



COMMUNICATIONS

SAN FRANCISCO FIRE DEPARTMENT

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COMMUNICATIONS

January 2008

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FOREWORD

The goal of this manual is to establish standard operating practices as authorized by the Chief of Department and implemented by the Division of Training.

The purpose of this manual is to provide all members with the essential information necessary to fulfill the duties of their positions, and to provide a standard text whereby company officers can:

- Enforce standard drill guidelines authorized as a basis of operation for all companies.
- Align company drills to standards as adopted by the Division of Training.
- Maintain a high degree of proficiency, both personally and among their subordinates.

All manuals shall be kept up to date so that all officers may use the material contained in the various manuals to meet the requirements of their responsibility.

Conditions will develop in fire fighting situations where standard methods of operation will not be applicable. Therefore, nothing contained in these manuals shall be interpreted as an obstacle to the experience, initiative, and ingenuity of officers in overcoming the complexities that exist under actual fire ground conditions.

To maintain the intent of standard guidelines and practices, no correction, modification, expansion, or other revision of this manual shall be made unless authorized by the Chief of Department. Suggestions for correction, modification or expansion of this manual shall be submitted to the Division of Training. Suggestions will be given due consideration, and if adopted, notice of their adoption and copies of the changes made will be made available to all members by the Division of Training.

Joanne Hayes-White
Chief of Department

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SECTION 1. INTRODUCTION

Having the ability to have constant communications with fire department resources is the basic foundation to being able to complete our job. The various types of communication equipment allows for communications from head quarters to field chiefs to company officers. The major component is the equipment that is used for communications from the E911 center where emergencies calls are received and then dispatched to fire department resources to handle the emergency situation.

Some of these communication methods are very complicated and others are very simple.

Currently the department uses the following methods:

- Telephone
- Lotus Notes (email)
- Dispatch through
 - Radio
 - Mobile Data Terminal (MDT)

The Department of Emergency Communications (DEC) is the City and County of San Francisco E911 Center which is located at 1011 Turk Street, This center is a combined dispatch center for Police, Fire and EMS.

The DEC:

- Receives alarms by:
 - Telephone (including the 911 system)
 - Radio from the Department's units or units of other agencies
 - Activation of the Municipal Street Telegraph
 - Activation of various private alarm systems
- Dispatches appropriate units to incidents
- Communicates with units operating in the field
- Produces records of the Department's responses.

The use of the radio and Mobile Data Terminals (MDT's) is the primary means of communication between the Department of Emergency Communications (DEC) and units out of their stations. Computer Aided Dispatch (CAD) system is the primary means of dispatching units to fires and other assignments. If the CAD System fails, radio becomes the primary dispatch system.

The Department has used a computer aided dispatch (CAD) system since the early 1970's to assist in dispatching units to incidents. When an incident occurs, Department of Emergency Communications personnel dispatch assignments on both the CAD

SECTION 1. INTRODUCTION

System and the Department radio network. The CAD system maintains records of the cause, type, location, duration, and number of incidents responded to by SFFD units.

Administrative functions are now handled through a Human Resource Management System (HRMS) which is interconnected with the CAD system. The HRMS connects various Bureaus and Divisions to facilitate the transfer of information and records between them, providing a central location to store records and information received from the various departments. The HRMS also serves as a media for exchange of messages between the various departments.

The Personnel Center uses the HRMS to maintain personnel records, to balance the daily manpower, and to send Roll Call to all departments, including the Airport. The HRMS works from two different systems, the main system is "People Soft" with the other part being the "AO" reports.

SECTION 2. ASSIGNMENT TO ALARMS

The dispatch system of the San Francisco Fire Department is built upon what, for many years, was known as the "Assignment Rules", prior to the computer aided dispatch (CAD) system, now in use. Thorough knowledge of the assignment rules was a vital job requirement for all members. The status of each fire-fighting unit was constantly monitored in each fire station. The assignment to each box-alarm, greater alarm, special call, cover-in and still alarm (unit dispatch) was "pegged" on each station's status (pegging) board.

