Information Sheet #1

INTRODUCTION

As of 2006, the California Department of Forestry and Fire Protection had over 7,000 individual radios in its VHF radio system with a value placed at over 10 million dollars. The increasing potential of having all of them in use at the same time makes it imperative that each individual user be educated in the rules, regulations, and policy of their use.

The duty of each CAL FIRE employee is to exercise proper and judicious use of the communications network in order for the system to be used to its fullest potential. Any misuse of the system will immediately infringe on the rights of other users and will, in fact, ***hamper emergency operations***.

Communications on the fireline comes in many forms: hand signals; use of runners; mirrors; whistles or air horns; face to face; transmitted voice; and written messages. The best and most reliable form of communication is face to face, with written notes to record what was said.

It should go without saying, but fire department radios are "***For Official Use Only***" and even if you have official business emergency traffic has priority.

Education of the user is the primary means that can be used to prevent or sometimes correct improper use of the communications network. This text has been designed to instruct you in the basic fundamentals of the CAL FIRE Telecommunications system.

RADIO EQUIPMENT

There are three types of radio equipment that firefighters must be familiar with: The base station radio, portable radio, and mobile relay. Dispatchers have the radio console they use.

Base Stations

The base radio is like the one in the fire station. It is fixed to a location - not portable. It is usually capable of transmitting and receiving on more than one channel. This radio normally has an alerting device attached to it to alert the firefighters. Command Centers normally have many base stations (called control stations) in the radio vault that are wired to the consoles.

Mobile Relays

Mobile relays (repeaters) are just what the name implies: they relay transmissions from mobile radios. There sole purpose is to extend the range of the mobile radio (or portable radio) over mountains to gain greater distances. Most repeaters are located on high mountain peaks or on tall water tanks or buildings.

Portable radios

Portable radios used by CAL FIRE are 500 channel programmable and have all frequencies that CAL FIRE, and the federal wildland fire agencies use in California as well as a host of local government frequencies. They are 5 watts in power, handheld and are an excellent tool for fireground use as well as capable of operating thru repeaters.

RADIO NETS

Under the Incident Command System, there are specific radio nets for certain functions. They are:

- Command
- Tactical
- Support
- Air-to-Air
- Air-to-Ground
- Logistics

The Command Net is used to communicate between the various command and general staff functions down to the Division/Group Supervisor and including the ECC. This is an exclusive channel for command and control communications. It is not for tactical operations.

The tactical nets are used for tactical communications at the Division or Branch level or on the simple Initial Attack incident. The “Tac Net” may be established around agencies, geographical areas or specific functions. The specific frequencies will be listed in the Incident Action Plan (IAP) for larger incidents.

The support net is used for establishing status on an incident or for support of that incident. It can also be called a “Logistics” net on some incidents.

The air-to-ground net is used for communications between the air and the ground. This net is critical when there are many tactical nets in use. It is impossible for Air Attack to monitor ALL tactical nets on a fire so this net is perfect for that use. It is NOT to be used as a ground tactical net between ground units.

Air-to-Air nets are used for aircraft only and are the link between the air tankers, copters and the air tactical officer. This net should never be used by ground forces.

USING THE MICROPHONE

There are two common types of microphones used by the Department. One is the hand held microphone like the ones found in most engines (attachable microphone for Handi-Talkie) and the other is the console microphone like the one used in the Emergency Command Center

(ECC) and or fire station.

The hand held microphone should be held 1 **INCH FROM THE MOUTH** at a slight angle. The console microphone should be from 4 to 12 inches from the mouth. If they are placed closer, distortion will result. If too far away, voice level will drop off and background noises will cover up the sound, (i.e., siren, pump noise, engine noise). Any form of excitement or shouting will distort your voice and consequently, you will not be understood.

As you prepare to transmit a message, think about what you need to say ***before*** you push the transmit button. By thinking about what needs to be said, there will be less "aha" and "umms" before you say something.

Be courteous, answer calls as quickly as possible, and never use profanity on the radio. Not only will your agency come down on you, it is against the law.

Be brief and to the point. The radio channel may be clear now, but once fire activity gets heavy, the radio system is the first to be overloaded.

Some key points to remember when using the radio:

- Wait until the person using the radio is finished before you transmit your message.
- When initiating a call, say the station name or unit number of the person you are calling, followed by your station name or unit number.
- Wait a full second after you press the key before you speak.
- Have pencil and paper ready to record information.
- The person who initiates the call closes with the proper radio identification.

Remember that panic and other emotional states are contagious. You should try to **REMAIN CALM ON THE RADIO AT ALL TIMES** so you do not cause problems by exciting other people.

MOBILE RELAYS

Mobile relays (commonly called repeaters) are those radios that are situated on mountaintops and used to extend the range of a mobile or base radio.

DIRECT

When you transmit on "direct" (car-to-car), you are transmitting directly on the **receive** frequency and your signal does not go through a mobile relay. This limits your signal to **line of sight** and radios on the other side of mountains or other barriers will not usually receive your signal. Do not get the impression, however, that you have a close range, private channel. If you are in a large valley or on a ridge or mountaintop, your signal will go all the way **to the horizon** and any radio that receives the frequency you are on (such as local net) that is between you and the horizon will probably hear your traffic.

