

Wyoming Public Safety Communications Interoperability

I. Introduction

First responders may rely on cooperation from neighboring jurisdictions or agencies during an emergency. Mutual aid is the voluntary sharing of personnel and resources to lend assistance across jurisdictional boundaries in response to an emergency that exceeds local resources, such as a disaster or a multiple alarm fire.

The public safety community relies heavily on radio communications. It connects responders to their dispatchers, field managers, each other, and — ultimately — to the public they serve. Radios provide dispatchers the ability to alert one or a group of responders of service calls, regardless of where the responder may be. It provides responders with a means of communicating their needs and actions, independent of fixed facilities, such as land-line telephones or even cell-phone towers, which can quickly become overloaded during a major incident. In the field, radios provide responders the ability to manage incident response, independent of location, using an effective communications plan. And, those responders recognize that radios provide the most vital tool for their own safety.

Mutual aid channels, interoperable channels, and common talkgroups have come to be recognized as the most valuable public safety radio resource because they are the means by which responders from different agencies and different public safety services can communicate and interoperate. Rarely does an incident of any magnitude occur in which a single agency is the sole service provider. Whether they are standby EMS providers, fire suppression crews during a barricaded suspect call, or the traffic control and evacuation personnel during an urban interface fire, public safety agencies need to interoperate in today's world of incident response.

No degree of interoperability is possible without common communications. This document provides guidelines on communication interoperability which public safety agencies in Wyoming may use for initiating and sustaining interoperable communications during any incident.

II. Authorization

Authority to use radio frequencies can come by one of two primary means: license and interagency agreement. Land mobile radio licensing for state and local public safety agencies is the responsibility of the Federal Communications Commission (FCC). Federal agencies rely on the National Telecommunications and Information Administration (NTIA) for frequency authorization.

Interagency agreements serve an important purpose in public safety radio communications.. When an agency licensed for a particular frequency allows another agency access to that frequency, a degree of communications interoperability is established where otherwise there may have been none. Such an agreement means that the licensing agency is agreeing to consider the other agency's units as its own for use of the frequency. Everyone is obligated by the terms of the license; the agreements themselves may further restrict use. It should be noted that agreements are generally for mobile use only — permanent base stations must be specifically listed with the FCC.

III. Priority Use Levels

Five priority use levels are established for communications on mutual aid and common frequencies. Higher priority traffic takes precedent over lower.

- 1. Immediate Peril - An immediate threat to human life exists.**
- 2. Disaster or Extreme Emergency - An imminent threat to human life or of large-scale property destruction exists.**
- 3. Routine Emergency - Distinguished from the above by scale or nearness of threat.**
- 4. Urgent Administrative and Itinerant.**
- 5. Training, Drills and Administrative**

IV. Dispatch Centers

Dispatch centers are vital to interoperable communications. In large scale incidents, dispatch is relied upon to assist the incident commander by contacting requested additional resources. As part of this resource request, the communications plan for the incident should be provided to any additional responders for contact with the incident commander or designee.

Dispatch centers are used to relay information between responders and may be contacted by radio users for reporting of incidents or other contacts. It is recommended all Wyoming dispatch centers monitor the local county CAT1 talkgroup, local regional MAT calling talkgroup and Wyoming Mutual Aid repeated channel for interoperable communication requests. Non-local public safety agencies may request contact with local agencies through the local dispatch center. Each Wyoming dispatch center will determine their policies and procedures for interoperable communications and may use this guide for making those determinations.

V. Radio Efficiency

To maintain good radio etiquette, operators should observe the following guidelines and rules:

- Restrict radio traffic to only what is necessary for the safe and efficient operation of the group. Communications equipment should only be used for official business or emergency communications.
- Know what you're going to say before you key the microphone. Keep transmissions as short as possible by being brief and to the point. Don't use big words when short ones will do. Leave out the "Ahs" and "Ohs."
- Begin and end each transmission with an identifier such as a name or a call which is understood by all radio operators in the group. Avoid the use of first names or CB-type handles.
- Listen before you begin your transmission, and always wait one or two seconds before you speak after keying the push to talk button.
- Avoid profanity and the use of vulgar language. Such transmissions are expressly forbidden by the FCC and NTIA in the Land Mobile Radio service.

- Remain calm and speak directly and clearly, using an even tone. Avoid shouting, which distorts the transmission and does not increase the range of your radio transmission. In response to stress or excitement, you may find yourself increasing your delivery speed. The advantages of a rapid delivery may be lost if the message has to be repeated.
- Pause your transmission every now and then. This practice ensures that the person on the other end is copying your transmission and also allows others to break in with more important information without walking over your transmission.
- Routinely don't read everything back because this practice doubles the use of air time. Instead say "Copy or affirmative" and stand by for the next transmission. Use "Say again" for information you didn't copy.
- Do not use the radio for private "chit-chat" or horseplay.
- Remember, the whole world is listening. Scanners abound. Make sure you want what you say to be public knowledge. Comments made on the radio should not be offensive, derogatory or in poor taste.

