "BJC Emergency Communication Team Members"
2. Introduction – ID yourself and the purpose of the net
3. Briefly outline the net agenda (See net script)
4. Check for emergency or priority traffic & take a list of traffic
5. Check for time-valued traffic & take a list of traffic
6. Take check-ins
7. Handle traffic as required – document all traffic passed
8. Close the net when directed by BJC Emergency Management Director or designee

Operating Hints

Keep your desk clear of anything that may foul shuffling of net paperwork. Be prepared and have room for your net script, check-in logs and pad of paper for noting situations not covered by the check-in log. The use of a repeating timer set to 9-9.5 minute intervals is very handy to remind yourself when it's time for a station ID. Of course, keep back-ups of all writing instruments ready as well as your set of repeater control codes.

Remember that the BJC Emergency Communication net is a formal net. When checking into the net, use "This is..." un-key briefly, then give your call sign speaking clearly and distinctly. **NOTE:** The use of Phonetics should be employed ONLY when band conditions and/or propagation make understanding normal speech difficult and will be directed by the NCS.

Be on your toes during check-ins! There is nothing that reflects badly on a net more than having to recall lots of people because you missed calls or operators names. Experienced operators have enough practice in recognizing the "regulars" and can fill

in the call and name from the voice alone. Our newer operators need to stay alert and keep a sharp pencil. Conversely, do not hesitate to ask some to repeat their call and/or name if you missed it.

Handling marginal stations is always a problem. Politely tell them they are not being heard by the net control well enough to be understood and give them a chance to try again. If the station still cannot be heard, ask if there is another station that can relay, if no relay is available ask the station to stand by and proceed with the net.

Acknowledge check-ins by repeating their call sign and name every few check-ins.

Direct exchanges between net participants are sometimes necessary to pass information but should be authorized by Net Control. Let this happen. It will extend the exchange if you try to play "traffic cop" by acknowledging each transmission. Also, if you have set the tone of the net by being brief, net participants will also be brief in these exchanges.

Dealing with the Unexpected

One day you are going to be doing the net and your radio, power supply or something will fail. This is Murphy's Law at its finest. Have a backup radio handy even if it is just an HT.

If during severe weather season a storm approaches during your net and you feel that your station is "at risk" by continuing to operate during bad weather, you may try to pass the net to another backup net station or quickly explain the situation, close the net and secure your station. We do not need to be sacrificing radios just for the sake of the net.

Jammers – A Harsh Reality

The downside of large nets is that they seem to be an attractive target for the "lids, kids, and space cadets" that are an unavoidable part of the HAM community. In other words, expect to be jammed. To minimize jamming of your net control station, always use the highest power and the highest gain antenna at your disposal.

The cardinal rule of dealing with a jammer is to never acknowledge his (or her) presence or impact on the net operations. If the jammer gets the impression that nothing they do is affecting things, they will go away.

If the target of the jammer is a particular station, do your best to hear through the jam and acknowledge the legit station normally. With experience you can hear fragments of voice that will allow you to recognize the station. If a jammer blocks an entire announcement and you are aware of the announcement contents, then "read it back" as if you heard it. Otherwise tell the station making the announcement that he/she was too noisy to copy and that they might want to try again later.

Most Common Mistakes

With everything that goes on in a net – not to mention the nervousness that comes from being “on the air” with a large audience – it is easy to forget to do things. Here are the most common mistakes historically made by net control operators:

1. **Depending upon the repeater in use, failure to use the right CTCSS with control codes.** When in net mode, all control codes including autopatch functions require that the control operator CTCSS (“PL”) tone is present on the transmitted signal. Know your equipment and how to set various functions (“PL” tones). CTCSS May also be beneficial during simplex operation.
2. **Forgetting to ID.** This is especially a problem with newer net control operators. In our nervousness, as well as trying to keep up with the checks arriving fast and furious, it is easy to overlook the ten-minute ID requirement. Use of a repeating timer is recommended.
3. **Giving weak or noisy stations too much attention.** While it is generous to give everyone you hear a chance to be recognized, don’t grind the net to a halt by asking a weak station to keep trying. Give them one chance to try again if the station is still unintelligible ask for a relay, if no relay is available ask the station to stand by and continue with the net.
4. **Keep transmissions brief and to the point.**
5. **Starting the net on the wrong repeater, simplex, or without the offset.** This sounds funny but it can and does happen even to the most experienced. Always double-check your settings as to band, repeater offset, and PL.
6. **The “talk show host” syndrome.** Don’t succumb to the temptation to play announcer in order to fill time or make announcements that aren’t directly related to the business of the net. Do not feel pressured to “add to” other’s announcements.

Backing Up Other Net Control Operators:

It is always a good feeling knowing that there is another operator ready to take over if there is a problem or in an unusual situation to help answer a question. However, do not depend on this to be the case.

If you are available as a backup, when you are not the Primary Net Control Operator, you may elect to advise the Primary Operator of your presence. Stand by and await instructions from the Primary Operator.

