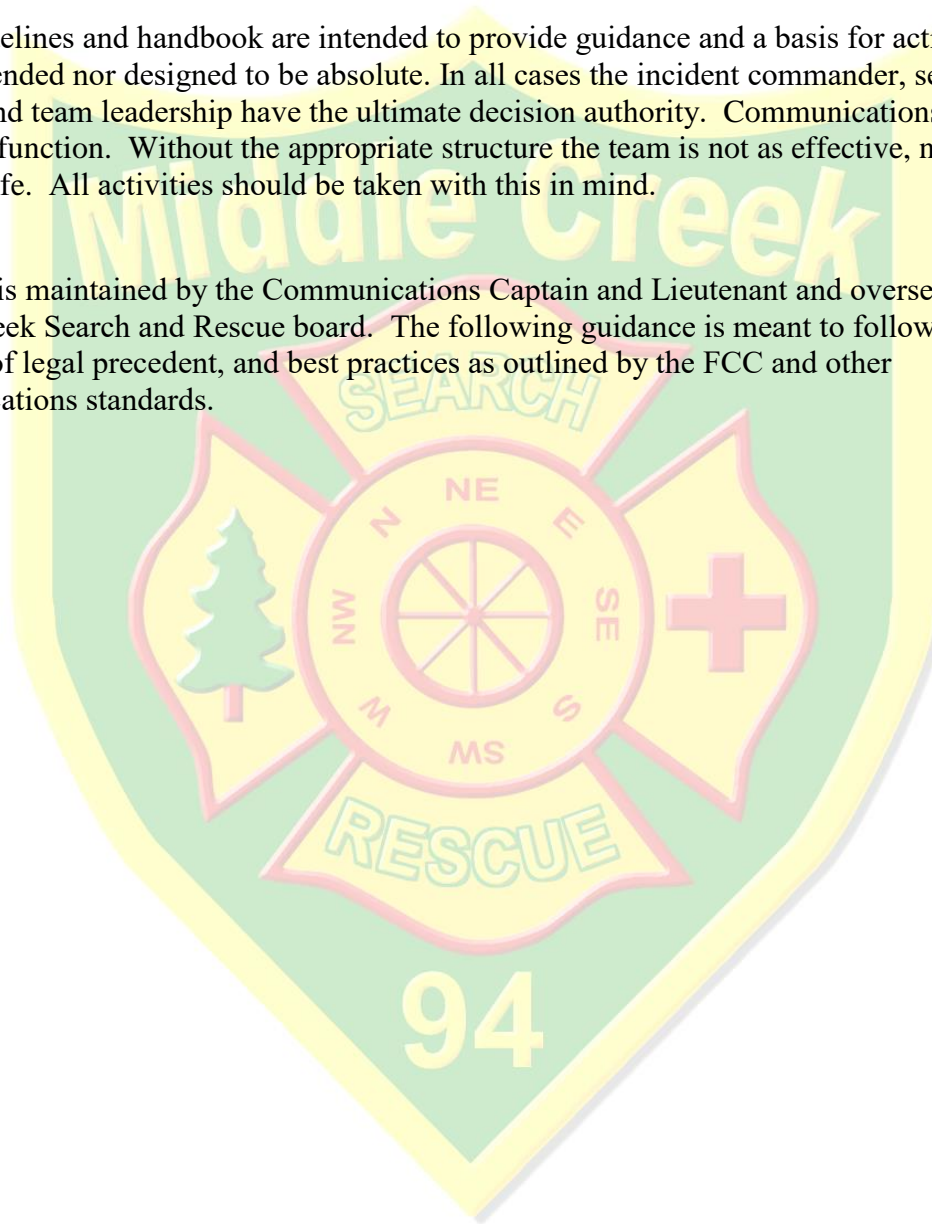# Middle Creek Search & Rescue

Standard Operating Guidelines
And
Communications Team Handbook

Preamble

These guidelines and handbook are intended to provide guidance and a basis for action. They are not intended nor designed to be absolute. In all cases the incident commander, search manager and team leadership have the ultimate decision authority. Communications is a support and safety function. Without the appropriate structure the team is not as effective, nor is the searcher safe. All activities should be taken with this in mind.

This SOG is maintained by the Communications Captain and Lieutenant and overseen by the Middle Creek Search and Rescue board. The following guidance is meant to follow the highest standards of legal precedent, and best practices as outlined by the FCC and other Communications standards.

Contents

Task Team Communicators

Scope: This section shall cover all individuals who are designated as the "Radio OP" on Search task, both in training and actual searches, as well as any other MIDSAR (Team) activities.

Expectations: Radio Ops will follow all Laws and regulations as established by the FCC, follow the best practice standards at all times, only operate equipment to which they are legally authorized, and carry on them a copy of their FCC License when operating. Operators are expected to provide their own equipment in accordance with Appendix A (Recommended communications kit).

Radio Ops are further expected to maintain their radio equipment in good working order, and should expect to have their equipment used in adverse field conditions during any team activity.

Expected Minimum Communications:

While in training or on searches, the following are expected minimum communications from field teams:

- Departing Base/ Command (this is your last chance to check batteries and ensure functionality.
- Starting task
- Task Complete
- Returned to Base/ Command

Other Communications should be kept short and task related. Recommended additional communications include reporting clues, requesting additional instructions or information, or when arriving/ departing task if the task start is a distance from base, and you are not immediately starting or returning.

Emergency and sensitive communications:

In the course of searches or training, the task may encounter a situation that requires special attention. These include, but are not limited to, finding the subject, medical situation, crime scene or environmental induced situation (like tornado or wildfire spotted).