VI. Communications Order Model

To ensure effective understanding between persons communicating via radio equipment, the following five-step, message acknowledgement sequence is suggested. This standard method helps to ensure that messages are received and comprehended effectively, especially during emergency communications.

- The calling unit provides the name of the called unit, followed by its own. For example: "Fremont Dispatch, Game & Fish 45," where the game warden is trying to contact a local dispatch center.
- The called unit responds with the reverse ("Game & Fish 45, Fremont County").
- The calling unit transmits its message. ("Have a deputy sheriff contact me on 10CAT1.")
- If necessary, the called unit repeats it back as received. ("deputy contact GF45 on 10CAT1.")
- If the message was received correctly, the calling unit responds with an "Affirmative" acknowledgement. Otherwise, it responds "Negative" and repeats the message.

VII. Plain Language/Clear Text

A key component of interoperable communications is the ability to communicate using plain language. What is it? Plain Language is defined as: "communication that can be understood by the intended audience and meets the purpose of the communicator." The use of plain language in daily operations enhances the responder's ability to support a mutual aid event.

The use of plain language in emergency management and incident response:

- Is a matter of safety.
- Facilitates interoperability across agencies/organizations, jurisdictions and disciplines.
- Ensures that information dissemination is timely, clear, acknowledged, and understood by all intended recipients.

The use of codes — particularly agency-specific and ten codes — is a barrier when it comes to transmitting information. While codes may ideally reduce the length of transmissions, in practice the time gained is lost in repeated messages and explanations of unfamiliar terms. Codes or terms used by one jurisdiction or discipline may be incompatible with those used by neighboring agencies. Communications during mutual aid events should be in plain language to avoid miscommunication and confusion, improve interoperability, and enhance public safety.

The use of plain language also is consistent with the National Incident Management System (NIMS) Sept. 10, 2009 alert that states: “The use of plain language in an emergency response is a matter of public safety, especially the safety of first responders and those affected by the incident.”

Plain language simplifies the communication process and reduces the chance of error during an emergency situation. For these reasons, plain language and clear text are strongly encouraged on all mutual aid and common channels.

VIII. Incident Communications Plans

Communications is the central nervous system of all-hazards emergency response operations. The use of a common communications plan is essential for ensuring that responders can communicate with one another during an incident. Communication equipment, procedures, and systems must be able to operate among multiple jurisdictions and disciplines — including fire, law enforcement, and emergency medical services (EMS). Within Wyoming, mutual aid and common frequencies may be tailored for specific situations.

IX. Communications in the ICS Structure

The Communications Unit is often established early in multi-agency and large-scale responses managed under ICS to support an integration effort. This practice is intended to bring all communications functions close to incident command rather than having them managed far away from vital operational concerns.

Structurally, the Communications Unit operates in the Logistics Section, under the Service Branch. It is managed by the Communications Leader (COML). Dispatchers (radio operators) and communications technicians serving the incident also are part of the Unit. Under COML leadership, the Communications Unit is responsible for integrating wired and wireless communications as well as for ensuring that operations are supported by communications wherever necessary. The COML develops the Incident Radio Communications Plan, ICS Form 205.

X. Radio Communications Interoperability

There are three primary communication systems operating in Wyoming: WyoLink, Conventional VHF, and Conventional 800 MHz. Through console patches or gateways all three systems could be patched together. There are problems associated with patches and should be used as the last choice for interoperability.

With conventional VHF there are four primary means for interoperability: swap radios, shared channels, Wyoming Mutual Aid Channel and the National Public Safety Interoperable Channels.

A. WyoLink – Agencies using WyoLink have two groups of talkgroups which may be used for interoperable communications, County Agency Talkgroups (CAT) and Multiple Agency Talkgroups (MAT).

1. CAT Talkgroups:

Each county has four interoperable talkgroups which WyoLink user may program into their agency radios. The CAT talkgroups are listed by the County two digit number, “CAT” and numbered 1 thru 4. Example: 14CAT1, 14CAT2, 14CAT3 and 14CAT4. These talkgroups are designated for use when an incident or exercise involves multiple agencies or disciplines from within the county. If the incident could expand beyond the local resources and responders from other counties, state or Federal, the regional MAT talkgroups should be used for the incident communications.

The ##CAT1 talkgroup is considered to be a calling or command talkgroup and the ##CAT2 through ##CAT4 talkgroups are considered to be tactical talkgroups. The ##CAT1 talkgroup may be used to contact the local dispatch center(s) or may be used by Incident Command for incident control. Each dispatch center in the county is asked to monitor the ##CAT1 talkgroup. Some neighboring counties may program their radios with the neighboring county CAT talkgroups and some State or Federal WyoLink users may have programmed their radios with the CAT talkgroups.

The ##CAT2-4 are tactical talkgroups which may be designated by Incident Command to enhance incident communications.

2. MAT Talkgroups:

Each of the seven Homeland Security Regional Response areas has four interoperable MAT (MAT 1-7) talkgroups and there are four additional MAT talkgroups (MATO) available, if needed. These talkgroups are designated for use when an incident or exercise involves multiple agencies or disciplines from multiple counties or State and/or Federal resources. The MAT talkgroups may also be used if there are multiple incidents within a county.