MESSAGE FORMULATION

Clear and correct message formation is paramount in getting your point across over the air. Let's now study how to build and communicate a concise message.

There is only one correct way to initiate a call: Announce the **name of the station** (or the unit number) **of the place you are calling first,** followed by **your station name or unit number.**

Example: Morgan Hill wants to call Belmont - **BELMONT, MORGAN HILL**.

Yreka wants to call Engine 2669 - **ENGINE TWENTY-SIX SIXTY-NINE, YREKA**.

Prevention 4521 wants to call Chief 4500 - **CHIEF FORTY-FIVE HUNDRED, PREVENTION FORTY-FIVE TWENTY-ONE**.

Preceding each four-digit number you will notice the radio identification plan indicator. (i.e., Engine, Chief, Battalion - See Appendix 3). CAL FIRE policy dictates all radio numbers will be preceded with its appropriate radio identification plan indicator.

When answering a call, answer with your station name or unit number, do not answer GO AHEAD. Do not answer with the name or number of the station calling you. Do not answer with the FCC call sign. If two or more stations or units call you at the same time, answer in the same way you would initiate a call, designating the station or unit you wish to answer.

Example: You are Castle Rock and Morgan Hill has called you. You answer: **CASTLE ROCK**.

You are Engine 2669 and both Hornbrook and Yreka have called you. You want to answer Yreka first, your answer: **YREKA, ENGINE TWENTY - SIX SIXTY-NINE**.

STRUCTURING MESSAGES

How you structure your message has a great deal to do with whether or not it is understood. Remember that the other party cannot see what you see. It is important that you construct your word pictures carefully. Questions should be asked as questions. A common error is to make a statement that the receiver must confirm or deny.

It is the policy of CAL FIRE to use “Clear Text”. “Clear Text” used by this Department will be defined as **specific standardized** words and phrases that are understood by **other fire service agencies with which we have contact, as well as CAL FIRE**. CAL FIRE policy

states that **only** "Clear Text" will be used in structuring radio messages and "Clear Text" words and phrases will be used at all times on CAL FIRE airways.

Messages should be short, preferably less than 30 seconds long. If your message is longer, consider all alternate methods to sending it by radio, (i.e., telephone, note, electronic mail, etc.).

CAL FIRE policy requires you to break transmission every 30 seconds and wait **NO LESS THAN 10 SECONDS** before continuing. Remember, the primary use of the CAL FIRE radio system is for emergency use and such traffic will always take priority!

Breaking a message is done by stopping the message at a convenient point, pronouncing the word "**BREAK**," and releasing the transmit button. After a DELAY OF NO LESS THAN 10 SECONDS, you can continue with the next 30 seconds (or less) of your message. This allows time for someone to get an emergency message through without a lengthy delay.

ACKNOWLEDGING MESSAGES RECEIVED

The best way to acknowledge a message is to identify the originator of the message and enough of the text of the message to let the caller know that you heard them and understood the message. This is done by the receiver repeating back the message to the caller.

Example: Engine 1669 responds to a fire. The whole message and response, if properly given would be: **MORGAN HILL ENGINE SIXTEEN/SIXTY NINE, RESPONDING.**

ENGINE SIXTEEN/SIXTY NINE, RESPONDING, FIFTEEN/FORTY-ONE HOURS.

Closure: **ENGINE SIXTEEN/SIXTY-NINE**. (Note: Engine 1669, the originator, closes the net)

It is very necessary to avoid the use of pleasantries such as: please, thank you, conversational use of first names, and the like for they waste air time and result in unprofessional radio use. However, this does **not** mean that the user of the radio should be rude. At times it may be necessary to use pleasantries to calm an excited firefighter for example.

Remember that we are one of the largest fire protection organizations in the world and we should sound professional in our radio usage. The Federal Communications Commission, other agencies and the public monitor us. They all expect us to sound professional; keep messages brief and to the point. You will find that there is more airtime available when these standards are followed.

Lastly, the person who **originates the call** closes the net. This eliminates confusion and lets others know the net is clear for other use.

RULES OF RADIO USE

The rules of radio use are few and easy to follow. Adhering to these rules will make both routine and emergency air time more available to all users.

1. Emergency traffic **always** has priority over routine traffic. Routine traffic should cease until the termination of the emergency.

2. **RADIO TRAFFIC PRIORITY WILL BE OBSERVED IN THE FOLLOWING ORDER:**

   a. Injury, life hazard, medical aid or the well being of any person.

   b. **First** report of a **new** emergency.

   c. Initial attack dispatch to the new emergency.

   d. Routine traffic

3. **Think before pushing the button**. When using the radio, it must be remembered that every message put on the air is received by many people. It is the responsibility of each person using the radio to conduct his or her operations in compliance with the license authorization, which clearly states that such use is primarily for emergency operations: Other transmissions are secondary and must be held to a minimum. Plan your message in advance to save airtime.