When one of these events occur the field team(s) should take the following steps:

- Contact command/ Base using the prosign "Priority". Example "Command, Task 12, with Priority traffic", or "Command, task 12, Priority"
- Command will acknowledge the priority traffic and secure the net as quickly as possible. Transmission will be similar to "Station with Priority traffic, acknowledged. All Stations this net, all stations this net, secure radios, I say again, secure radios."

- Command will follow procedures outlined in Appendix D: Operational Procedures to remediate issue and release net as quickly as possible.
- All teams not involved with the priority traffic, will use headsets, or turn down the radio and isolate themselves from other individuals overhearing the radio conversation.
- Field communicators, will hold all non-urgent radio traffic, and monitor for the net to reopen, or additional instructions as issued by command.
- All Priority traffic should be communicated by the most secure means practical.

Communications to and from team activities:

All licensed team members are encouraged to use their handheld or mobile radios to communicate with other team members traveling to and from team activities. These devices perform best when leveraged with an external mounted antenna system. The communications team will publish a talk-in repeater and backup for this purpose. Monitoring to an actual search incident enables team members to keep abreast of the current situation including any changes or recalls. Monitoring and talking on return from activities aid with alertness and safety. When operating on the public repeaters, remember, we are guests, operate with good radio practices and do not interfere with other radio traffic.
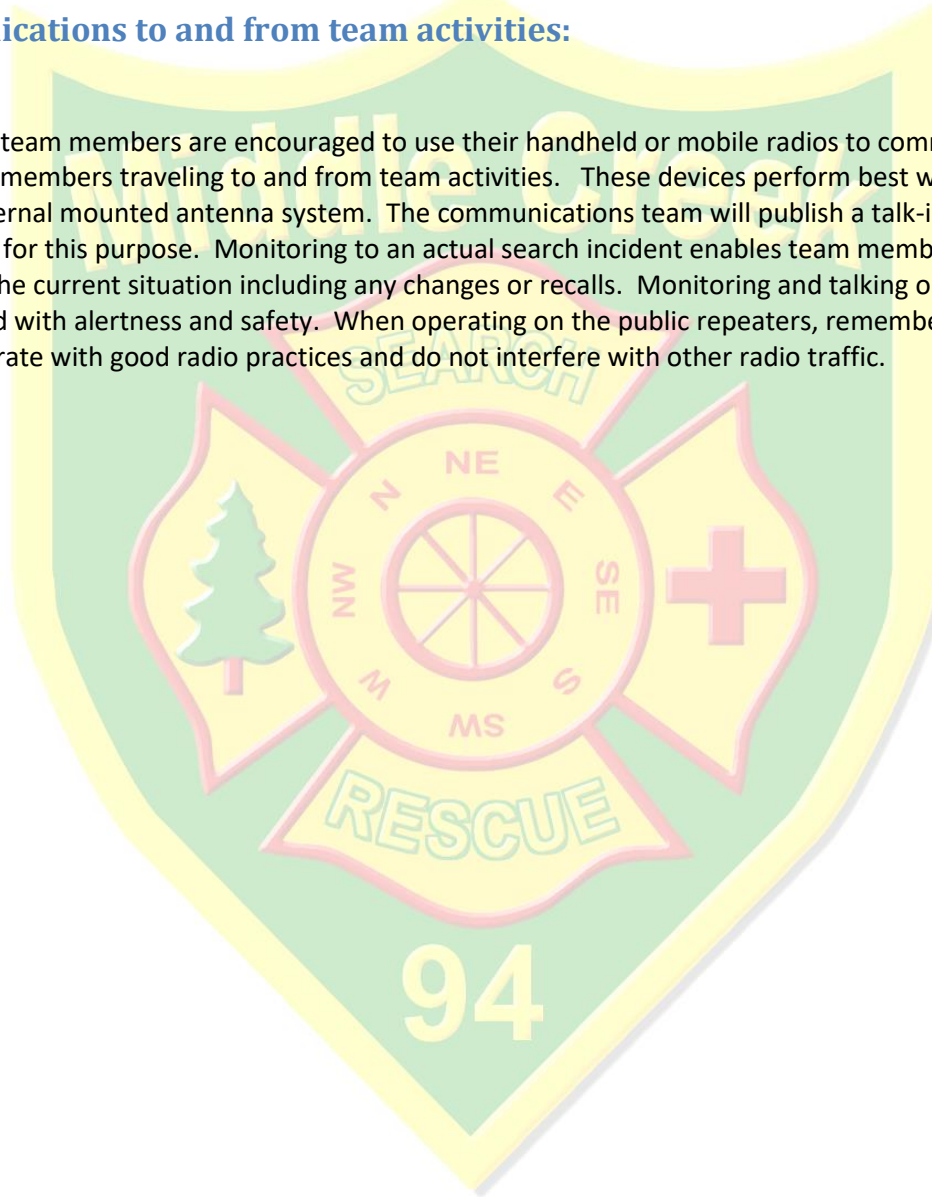
Communications Team Members

Scope: This section shall cover all individuals who are designated as members of the Middle Creek Search and Rescue (MIDSAR) Communications Team, both in training and actual searches, as well as any other MIDSAR (Team) activities.

Expectations:

Members of the MIDSAR Communications (Comms) Team are expected to be higher trained and educated on subjects associated with all manners of Emergency Communications than the average team member. In addition to the requirements for Radio Operators, Comms Team Members will meet the following minimal requirements, within two years of joining, to be a member of the Comms Team.

