



Fire Protection Training

Procedures Handbook 4300

STATION OPERATIONS

TOPIC: INTRODUCTION TO RADIO COMMUNICATION

TIME FRAME: 1:00

LEVEL OF INSTRUCTION: Level I

BEHAVIORAL OBJECTIVE:

Condition: A written quiz

Behavior: The student will confirm basic knowledge of CAL FIRE radio communication system.

Standard: With a minimum 80% accuracy according to the information contained in the "Introduction to Radio Communication Student Information Sheet", CAL FIRE 4300 manual, §4333.1.

MATERIALS NEEDED:

- Writing board with markers/erasers
- Appropriate video equipment and screen
- Hand Held Portable Radio

REFERENCES:

- Radio Use Program Text, CAL FIRE, October 2006

PREPARATION:

It is important that all firefighters have a basic understanding of the CAL FIRE radio communications system.



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INTRODUCTION TO RADIO COMMUNICATION

PRESENTATION	APPLICATION
<p>I. INTRODUCTION</p> <p>A. CAL FIRE has over 7000 VHF radios</p> <ol style="list-style-type: none">1. Estimated value over 10 million dollars <p>B. Improper use of radios can hamper emergency operations</p> <p>C. Fireline communications may come in many forms</p> <ol style="list-style-type: none">1. Hand signals2. Use of runners3. Whistles / horns4. Transmitted voice5. Face to face <p>NOTE: Face to face is the most effective form of communication on the fireline.</p> <ol style="list-style-type: none">6. Written messages <p>D. Fire service radios are for official use only</p> <p>II. RADIO EQUIPMENT</p> <p>A. Base Stations</p> <ol style="list-style-type: none">1. Fixed locations	<p>What forms can fireline communications come in?</p> <p>What is the most effective form of communication on the fireline?</p>



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<ul style="list-style-type: none">a) Emergency Command Centers (ECC)b) Fire StationsB. Mobile Relays (Repeaters)<ul style="list-style-type: none">1. For extension of radio communications<ul style="list-style-type: none">a) Due to topography and distance2. Mountain tops3. High buildingsNOTE: Mobile relay will shut off 60 seconds after microphone is keyedC. Mobile Radios<ul style="list-style-type: none">1. Vehicle mounted<ul style="list-style-type: none">a) Generally same output capabilities as base radiob) Mostly used as a command radio for initial attack forcesD. Portable Radios<ul style="list-style-type: none">1. Hand held<ul style="list-style-type: none">a) Lower output capabilities than base or mobile radiob) Mostly used for tactical communications	<p>Show students a mobile radio if available.</p> <p>Show students a portable radio.</p>



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<p>III. RADIO NETS</p> <p>A. Under ICS there are specific radio nets for certain functions</p> <ol style="list-style-type: none">1. Command<ol style="list-style-type: none">a) ECC, General Staff, Division/Group2. Tactical<ol style="list-style-type: none">a) Operations, Division/Group, Strike Team, Single Resource3. Support<ol style="list-style-type: none">a) Logistics and Ground Support4. Air to Air<ol style="list-style-type: none">a) For communications between aircraft only5. Air to Ground6. Logistics<ol style="list-style-type: none">a) Some incidents may have a separate frequency for the logistics section <p>IV. USING THE MICROPHONE</p> <p>A. Hand held</p> <ol style="list-style-type: none">1. Mobile and portable radios<ol style="list-style-type: none">a) Approximately 1 inch from mouth when speaking<ol style="list-style-type: none">1) Key the microphone and wait for at least 1 second before speaking <p>B. Console</p>	



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<ul style="list-style-type: none">1. Base station and ECC<ul style="list-style-type: none">a) Microphone about 4 to 12 inches from mouth<ul style="list-style-type: none">1) Key the microphone and wait for at least 1 second before speakingC. Think before you speak<ul style="list-style-type: none">1. Avoid dead airD. Be brief and to the point<ul style="list-style-type: none">1. Use proper clear textE. Remain calm<ul style="list-style-type: none">1. Your message will come across unclear if you are overly excited2. Key Points<ul style="list-style-type: none">a) Allow repeater time to activateb) Have pencil and paper available to record informationc) Use proper radio etiquette <p>NOTE: See Radio use program text</p> <p>V. MOBILE RELAYS</p> <ul style="list-style-type: none">A. Commonly called repeatersB. Situated on mountaintop to extend the range of mobile or base radios	<p>Use a dry/erase board or chart to show how the mountain top repeater system works</p>