The MAT# talkgroup is considered to be a calling or command talkgroup and the MAT#A, MAT#B and MAT#C talkgroups are considered to be tactical talkgroups. The MAT# talkgroup may be used to contact the local dispatch center(s) or may be used by Incident Command for incident control. Each dispatch center in the county is asked to monitor the MAT# talkgroup for the local Regional Response Region. It is recommended all WyoLink users have all of the MAT talkgroups programmed into the agency radios. The MAT talkgroups will provide the interoperable communications between local, state and Federal WyoLink users.

The MAT#A, MAT#B, and MAT#C are tactical talkgroups which may be designated by Incident Command to enhance incident communications.

B. Swap Radios – Agencies provide cache radios to incoming responders. The primary agency must keep records of the cache radio inventory and who received and returned the radios.

C. Shared Channels – Agencies agree to allow other agencies to program their channel(s) into the radios and when needed, the second agency can use the shared channels for interoperable communications with the primary agency.

D. Wyoming Mutual Aid – This channel is licensed by the State of Wyoming with the Wyoming Highway Patrol as the administrative approval agency. Mutual Aid usage is for public safety agencies and provides conventional interoperable communications between public safety agencies at the local, state and Federal levels. The Wyoming Highway Patrol will make the determination on approval or non-approval of the agency application. A Wyoming Mutual Aid use application is available on the WyoLink website - <http://wyolink.wyoming.gov/> The Wyoming Mutual Aid Application is on the WyoLink membership page. If the agency is approved for the Mutual Aid channel, an agreement will be completed and must be signed by the agency before use is authorized.

Wyoming Mutual Aid can be used in a direct (radio to radio) mode or repeated mode. The repeated mode is monitored at the Wyoming Highway Patrol Dispatch. Local dispatch centers may receive permission to use and monitor the repeated Wyoming Mutual Aid channel. A map of the Wyoming Mutual Aid sites is available on the WyoLink Website.

Mutual Aid Usage Rules:

1. Maintain and repair Agency radio equipment in accordance with appropriate FCC requirements.
2. Use of State Mutual Aid channels in large-scale operations will be subject to and may be controlled by the Incident Command System (ICS) commander or his designated representative.
3. Local routine use of the Mutual Aid channels by a single agency is not appropriate and is discouraged.
4. No authorization will be sought for FCC licenses in the name of the local Agency on State channels.
5. Use of State frequencies is not authorized outside of the State of Wyoming geographic boundaries.
6. Comply with communications directives issued by WYDOT's Highway Patrol Dispatch as necessary for the shared use of Mutual Aid channels.

E. National Public Safety Interoperable Channels - The National Public Safety Interoperable Channels include the VCALL10, VTAC11-14, VTAC17, VTAC33-38, VFIRE21, VMED28 and VLAW31 channels. The State of Wyoming has licensed the VCALL and VTAC channels on a statewide basis. The Wyoming Fire Marshal's Office has licensed the VFIRE21, VFIRE22 and VFIRE23 channels, the Wyoming Hospital Association has licensed the VMED28 channel, and WYDOT has licensed the VLAW31 channel.

The VCALL10, VTAC11, VTAC12, VTAC13, VTAC14, VFIRE21, VFIRE22, VFIRE23, VMED28 and VLAW31 are simplex conventional channels and may not be repeated. The VTAC17, VTAC33, VTAC34, VTAC35, VTAC36, VTAC37 and VTAC38 may be used with

portable repeaters to expand coverage. The primary repeated VTAC channels will be the VTAC36 and VTAC37. The secondary repeated VTAC channels will be the VTAC17, VTAC33 and VTAC34. The VTAC35 and VTAC38 will require a combiner in the antenna system in order to operate. VMED28 has been designated as an air to ground channel for medical helicopters which do not have Wyoming Mutual Aid channels programmed or WyoLink capable radios.

The National Public Safety Interoperable Channels (Inter-Op) may be used to provide conventional interoperable communications between local, state and Federal agencies or disciplines. The Inter-Op channels may also be used to provide additional conventional radio resources for large scale incidents when local communication resources cannot meet the requested communication needs.

XI. Recommended Radio Programming

The Public Safety Communications Commission recommends all radio users program their agency radios with Wyoming Mutual Aid – Direct, Repeated Wyoming Mutual Aid (tower(s) serving local area), National Public Safety Interoperable channels (VCALL, VTAC and VFIRE, VMED, or VLAW).

It is recommended all WyoLink capable radios are programmed with the local CAT and MAT talkgroups. The neighboring county CAT talkgroups and all MAT talkgroups may be programmed into the radios. See the attached Wyoming Interoperability Reference Chart for interoperable talkgroup and conventional channel listing.

XII. Interoperability Crosswalk

The Public Safety Communication Commission recommends protocols for developing interoperable communications between local, state and federal agencies. The attached Interoperability Matrix provides a reference of the communications interoperability available in Wyoming using conventional channels and WyoLink talkgroups.

XIII. Additional Reference Documents

This document also includes three reference attachments: Wyoming Interoperability Reference Chart; Wyoming Interoperable Communications Resource – ICS 217A and Interoperability Matrix.