1.   Be a member in good standing of Middle Creek Search and Rescue,

2.   Holding a current, valid FCC Amateur class radio license,

3.   Completion of the ICS 100, 200, 700, 800 and 951 self-study courses

4.   Completion of the Kentucky ARES self study Training (aka KYHAM) course.

5.   Maintain a Communications kit as outlined in Appendix A (Recommended communications kit),

6.   And maintain a SAR Radio Operator's book as outlined in Appendix B (SAR Radio Operator's Book content).

All Comms Team members are expected to be able to support and operate team owned equipment in accordance with established policies and procedures (as outlined in Appendix D: (Operational Procedures)), in a training or actual search environment. Understanding we will not always be the lead agency, the Comms Team will also be responsible for interoperability operations and support. The Comms Team will lend aid and expertise to other supported agencies (including other SAR teams, local fire and police, or other designated agencies) upon request. We will offer our support upon arrival at an incident, and operate at the direction of the incident commander.

Communications to and from events:

Comms Team members will set the example and leverage the talk in repeater/ frequency to talk to and from events. Among the responsibilities will be monitoring for excessive fatigue in the voice, or other safety concerns. A designated Comms Team Member will remain on frequency till all team members have cleared the frequency.

Communications at events:

The senior Comms Team member is responsible for creating an ICS-205 (Communications Plan) for all team events. The plan can be formal or informal, but will be communicated to all team members participating in the event. The communication plan will consist of no fewer than four channels, following the P.A.C.E. (Primary, Alternate, Contingency, Emergency) Model. The Comms Team will act as net control during Search and Training events and will broadcast under the KC3BFI call sign.   Net operations and procedures will be performed as outlined in Appendix D of this document.

Continuing education:

Comms Team members, are encouraged not to settle for minimal requirements. The following additional education is recommended:

1. Obtain a minimum of General Class Amateur radio license

2. Managing Search Operations (MSO), Managing the Lost Persons Incident (MLPI) search management training

3. ICS300 and 400

4. COM-L/ COM-T certification

5. SkyWarn

6. AUXCOM Certification

7. Membership Local Auxiliary Communications Service (ACS) such as RACES and ARES

Team Communications Assets:

The Comms Team will be responsible for the maintenance and programming of all MIDSAR Team communication assets. This includes but is not limited to the team repeater, team Amateur Radio handhelds and mobile radios, County radios and pagers issued to the chiefs and any other communication asset in the team's inventory.

The Comms Team will maintain an ICS 217 (Communications Resource Availability Worksheet). This form may be simplified into a spreadsheet that lists the team Ham radio load with interoperability frequencies. The Comms team will regularly validate the program load by cross referencing it with the SCTF-AWRG ICS 217, and verifying the functionality, offset and PL tones of all repeaters listed.

Additional repeaters should be evaluated to provide coverage in areas that are not covered by existing program load and in the MIDSAR area of responsibility.

The Comms Team will evaluate and maintain a list of recommended and supported Amateur Radio equipment, along with the hardware and software necessary to support programming of the recommended and supported devices.

The Comms team will ensure all team members have access to the radio load to program their privately owned radios, and non-supported devices. All Private owned and team owned equipment should be checked regularly to ensure all devices are on the same program load.

MIDSAR Communications Documentation:

The Comms Team is responsible for the maintenance of this and all team documents concerning Communications.
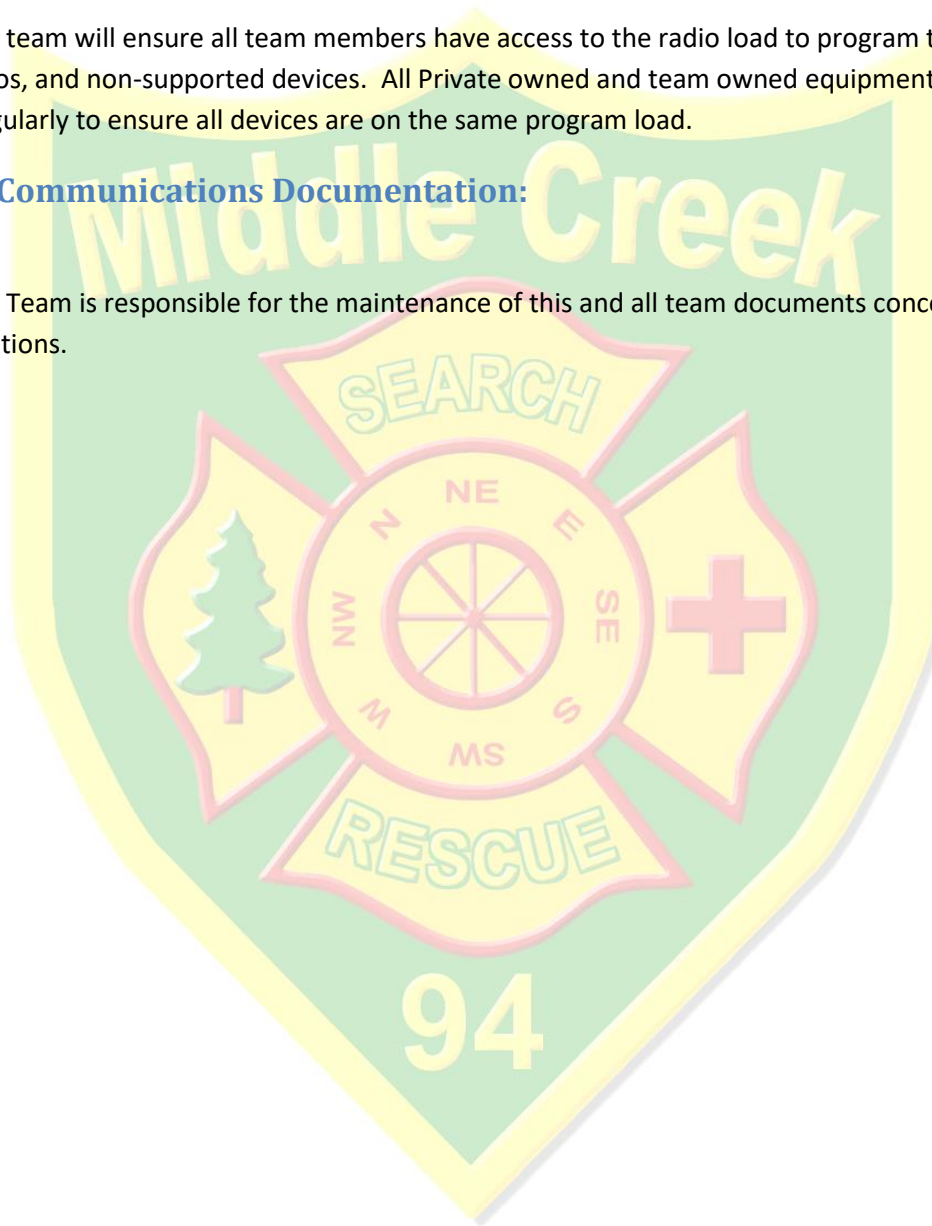
Appendix A: Recommended communications Kit