Ideally, each station's pegging board would show the same status of all companies and units. This required constant attention to the ink-pen register and the prompt and correct movement of the unit pegs. The human element and the fact that rarely occurring situations sometimes resulted in varying interpretations of the assignment rules, occasionally resulted in errors in unit response.

The assignment rules have been programmed into the cad system. Individuals are relieved of the decision for proper response to any alarm. Units now respond when dispatched by the cad system.

All fire department units will be dispatched from the Fire/EMS dispatch center, which is located at the Department of Emergency Communications (DEC) via the CAD. No unit is to leave its station unauthorized to any incident until dispatched by the computer and/or has been announced over the station radio/pa.

In the event the computer aided dispatch system is out of service, dispatches will be made by manual mode, utilizing radio and/or voice announce. The station watch person shall be alert for any notification indicating a change from cad to manual mode and notify their immediate supervisor without delay.

The computer aided dispatch system automatically selects which units will respond to an incident based on pre-designated response files.

Procedures to verify response to alarms will be found in this manual.

DISPATCH POLICY

Dispatchers at the Communications Center are guided by department policy in making alarm assignments. In general, this policy is:

Fire in a Building. A full-first alarm assignment will be given to a reported smoke or fire in a building.

Street Box. One Engine, one Truck and the fireboat, if due, will be dispatched to a street box.

Auxiliary Street Box. One Engine, one Truck, and one Battalion Chief. (The fire boat may also be dispatched depending on location)

Retransmitted Alarms. One Engine, one Truck, and one Battalion Chief will be dispatched to retransmitted boxes such as ADT, National Guardian, etc., from commercial buildings.

High Rise Full box. Five Engines, Four Trucks, Four Battalion chiefs, One Assistant Chief, One Rescue Squad, One Medic Unit will be dispatched with the approval of a responding Chief

Building Alarms. One engine, one Truck and one Battalion Chief

Fireboat. When the Fireboat is dispatched, Engine 35 will be placed out of service to staff the fire boat. If Engine 35 is not available, the next closest Engine will be dispatched to staff the fire boat.

Medical. Depending on the type of dispatch, the appropriate number of resources will be dispatched to provide either one or two paramedics on-scene.

ALL INCIDENTS WILL BE DISPATCHED IN ACCORDANCE WITH THE CAD FRES (FIRE RESPONSE) FILES.

Basic assignment rules will be followed except when the 10-1 is in service or when directed by the Chief of Department, Deputies, Division Chiefs or the Chief of Communications.

UNIT ASSIGNMENTS

With few exceptions, the Computer Aided Dispatch system will automatically assign the appropriate number and types of units to an alarm.

1st Alarm

Engines	3	
Trucks	2	
Battalion Chiefs	2	2nd Battalion Chief is "Safety"
Division Chief	1	If a Division Chief is not available, a 3rd B C will be dispatched
Rescue Company	1	
Fireboat Company	1	Varies according to location
Medic Unit	1	

Working Fire

Engine	1	This is the RIC
Rescue Captain	1	

2nd Alarm (additional units)

Engines	4	
Trucks	1	
Battalion Chiefs	1	
Medic Unit	1	
Rescue Captain	1	
Mobile Air	1	
Fire Investigation	1	
Bureau of Equipment	1	

3rd Alarm or Greater (additional units)

Engines	4	
Trucks	2	After the 3rd alarm only 1 Truck
Battalion Chief	1	
Medic Unit	1	
Chief of Depart.	1	Notified
Deputy Chief	1	Notified
Deputy Chief	1	Notified

After the 5th alarm, all additional requests for resources will be special calls by the incident commander.