A Sample Script

This is only a sample script to provide a starting point. If you are not comfortable with the wording, feel free to alter the text to your liking. Please contact the BJC Emergency Communications Coordinator before making any big changes in the net program order.

Remember to ID every 10 minutes or less.

Script ...

NCS: *"This is the BJC Emergency Communications Net. I will be your net control station tonight and my name is _____. My call is _____ (use phonetics) and I am located at _____ (name facility). This is a formal net and all communications should be directed to net control.*

A PL tone of 141.3 is required to access this repeater.

*The purpose of this net is to provide emergency communication to the facilities within BJC. If you are providing communication for a BJC Facility please check in with your **call sign, name and facility location.***

*First are their stations standing by with **emergency, priority or time-valued** traffic? Stations with traffic, please call now."*

NCS: Take a list of all traffic.

(Net Control shall acknowledge check-ins)

NCS: Please stand by for traffic or assignments.

(Pass traffic or make assignments as required)

NCS: will document all traffic passed with receiving station and time relayed.

Section IV: Emergency Response Plan

What to Do and Where to Go

Listen and then check in on the following frequencies:

Band	Mode	CTCSS/Mode	Tactical
2-meter	146.850(-)	141.3	Tack 1
2-meter	146.490(simp)	Simplex	Tack 2
70-centimeters	443.075(+)	141.3	Tack 3
75 meters	3.972Mhz	LSB phone	Tack 4
			Tack 5
			Tack 6

Activating the Membership

When an emergency occurs, the **BJC Emergency Communication Team** may be activated. It may be obvious to you that you should check in, as in an earthquake, or you may receive instruction on your radio, by phone call or email. When that happens, you should immediately monitor the Primary Resource repeater and tactical primary frequency, get to your assigned facility and take appropriate action (check in, form the net, etc.).

Forming the Emergency Response Net

1. Make sure your location is secure; no gas smell, no electrical hazards, building seems safe, family members accounted for and safe.
2. LISTEN first to the Primary Resource Repeater. If the repeater is down, transmit on the Tactical Primary Frequency (simplex). Ask if there is a net control station (NCS). (If there IS a Net Control Station, Follow directions). If no answer, "YOU ARE IT". Net control should be your ONLY Task. The net will remain active until the BJC Emergency Management Director or designee declares the emergency is over. Declare it a directed net. Remember to ID according to FCC regulations. STAY ON FREQUENCY. If you must leave the frequency for any reason, advise Net Control and check in again when you return.
3. If you are Net Control, request that stations report in with the information below. Start a log to record everything: even better, have someone else volunteer to do this. Do not move the people having heavy equipment (e.g. generators) until you know where they are needed. Prepare a report of available people and equipment as soon as you have time; Call sign, name, current location, equipment available to MOVE (radios, heavy-duty vehicles, RV's, generators)

4. If you are Net Control, get the following location staffed first, with at least two hams each (radio operator and recorder).
5. Turn over Net Control to this station.

Emergency and Priority Traffic

If you have emergency or priority traffic and need to break into the net there are several established procedures for doing so. Examples where you should interrupt on-going traffic are as follows:

“Break Break” or **“Life Threatening”** if the situation is immediately life threatening.

“Priority” if the situation is endangering property and/or has the potential to turn into life threatening. All other traffic should wait for an appropriate pause in the net traffic before transmitting. It is the Net Control Station’s responsibilities to determine the nature of traffic and deal with it appropriately. ASK how serious the situation is.

Communication Priorities

Top Priority

Communications directly relating to the immediate safety of life of individuals or the immediate protection of property.

Second Level Priority

Communications directly relating to the provision of shelter, food, and safety to people whom have been displaced by the disaster.

Third Level Priority

Health and Welfare communications originated in the disaster area on behalf of disaster victims and directed to relatives and friends in other areas.

Fourth Level Priority

Health and Welfare communications originated outside the disaster area. The quantity of these communications should be minimized as they are destined for either non-disaster areas where telephone service is available or for disaster areas where the ability to deliver is uncertain.

Lowest Priority

All other amateur radio communications

Additional Information

As a **BJC Emergency Communication Team** member, it is your responsibility as an emergency responder to know emergency response procedures, including how to run and/or operate in an emergency response net, proper equipment, etc. Be Prepared! That is what the Amateur Radio Emergency Service is about.

What Is Expected Of You

1. Follow the instructions on the previous pages
2. Make sure your family is safe. No one can be expected to perform well in an emergency situation when they are concerned about their loved ones.
3. If nets are already established, check in and receive instructions.
4. Once on site for your assignment, check in with the assigned contact (probably the insert contact position here _____)
5. Prepare to operate – check equipment and connections
6. Initiate a log, and check in with Net Control. Get your Tactical Call Sign if you don't already have one.
7. Use formal message forms if available. Don't forget to write the message numbers and short subject description in you log.
8. Use Tactical Call Sign for identification. Do not identify excessively with your FCC call sign. The Tactical Call Sign is more important.
9. Remember, your primary function is message handling. Keep chatter to a minimum. Do not spread rumors. Refer members of the press to the responsible official.
10. At all times monitor your assigned frequency. Use a second rig or scanner to listen around.
11. When your shift is over, brief your replacement before leaving. Pass along notes and other pertinent information, including any messages still awaiting replies.