Handheld radio:

Recommended Yaesu FT-60

- Extra Battery (long life is desirable)
- Alkaline Battery Pack
- Replace stock antenna with 70cm/ 2M from Comet or MFJ
- Magmount Car Antenna (70cm/ 2M) with male sma adapter Comet or MFJ Brand (recommended)
- Remote speaker mic with ear plug (Pryme is the best name)
- Cigarette plug charger
- Small pouch to carry and organize accessories

Mobile radio

The team uses Yaesu FT-8800, the Yaesu FT-8900 is also used by members of the communications team. Comparable at lower cost is the TYT-9800.

- Replace stock power plug with Anderson PowerPoles
- Matching antennae
- Earphones (if you plan to use the radio outside the car).
- external power source (12v, 18aHr+ battery, ac power supply, etc)
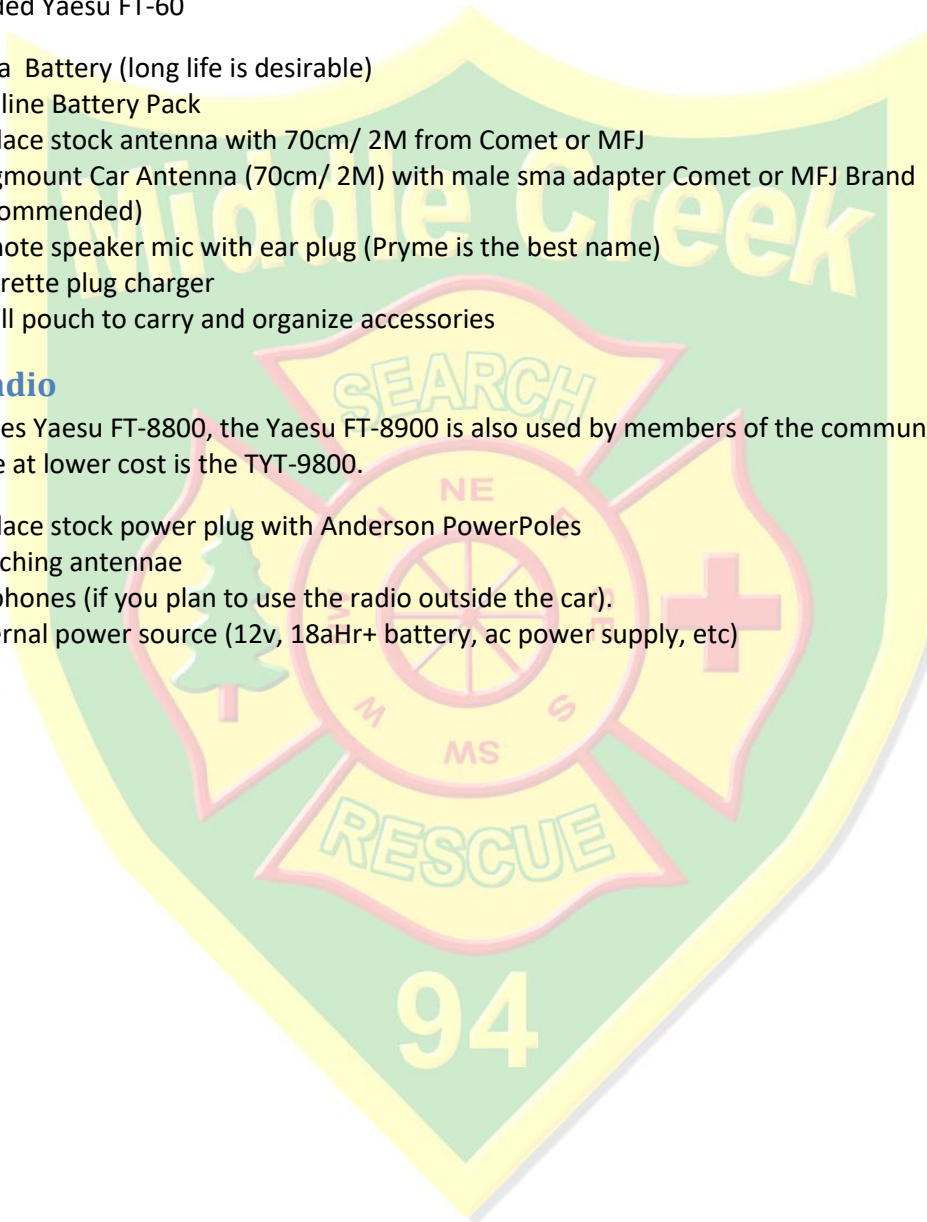
Appendix B: SAR Radio Operator's Book content

