Mosier Fire & Emergency Services Standard Operating Procedure Communications

1. **Objectives**

   This Operating Procedure describes the use, maintenance and procedures for communications in emergency and non-emergency operations

2. **Definitions**

   Repeater-based channel - signal goes from a radio to one or more repeaters before being received. This allows for a boost to the signal strength, which increases range of reception, but it is possible for portable and mobile radios to be far enough that they cannot "hit" the repeater even though they may receive loud and clear

   > In Mosier, our two repeaters are located on the top of the hill east of town, about one-quarter mile from the Pioneer Cemetery. The range of our hand-held radios is sufficient to reach the repeaters throughout the Fire District, with notable "radio shadow" areas east of the Rowena overlook, State Road uphill from Evergreen Terrace and eastward including Dell Vista, and near the top of Dry Creek Road

   > Repeaters utilize two separate frequencies: your radio will transmit to the repeater on one frequency and receive on the second. Keep this in mind if you are a long way from the repeater – even if you are standing next to another radio, the two radios cannot communicate if out of range of the repeater

   > Care must be taken on repeater based channels to pause for two seconds AFTER pressing the "talk" button on the radio prior to speaking, in order for the repeater to begin retransmitting

   Line of sight - signal goes directly between two radios

   Command - the incident commander

   Duty Officer - a person pre-allocated to be incident commander for a span of time. Generally this will be the Chief or a Chief selected delegate.

   Frequency - a numerical description of a chunk of spectrum. All frequencies in this SOP are in MegaHertz (MHz)

   PL Tone – abbreviation of "private line": sub-audible tones which effectively create sub-channels on a frequency. In order to receive a "private line" transmission, the receiving radio must be programmed with the appropriate tones. By this means, several different groups can share a frequency, but each group will not hear the others' radio traffic because they are not decoding the PL tones. These are similar to, but not the same as the "code tones" which activate our pagers. In Mosier we use PL tones to minimize the chance of interference,

since the FCC often licenses the same frequencies to users just out of range of each other

Squelch - a setting on a radio or pager to be silent unless some condition is met such as a PL Tone being transmitted

Radio Channels (refer to radio manuals for a full list of channels)

Central - dispatch channel, via repeater (your radio receives on 156.165MHz, transmits on 159.150MHz, with PL tones set to 110.9MHz). Both frequencies are narrow band

Working - Mosier internal communication channel, also narrow-band repeater-based. Your radio receives on 154.445MHz, transmits on 159.1275MHz, with PL tones at 146.2MHz

Mosier Tactical ("MOTAC"), a line-of-sight frequency used when a second incident frequency is needed, or when operating out of range of our repeaters. Mosier Tactical occupies 154.415MHz narrow band, with no PL tones

Tac 2 - Gorge wide line-of-sight tactical channel. Please note that for the moment there are two versions of Tac Two: "HR Tac Two" which is both narrow-band and coded with PL tones, and "MCFR Tac Two" or simply "TAC TWO" which is wide band and not coded with PL tones, and is set to be phased out by 2013. In Mosier we currently default to the non-PL'd "TAC TWO", although both versions are located in most radios, and Hood River Valley departments still have the old version available

HR Tac 6 - Also referred to as "Air-to-Ground", for use when communicating with Life Flight. This is a line-of-sight frequency with limited range

HR DISPATCH (aka "HR AMBUL" on radios with a shorter display) - Hood River Dispatch channel. In the Hood River Valley, this is a simulcast repeater-based channel called Channel One. In Mosier, we are out of range of the repeaters, so we use what's called the "talk-around" mode, by which we send and receive on their "Receive" frequency. This is so we can communicate with arriving ambulances and other units here in Mosier. When talking on HR Dispatch, you may identify yourself as being '833 on Channel One', but remember that you are not actually on their repeater

3.   **Overview**

Mosier Fire and EMS uses a combination of portable radios, automated dialers and pagers for emergency communication

Dependable, accurate communication is key to safe and effective operations

In emergency situations remember:

Attention is expensive - use the appropriate device and channel

Keep communication on the Central channel to the minimum required for safety and effectiveness. In general, Central, officers and first-responding units are the only people transmitting on this channel

Face to face communication is best

Use clear concise language

Pass on all relevant information

If instructions are unclear, request clarification

Acknowledge and restate instructions

4.   Procedures

General Radio Communications

Organize your thoughts before trying to speak

Speak professionally and remember to not broadcast private information

Make sure the channel is clear and that that no other devices will create feedback before you key the microphone

When using a repeater-based channel, always wait 2 seconds after keying the microphone before you start speaking

Liaise with other responders in apparatus or on scene to ensure that all radio channels in use are being monitored

Call signs

All Mosier responders have a personal call sign consisting of a three digit number starting with 8: "801" "815"

All apparatus have a call sign starting with the apparatus type followed by a number starting with 8: "Brush 82" "Engine 84" "Truck 86"

Some roles have a specific call signs: "Command", "Staging", "Safety"

When initiating conversations use call signs

Use the format: "You, this is Me" - eg: "Command, this is 835"

Always use the highest level of call sign that refers to yourself - role then apparatus then personal call sign

All communications with Central must use call signs

On the Central channel, always refer to yourself by numeric call sign (unless you have a higher role such as "Staging")