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<p>VI. DIRECT / TALK AROUND / CAR TO CAR</p> <ul style="list-style-type: none">A. Signal does not go through a mountain top repeaterB. Relies on line of sight for strong signal <p>NOTE: This does not make the frequency a private channel. Everyone on that frequency within the line of site for hundreds of miles will still hear everything transmitted.</p> <p>VII. MESSEGE FORMULATION</p> <ul style="list-style-type: none">A. Raise the unit you are calling<ul style="list-style-type: none">1. Name of station or unit you are calling2. Name of station or unit you are calling fromB. Answering when another station or unit is calling youC. Answer by confirming your station or unit numberD. Wait for the requesting station to transmit their message and be prepared to write down the information	<p>Use a dry/erase board or chart to show how the signal is transmitted directly from vehicle to vehicle around the repeater.</p> <p>Example: Morgan Hill wants to call Belmont – BELMONT, MORGAN HILL</p> <p>Example: You are at Morgan Hill and Belmont has called you. You answer: MORGAN HILL</p>



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<p>E. Once the message has been received acknowledge receipt of the message</p> <p>NOTE: If transmitting from a base station always give the FCC call letters.</p> <p>VIII. STRUCTURING MESSAGES</p> <p>A. Use Clear text</p> <ol style="list-style-type: none"> 1. Avoid pleasantries <ol style="list-style-type: none"> a) Please, Thank you, Good morning b) Be concise, avoid unnecessary phrases <p>B. Use the phonetic alphabet</p> <p>IX. RULES OF RADIO USE</p> <p>A. Emergency traffic takes priority</p> <ol style="list-style-type: none"> 1. Routine traffic should always cease until termination of the emergency traffic <p>B. Radio traffic priority</p>	<p>Example: "Place a priority phone call to Belmont station." Your answer: MORGAN HILL COPY KSX39</p> <p>Give additional examples</p> <p>Refer student to the last two pages of the student information notes, 4333.1.sin. for clear text phrases and phonetic alphabet</p>



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<ol style="list-style-type: none">1. Injury, life hazard,2. First report of a new incident3. Initial attack dispatch for a new emergency4. Routine traffic <p>NOTE: 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.</p> <ol style="list-style-type: none">5. Do not talk over other radio traffic<ol style="list-style-type: none">a) Make sure some one else is not already transmitting on the same frequency <p>X. 24 HOUR TIME</p> <p>A. CAL FIRE radio operators use the same 24-hour clock designations as the military and other organizations.</p> <ol style="list-style-type: none">1. This system eliminates confusion about A.M. and P.M. times<ol style="list-style-type: none">a) Instead of 1 P.M., it is “thirteen hundred” <p>XI. TYPES OF MESSAGES</p> <p>A. Message and transmission definitions</p> <ol style="list-style-type: none">1. Routine traffic<ol style="list-style-type: none">a) Resource status, non-emergency message.	



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<ul style="list-style-type: none">2. Priority traffic<ul style="list-style-type: none">a) Non-emergency urgent message having precedence over routine traffic3. Emergency traffic<ul style="list-style-type: none">a) You or your crew are in peril4. New incident<ul style="list-style-type: none">a) Discovery of new incident en-route or walk-in report	



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SUMMARY:

In order to communicate operational and emergency needs, the firefighter must be able to effectively utilize the radio communication system.

EVALUATION:

The student will complete a written quiz at a time determined by the instructor.

ASSIGNMENT:

Review your notes and read "Introduction to Radio Communication Student Information Sheet," CAL FIRE 4300 manual, §4333.1 in order to prepare yourself for the upcoming quiz. Study for the next session.