1. PA Road Map
2. Amateur Radio Band Plan
3. Special interest frequencies list (emergency frequencies per band/ service)
4. Team Roster, sorted by Call Sign
5. Radio Load Quick Reference sheet
6. Standard Radio Load, this doubles as an ICS Form 217 Communications Assets plan
7. Phone Roster all supported County's non-emergency EOC Phone Numbers and other SAR Teams
8. Pager Codes/ Rally Points
9. Dispatch Procedures
10. Copy of team phone tree
11. Weather Safety Charts (Heat and Wind Chill Indexes)

Hard Copies:

- All related Radio Licenses
- ICS Course Certificates
- Radio Training Certificates (i.e. KYHAM, ARRL, etc)
- SAR Related training certificates
- Other relevant training and knowledge certificates, licenses, etc.

2 copies each blank forms:

- Weather log
- ICS Form 309 Communications log (5 copies)
- ICS Form 205 Communications Plan
- Rally Point Log
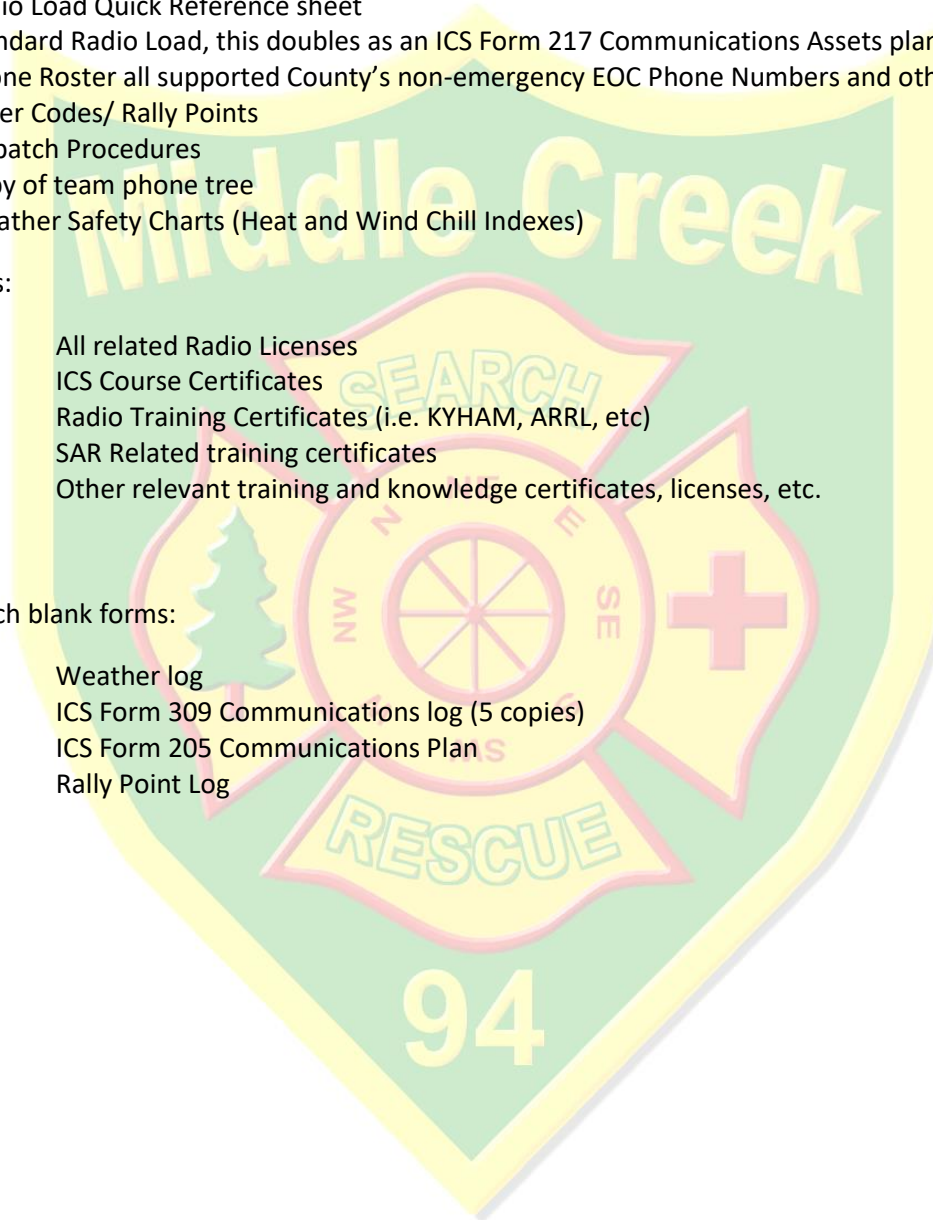
Appendix C: Special Frequencies list