Passing Message Traffic

1. Speak clearly and in an even tone. Don't shout.
2. Be sure to get the name of the message sender, the recipient, and a message number if any.
3. Pause every five words or so to allow time for the other operator to write. Don't speak faster than you can write. The receiving station should acknowledge receipt of the item. When passing lists, pause after each item for acknowledgement.
4. **Use clear text (plain speech)** – no Q signals or jargon!
5. The receiving station should confirm the accuracy of the message. As incorrect message can be worse than no message at all!

Section V: Operational Do's and Don'ts

Disaster Service Worker Registration

Do's

- Listen for your Tactical Call Sign
- Use simple phrases
- Answer promptly when called
- Keep the frequency available as much as possible
- Don't use jargon, Q signals, or 10 codes – use clear text
- Keep transmissions short
- Bring spare, charged batteries
- Bring a gain antenna – not just a rubber duck
- Let third parties speak over your radio
- Ask for whom the message is intended
- Shield your mic from wind
- Use an earphone unless someone else needs to hear

Don't's

- Don't leave the Net without checking out
- Don't make unnecessary transmissions
- Don't talk louder in a noisy environment
- Don't acknowledge the presence of a jammer
- Don't repeat rumors
- Don't use VOX or locking PTT switch

What Every BJC Emergency Communication Team Member Must Have

- Amateur Radio Operators manual
- Mobile two-meter transceiver (a dual band 2m/440 is better)
- Note pad and writing instruments
- ID Badge and FCC license
- Personal medications, food and water for a 12 hour shift
- Appropriate clothing for weather and terrain
- First aid kit, flashlight and spare batteries
- Bag, briefcase etc. to hold all the above. Keep it in your car truck and you will always have it with you when you need it.

The above items are the absolute minimum you must have to function as a communicator in an emergency.

Equipment Check Lists

There are many checklists making the rounds. With each disaster we learn more and add to our lists, which then require a bigger truck to carry the stuff. These lists are not intended to be exhaustive. The lists cannot address detail specific to a member's situation such as medicines and food allergies, nor can they address details peculiar to each disaster (extended stays in the field, for example).

These lists must not be considered restrictive during a disaster. During a disaster, you should bring EVERYTHING with you when you respond to a location – EVERYTHING that might POSSIBLY be useful.

Each person needs to develop his/her own personal checklist.

Other lists:

- American Red Cross Family Disaster Plan and Personal Survival Guide
- First Aid and Survival Guide in the front of the phone book
- Grab-N-Go Checklist (Following)

Grab and Go Kit Check List

- Two-Meter HT plus 12 hours worth of batteries (a dual band 2M/440 is better)
- Consider a waterproof bag to protect it from the elements
- 1/2 wave gain antenna for better performance and a magnetic mount antenna
- AC to DC adapter and auto cigarette lighter plug cable to power HT
- Remote speaker/microphone or headset
- Headphones with correct connector to plug into radio for use in noisy areas
- Extra coax for antenna and connector and adapters for radio
- Thomas Guide Map book or other maps
- Repeater listing frequency directory
- Users manual for your radios or cheat sheets
- Message forms, writing pads, pens and clipboard.
- BJC badge, copy of FCC license
- Appropriate clothes for weather, terrain, and duration. Dress to stay warm and dry.
- Hat, sunglasses and sun block during warm sunny weather
- Food, Water, and needed medicines for at least 12 hours.
- First aid kit, first aid and CPR Training?
- Night time gear, flashlight, extra batteries and bulb, reflective vest, flares in vehicle
- Small tool kit, gas and water shut off tools

Extra Items

- Second Radio with 12 hours of battery power
- Base station antenna i.e. J-Pole and mounting hardware
- 50 foot of coax with connectors
- Scanner radio and frequency list of local public safety agencies
- Large 12-volt battery, gel or deep cycle, charger, 100 feet of AC Cord, large gauge
- Poster paper, markers and tape for signs
- Hard hat for your head
- Three-way electrical adapter (for two-prong outlets)
- Whistle
- Waterproof paper

Base Station Check List

- 25+ watt two-meter transceiver
- Another separate VHF, UHF, or dual-band transceiver
- BJC Emergency Communications handbook, Thomas Guide map, Repeater Directory
- Log Book, 200+ ARRL Message Forms
- Battery Powered AM/FM Radio or TV
- Food and water for one week
- First aid kit (\$25 Red Cross or better), flashlight
- As least one permanently mounted outside antenna per radio
- All equipment secured to table or desk. All furniture which holds equipment or cables secured to wall studs or floor.

Optional

- 1000+ watt generator plus five gallons fuel (legal maximum without permit) or a week's supply of fuel (with permit and proper installation)
- A method to siphon or pump gasoline without AC power
- Maintenance schedule and monthly operation of above generator
- TV With outside antenna AND cable (for CNN) connections
- VHF packet station with dedicated radio and antenna, computer (not terminal) and printer.