4. Check carefully before going on the air, to be sure it is not already in use.

5. Messages should be brief and to the point.

6. “Clear Text” must be used. See “Clear Text” phrases (Appendix C-1 in the Radio Use Program Text) and the International Phonetic Alphabet (Appendix D-1 in the Radio Use Program Text). Remember, “Clear Text” must always be used in its **entirety**, avoid using substitutions or partial phrases or words.

7. CAL FIRE policy states the words “emergency traffic” will be used on CAL FIRE airways.

24-HOUR TIME

CAL FIRE radio operators use the same 24-hour clock designations as does the military and other organizations. This system eliminates confusion about A.M. and P.M. times. Instead of 1 P.M., it is “thirteen hundred”.

TYPES OF MESSAGES

Message and transmission definitions:

1. **Routine traffic** – Resource status, non-emergency message.
2. **Priority traffic** – Non-emergency urgent message having precedence over routine traffic.
3. **Emergency traffic** – You or your crew are in peril.
4. **New incident** – Discovery of new incident en-route or walk in report.

CAL FIRE CLEAR TEXT WORDS AND PHRASES

Words and Phrases	Application
Unreadable	Used when signal received is not clear. In most cases, try to add the specific trouble. Example: “Unreadable, background noise.”
Loud and Clear	Self explanatory
Stop Transmitting	Self explanatory
Copy, copies	Used to acknowledge message received. Unit radio identifier must also be used. Example: “Engine 2675, copies.”
Affirmative	Yes
Negative	No
Respond, responding	Used during dispatch – proceed to or proceeding to an incident. Example: “Engine 1476, respond….” or “St. Helena, Engine 1476 responding.”
Enroute	Normally used by administrative or staff personnel to designate destinations. Enroute is not a substitute for responding. Example: “Redding, Chief 2400 enroute Northern Operations Center.”
In-quarters, with station name or number	Used to indicate that a unit is in a station. Example: “Morgan Hill, Engine 1677 in quarters, Sunol.”
Uncovered	Indicates a unit in not in service, because there are no personnel to operate it.

Out-of service	Indicates a unit is mechanically out of service. Example: “Perris, Transport 3141, out-of-service.” Note, when repairs have been completed the following phrase should be used: “Perris, Transport 3141, back in service, available.”
In-Service	This means that the unit is operating, not in response to a dispatch. Example: “Fortuna, Engine 1283, in-service, LE 38 inspection.”
Repeat	Self-explanatory
Weather	Self-explanatory
Return to _____	Normally used by ECC to direct units that are available to a station or other location.
What is your location?	Self-explanatory
Call _____ by phone	Self-explanatory
Disregard last message	Self-explanatory
Stand-by	Self-explanatory
Vehicle registration check	Self-explanatory
Is _____ available for a phone call?	Self-explanatory
At scene	Used when units arrive at the scene of an incident. Example: “Perris, Engine 3183, at scene.”
Available assignment	Used when a unit is ready for a new or can return to quarters. The ECC will give the unit a new assignment or direct it to return to quarters. Example: “San Luis, Cuesta Crew 2 available.” “Cuesta Crew 2 return to Cuesta.”
Available at scene	Used when a unit is still committed to an incident, but could be dispatched to a new

	emergency if needed.
Available at residence	Used by administrative or staff personnel to Indicate they are available and on-call at their Residence.
Can handle	Used with the amount of equipment needed to handle the incident. Example: “Susanville, Battalion 2212, can handle with units now at scene.”
Burning operation	Self-explanatory
Report on conditions	Self-explanatory
Fire under control	Self-explanatory
Emergency traffic only	Radio users will confine all radio transmissions to an emergency in progress or a new incident. Radio traffic which includes status information such as, responding, reports on conditions, at scene and available will not be authorized during this period.
Emergency traffic	Term used to gain control of radio frequency to report an emergency. All other radio users will refrain from using that frequency until cleared by ECC.
Resume normal traffic	Self-explanatory.

PHONETIC ALPHABET AND NUMERICAL PRONUNCIATIONS

Due to interference or a poor signal, it may be necessary at times to use a name for the letter in order to complete the transmission. Under ordinary circumstances, phonetic spelling of a full name will not be necessary.

A – Alfa	J- Juliet	S- Sierra
B – Bravo	K – Kilo	T – Tango
C- Charlie	L – Lima	U – Uniform
D – Delta	M – Mike	V – Victor
E – Echo	N – November	W – Whiskey
F – Foxtrot	O – Oscar	X – X-Ray
G – Golf	P – Papa	Y – Yankee
H – Hotel	Q – Quebec	Z – Zulu
I – India	R – Romeo	

Transmit numbers singly and in groups. Give each number individually and then repeat the whole, grouping them into two's and three's. Use the standard numerical pronunciation as follows:

1 – Won	6 – Siks
2 – Too	7 – Sev- ven
3 – Th-r-ee	8 – Ate
4 – Fo-wer	9 – Nine-er
5 – Fie-yiv	0 – Zero (never say "Owe")