Freq	Use
34.90	National Guard Emergency Channel
39.46	Inter-department emergency Communications by local and State Police
47.42	Red Cross relief frequency
52.525	6-Meter band Ham Radio Emergency Channel
121.50	International Aeronautical Emergency Frequency
138.225	FEMA Disaster Relief Frequency
146.52	2 Meter Band Ham Radio Emergency Channel
151.625	Businesses that travel the country
154.57	Businesses that travel the country
154.60	Businesses that travel the country
154.28	Local Fire Department Emergency Channel
154.265	Local Fire Department Emergency Channel
154.295	Local Fire Department Emergency Channel
155.160	Inter-department emergencies by local and state agencies during Search and Rescue Operations
155.475	Inter-department emergency Communications by local and State Police
156.75	International Maritime weather broadcasts
156.80	International maritime distress, calling and safety channel
162.40	NOAA Weather broadcasts and Bulletins
162.425	NOAA Weather broadcasts and Bulletins
162.45	NOAA Weather broadcasts and Bulletins
162.475	NOAA Weather broadcasts and Bulletins
162.50	NOAA Weather broadcasts and Bulletins
162.525	NOAA Weather broadcasts and Bulletins
162.55	NOAA Weather broadcasts and Bulletins
163.275	NOAA Weather broadcasts and Bulletins
163.4875	National Guard during emergencies
163.5125	Armed Forces Joint National Disaster Preparedness
164.50	Department of Housing and Urban Development National communications
168.55	Federal Government Civilian agencies during Emergencies and Disasters
243.00	Military Aviation emergencies
311.00	US Air Force in-flight
317.70	U.S. Coast Guard Aviation
317.80	U.S. Coast Guard Aviation
319.40	US Air Force in-flight
340.20	U.S. Navy Aviation
409.20	Interstate Commerce Commission National Communications
409.625	Department of State National Communications
462.675	GMRS Emergency Communications and Traveler Assistance

Appendix D: Operational Procedures:

Communications extends command and control as well as providing safety during team events. Without communication team efforts are less efficient and effective. All Middle Creek Search and Rescue communications will be in accordance with local and federal laws.

Record keeping:

Communications logs will be kept, either formally on an ICS 309 or informally, for all team functions, excepting where communications is incidental such as meet and greet type public events.

Communications Plans will be generated, formally on an ICS 205 or informally for all team events. This plan will be communicated to the team at the earliest possible time before the operational period or at the start of the operational period. The communications plan will be kept with the communications logs. Any notes taken concerning communications shadows or other issues will be attached to the plan at the conclusion of the event.

The Comms team will maintain a Weather log (MIDSAR Weather) for all Search and Training events. While weather is not normally a communications function, MIDSAR Comms Team members are expected to be SkyWarn trained and are in the best position to log and monitor weather events for team health and wellbeing.

These records will be maintained by the recording communications officer and a copy provided to the Officer in Charge of the event (search or training) upon completion, or in a reasonable time after completion if unable to provide a duplicate at the time. These records are a part of the team records and will be maintained by the recording officer for a minimum of 5 years.

Routine communications:

Due to the critical nature of communications, it is essential that the Comms Team be operational before operations begin. The Comms Team becomes "activated" upon receipt of county texts requesting Chief 94 to contact county. This is because the Comms Team does dispatch and overview of all activities. When possible, one Comms Team member should be stationary running the Communications log, recoding individual check ins, and commands issued via radio, while the remainder are in transit. Then if advisable travel to the incident site and combine the Communications log.

In training scenarios, the Comms team should start monitoring the talk-in frequency one hour prior to the initial on site time.

The Comms Team should remain on frequency until all team member report arrival at return destinations or clear the frequency, whichever is later. These safety talk homes do not require being

logged to the Communications log, unless the communications is of an extra ordinary nature, things such as accident, or a concern that requires a reaction.

While operational, the site/ individual who is acting as command will use the MIDSAR call sign of KC3BFI. If in a split command such as when a stationary individual is command while the team is establishing the Command Post, once established and relayed to the stationary individual the primary command will assume the KC3BFI call Sign. In the event of multiple search commands (two or more simultaneous operations) the first established command post will use the KC3BFI call sign, subsequent commands will need to use the Comms Team Member's call sign for the designatior.

During Training and searches the following should be absolute minimum radio traffic from field teams:

1. Departure from base.

2. Initiation of task

3. Completion of task

4. Return to base

Additional routine traffic can include but is not limited to:

1. Passing of information regarding the task, such as clues discovered, obstacles that impact the task, or modification of task request

2. Weather or environmental observations, specifically things that may impact operations

3. Requests for clarification of task orders

4. Request for modification of task, such as request to investigate outside of defined search segment.

In the training environment, it is important to remember initiating and closing communications with "This is a Drill", this is critical when using a public repeater, less so when operating on simplex.

When communicating with the teams, follow these steps:

1. Acknowledge the call (i.e. "last station this is MIDSAR Command, send your traffic")

2. Read back their traffic and close with call sign and time (i.e. "Copy task 2 departing base, KC3BFI, 1321hrs")

3. If they make a correction, repeat the correction as in step 2

Emergency communications:

In the course of a search, or training event, there may become a situation that requires immediate action. These emergency communications occur when there is an immediate threat to life or property. This could be the result of injuries to a team member, subject, or a bystander, or a larger environmental event (such as a fire or flash flood threatening the team).

All emergency communications will be initiated with the pro-sign "Priority" or in extreme situations "Mayday". When either is called, Comms Team will initiate the following:

1. Acknowledge the team Calling and immediately secure the net and implement strict network protocols.

2. Send a runner to command informing them of a declared emergency. Provide as much detail as possible, if it's only "Task 2 has declared an emergency; we'll have full information ASAP."