On the Working channel, always refer to yourself by first name, not numeric call sign, unless you have a higher role such as "Staging"

Tone Outs

A Tone Out is a series of modulated tones used to alert responders to a forth coming dispatch from Central

Tone Outs are initiated on the Central channel. The automated dialer may also be used as an adjunct to the Tone Out

After a tone-out is initiated, the duty officer should acknowledge the tone-out via radio, move all inter-department communications to the working channel and assume Command

If the duty officer does not respond within 2 minutes, any other responder may assume the role of duty officer and perform the above procedure

All responders then check in on the Working channel with Command and register their intent to respond

If you have a radio, check in via radio on working: "Command, this is Ron responding to city station"

If you have a telephone, call (866) 537 2392 to check in via the automated telephone response system

Contacting Central

Communication with Central should be kept to the minimum and only include information that is pertinent to Central. Generally there is no reason for responders other than Command and Apparatus Officers to communicate with Central

Command should inform Central of the following events:

Acknowledging tone outs

Taking command

Passing command

Status updates (initial assessment, changing operational mode, standing down etc)

Requests for aid

Apparatus officers should inform central of the following events:

Apparatus responding with number of responders: "Brush 82 responding with three"

Apparatus arrival on scene: "Engine 84 on scene"

Apparatus out of service

Apparatus returned to station or quarters

Apparatus returned to service

Contacting other departments

It is useful to communicate relevant data to responding personnel from other departments. Be aware that call sign usage may be problematic.

When talking with the inbound Hood River medic:

Change to the HR Dispatch channel

Make contact with the inbound unit by a generic call sign and identifying yourself as an on-scene unit: "Hood river medic, this is Mosier 815 on scene" (wait for response before continuing)

When talking with an inbound MCFR unit:

Change to Central

Make contact with the inbound unit by a generic call sign and identifying yourself as an on-scene unit: "Micfor Medic, this is Mosier Command on scene." (wait for response before continuing)

Emergency Traffic

The words "Emergency Traffic" is the communications signal used to clear the air for very important information, i.e. Team member injury, imminent danger, etc.

All radio communications must immediately cease, allowing the Emergency Traffic to have priority

When a responder has declared an emergency traffic message, that person shall use clear language to identify the type of emergency, change in conditions, or tactical operations. The member who has declared the emergency traffic message shall conclude it by transmitting the statement, "All clear, resume radio traffic."

Equipment Use

Motorola Pagers: Mosier currently uses two models, Minitor IV and Minitor V. By the end of 2012 we should have phased out all Minitor IV's

If you have been issued a Motorola pager then it should be on or about your person at all times

Motorola pagers should be kept on the trickle charger whenever possible

Pager battery replacement and rotation will vary by model. Refer to specific instructions for your pager

Motorola Minitor V

Minitor V pagers receive two channels, Central and Working, with four optional settings: A, B, C and D.

"**A**" ("Monitor Frequency One") continuously monitors the Central channel only and will receive all traffic

"**B**" ("Selective Call, Frequency One") is mute unless and until the pager receives a Tone Out on the Central channel

"**C**" ("Priority Scan") continuously scans both the Central and the Working channels. When receiving on the Working channel, the pager "looks back" to the Central channel once every two seconds, resulting in an intermittent click. **Users of the Minitor V should use the "C" setting following a Tone Out**

"**D**" ("Selective Call, Frequency One") Central channel only, stays mute until Tone Out, and alerts silently; this setting is useful if you are in a movie theater, for instance

Motorola Minitor IV

Motorola Minitor IV Pagers receive only one channel, Central, with four settings: A , B, C and D

"**A**" continuously monitors and will therefore pick up any traffic on Central

"**B**" is mute unless and until the pager receives a Tone Out

"**C**" also monitors the Central channel

"**D**" stays mute until Tone Out, and alerts silently; this setting is useful if you are in a movie theater, for instance.

Icom f50v Pager/Radios

Mosier uses two versions of the Icom f50v, running software developed in-house. The software version displays on startup of

the radio, along with the name of the person to whom the radio is assigned:

version 4.[x] is primarily a pager, with a limited bank of two-way radio channels. Scanning is not enabled.

version 3.[x] is both a pager and a full-suite scanning two-way radio, with 255 channels in five separate banks or "zones".

Because of the complexity of operations, please refer to separate instruction manuals for the Icom f50v

Two Way Radios

Radios have multiple channels and modes that will vary by need

When a radio is issued to you all channels and modes will be explained to you. Ensure that you understand what is available to you.

Battery-operated radios are issued with at least one spare battery. If possible, you should use each battery until it is completely drained; for some radios this may take several months of use.

Radio Batteries should be charged for a minimum of 12 hours after being drained

Vehicle Radios

There are several makes and models in use in Mosier Fire apparatus. In general, the dash-mounted radios have a limited channel selection optimized for use in our District.

Many features, such as scanning, have been disabled in dash-mounted radios because the controls for these features can accidentally cause serious problems, such as erasing channels from the radio. If you press any of the function buttons, they should simply beep with no change to the radio. Notify your Engine Captain or Commanding officer if you are able to change functions on s dash-mounted radio.

Portable Radios (walkie-talkies)

A spare portable radio is located in each apparatus so that officers have dedicated radios for both Central and Working channels

Captains are responsible for ensuring proper rotation of batteries in vehicle-assigned portables