3. Ascertain the nature of the emergency and what assistance the team needs to resolve the emergency.

   a. Medical conditions of any subject

   b. Nature of environmental emergency (i.e. flash flood in Schnitz Creek)

   c. Do you need medics or additional manpower

   d. Grid coordinates (UTM) of the emergency

4. Relay ALL information, including special requests (i.e. need medic with eqpt to treat allergic reaction) to command via runner.

5. Keep the frequency clear of extraneous non urgent traffic until resolved

6. STAY CALM NO MATTER WHAT; do not let the emotion show through your voice.

7. Relay response from command to field team.

8. When field team acknowledges resolution (i.e. medics have arrived and we have extracted the subject via Gator), acknowledge the team and return the radio net to former operations.

Sensitive Communications:

Occasionally some messages are of a nature it is not prudent for wide broadcast, such as the condition of the subject when found. Use a rule of thumb, if you don't want the message being about you said on

the news, then it is sensitive; remember some of this type traffic may fall under laws, such as the Health Care Privacy Act (HIPA).

These messages should always be sent via the most secure means practical. This would include, but not be limited to cell phone call. Occasionally these means do not function, that's why our primary communication is via HAM radio. When a field team has a find in a search they should immediately contact Command with minimal insensitive information as possible. I.e Command, task 2 we're with subject. Command should then ascertain if more secure means of communication is viable, "Task 2, command, are you able to call command at established cell phone number?" If no other means are available:

1. Request all stations secure their radio, treat the communications as an emergency communications; give them 1 minute to secure the individual radios.

2. While waiting send a runner to command informing them of the secure radio request.

3. Turn radio as low as possible, or use headphones, do NOT let others overhear the Command radio

4. Collect all pertinent information:

    a. Subject location and health

    b. Additional assets to aid the team

5. Maintain security until no further sensitive information is being relayed and then return net to normal operations.

Operational Security:

All team members are responsible for the Operational Security (OPSEC) of the communications and communications plan. Where possible, have the Text descriptor of the frequency displayed (i.e. MIDSAR, or LEB315) rather than the actual frequency (144.350 or 147.315). Release operational frequencies only to those who have a specific need to know. Remember all radio traffic is subject to monitoring and by FCC Law, must be unencrypted so only broadcast minimal information, and use the most secure means practical for previous discussed sensitive communications.

Frequency/ Repeater Selection:

When selecting frequencies and repeaters for communications plans, selections will be made in accordance with the Middle Creek Search & Rescue Suggested Operating Guidelines and Team Handbook Communications section, and Amateur Radio Operations best practice.

Appendix E: First on Search Scene Checklist.

☐ Establish/ Communicate Communications plan
☐ Establish/ Communicate Command Frequency

Setup Communications station

☐ Radio to monitor primary and alternate frequency with power source
☐ note tablet/ paper
☐ ICS Forms
☐ Weather form
☐ Communications check
☐ Establish net
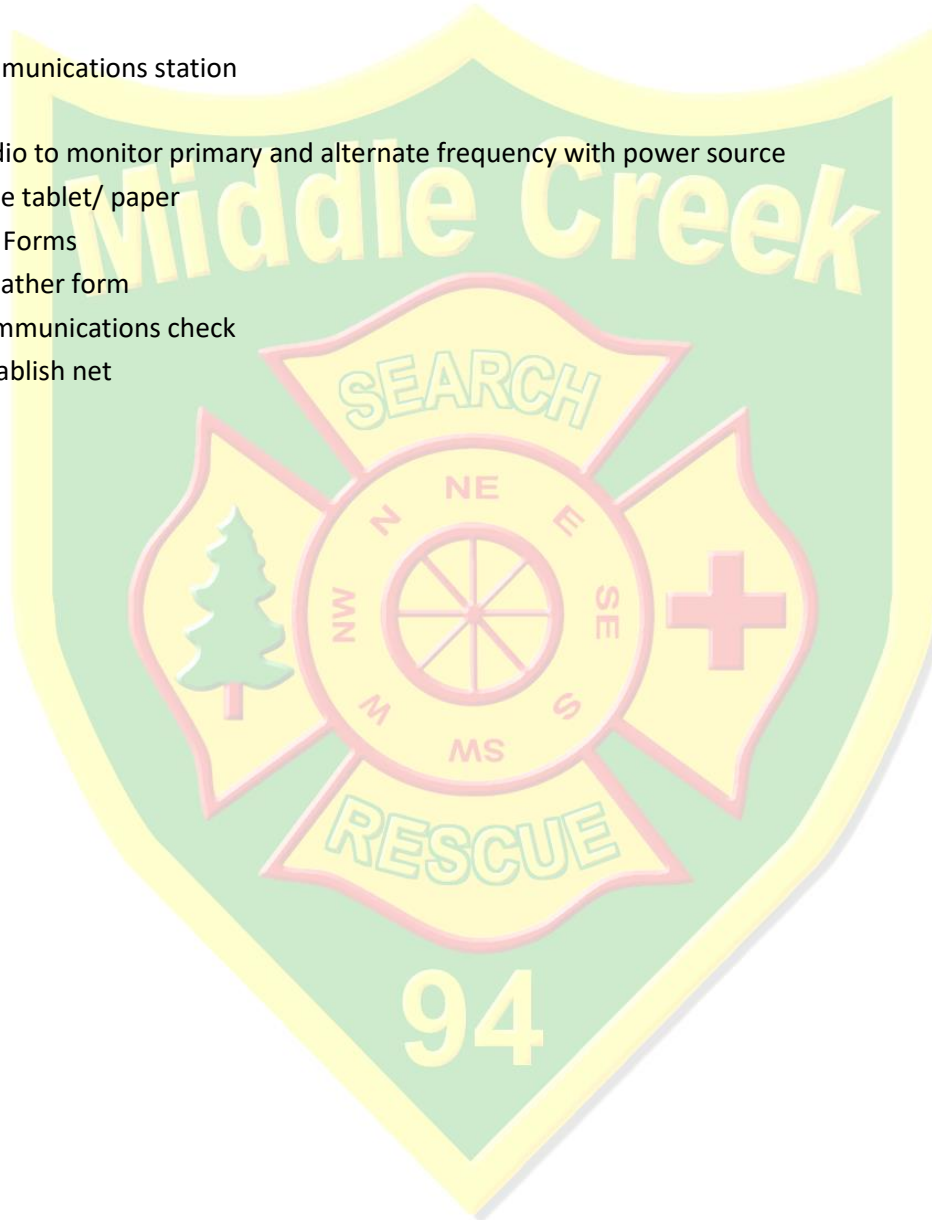
Glossary:

ACS: The Auxiliary Communications Service (ACS) is a program created by government's disaster or emergency management office to supplement its emergency communications with unpaid staff. Skilled and dedicated people, licensed and unlicensed, can be recruited to serve in one or more of four categories: administrative, management, technical, and operations.

ARES: The Amateur Radio Emergency Service® (ARES) consists of licensed amateurs who have voluntarily registered their qualifications and equipment, with their local ARES leadership, for communications duty in the public service when disaster strikes.

ARRL: The American Radio Relay League, ARRL is a noncommercial organization of radio amateurs. ARRL's underpinnings as Amateur Radio's witness, partner and forum are defined by five pillars: Public Service, Advocacy, Education, Technology, and Membership.

AUXCOM: AUXCOM is a Communication Course developed by the Department of Homeland Security Office of Emergency Communications that focuses on radio communication and provides a broad knowledge of the fundamental principles of communication systems used by emergency management agencies. It aligns with both ICS and NIMS. The course is designed to teach Volunteer Amateur Radio Communicators a number of essential topics that will assist them in working with the Communications Leader (COM-L) and the Communication Technical Lead (COM-T) during a disaster.

Emergency Communications: Communications of a manner of immediate threat to life or property. Also, an important service for public safety agencies (such as law enforcement, emergency medical services, and fire services) to be able to provide and maintain communications before, during, and after a disaster or emergency.

Grid Coordinates: A method of finding a specific location on a map. Ground Search and Rescue Teams (like MIDSAR) leverage the Universal Trans Metric (UTM) grid system invented by the military for its simplicity and accuracy.

ICS: The Incident Command System (*ICS*) is a management system designed to enable effective and efficient domestic incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure.

Net: See Radio Network (Net)

Prosign: Procedure words or prowords are words or phrases limited to radio telephone procedure used to facilitate communication by conveying information in a condensed standard verbal format.

> **Mayday:** distress signal signifying transmitting station is in immediate danger of loss of life.

> **Priority:** Precedence PRIORITY, Highest level or precedence, indicating immediate attention

RACES: Radio Amateur Civil Emergency Service (RACES) is a standby radio service provided for in Part 97.407 of the Federal Communications Commission (FCC) rules and regulations governing amateur radio in the United States.

Radio Network (Net): Nets operate more or less formally depending on their purpose and organization. Groups of nets may organize and operate in collaboration for a common purpose, such as to pass along emergency messages in time of disaster. One such system of nets is the National Traffic System (NTS), organized and operated by members of the American Radio Relay League (ARRL) to handle routine and emergency messages on a nationwide and local basis. In time of emergency a net can be open or closed. Closed nets have all traffic routed through Net control, Open nets, operators do not need permission to "Go Direct" and talk to other operators or tasks.

Radio Operator (OP): The individual on a search task assigned the responsibility of communicating with command on behalf of the task

Rally Point: Pre planned location to assemble for search call outs

Repeater: amateur radio repeater is an electronic device that receives a weak or low-level amateur radio signal and retransmits it at a higher level or higher power, so that the signal can cover longer distances without degradation.

SCTF-AWRG: The SCTF is a regional organization of 8 counties in South Central PA that provides a forum for public safety and public health agencies and organizations to coordinate and work together on common issues. Within the SCTF the Amateur Radio Working Group was formed under the Communications Subcommittee. Within the ARWG there is also the Hospital Emergency Amateur Radio Service (HEARS). The ARWG and HEARS provide direct support to the SCTF and, in the case of HEARS, direct support to regional hospitals as requested.

Sensitive Communications: Communications that are of a nature where disclosure can cause embarrassment, emotional response, or are of a private nature and shouldn't be discussed with a wide audience.

Severe Weather: Severe weather refers to any dangerous meteorological phenomena with the potential to cause damage, serious social disruption, or loss of human life. Types of severe weather phenomena vary, depending on the latitude, altitude, topography, and atmospheric conditions. Use the Skywarn reportable incidents to identify severe weather in our area.

SkyWarn: SKYWARN® is a volunteer program with nearly 290,000 trained severe weather spotters. These volunteers help keep their local communities safe by providing timely and accurate reports of severe weather to the National Weather Service. Traing and the program is maintained by NOAA's National Weather Service (NWS).