HIGH RISE ALARMS

High Rise 1st Alarm

Engines	5	
Trucks	3	
Battalion Chiefs	4	1 st BC is Fire Attack 2 nd BC is Lobby Control 3 rd BC is Staging 4 th BC is Safety
Assistant Chief	1	
Rescue Squad	1	
Medic Unit	1	

High Rise Working Fire

Engine	1	RIC
Rescue Squad	1	RIC
Medic	1	
RC	1	MGS
Mobile Air	1	

High Rise Second Alarm

Engines	6	
Trucks	2	
Battalion Chief	1	Division above Fire Floor, if necessary
Medic Units	1	
RC	1	

High Rise 3rd Alarm

Engines	3	Staging
Trucks	1	Staging
Battalion Chief	1	Base Manager
Medic Units	2	
RC	1	Transport Unit Leader

High Rise 4th Alarm

Engines	5	
Trucks	2	
Medic Units	1	
RC	1	

High Rise 5th Alarm

Engines	4	
Trucks	1	

MODIFIED ASSIGNMENTS – 10-1 SIGNAL

The 10-1 signal is used when the resources of the department are limited. The 10-1 will only be activated on the orders of the Chief of Department, Deputy Chief or Senior Division Chief.

When the 10-1 is activated, all alarm assignments are reduced. Such as a full box would only get two Engines, one Truck and one Battalion Chief.

Each additional alarm will get three Engines, one Truck and one Battalion Chief.

All requests for additional or specialized resources for an incident would be special calls from the Incident Commander.

For High Rise Fire Incidents during Modified Assignment a First alarm will consist of 3 Engines, Two trucks, Two Battalion Chiefs, One Rescue Squad and One Medic Unit.

Each additional alarm for a High Rise will get three Engines, one Truck and one Battalion Chief. All requests for additional or specialized resources for an High Rise incident would be special calls from the Incident Commander.

ALARM SOURCES & UNIT ASSIGNMENTS**Street Fire Alarm Box.**

One Engine, one Truck and the Fireboat, if assigned on a first alarm, are dispatched to any alarm received from a street fire alarm box for which there are no other reports confirming an actual fire or other incident.

Electronic Detection Devices & Auxiliary Detection Boxes.

One Engine, one Truck, the Fireboat, if due, and one Battalion Chief are dispatched to all alarms initiated by electronic detection devices or manual pull stations that are received from an auxiliary alarm system or a central station company without an additional report confirming that a fire or smoke condition actually exists.

Commercial Building Alarms.

One Engine, one Truck and one Battalion Chief will be dispatched to all commercial building alarms.

Residential Alarms.

One Engine, one Truck and one Battalion Chief will be dispatched to all residential building alarms.

Upgrading an Alarm Assignment.

The upgrading of an alarm assignment may be requested by units responding to an incident when they have additional information, such as they see smoke showing or they received reports from occupants that they have a fire in their building. The officer on scene will immediately inform the DEC and will request additional resources (full box—1st alarm assignment)

The DEC may also automatically upgrade an assignment when they receive additional information at the DEC that indicates the incident is greater in magnitude than what was originally dispatched. They will dispatch the additional units and state that a full box has been struck on box (box number).

Smoke Showing or Working Fire.

When a responding unit reports smoke showing or a working fire (in addition to an Initial Radio Report) , the DEC shall immediately dispatch additional units to make up a full first alarm assignment.

If a working fire is reported from any incident not already a full first alarm, the DEC will dispatch additional companies to make up a full first alarm assignment. Officers may request a straight 2nd, 3rd, 4th or 5th alarm; however, the Communications Center will immediately dispatch a 1st alarm before the 2nd, a 2nd alarm before the 3rd, and so on. Officers of units on the scene may request such additional assistance as conditions require.

Vicinity Boxes

A vicinity box is an alarm received from a street fire alarm box in the vicinity of a previously reported incident within a pre-defined geographic area and received within 10 minutes of the receipt of the original box. The first alarm assignment to a vicinity box shall consist of one Engine Company.

The unit dispatched to the vicinity box will always respond to the vicinity box location and verify that the box was not pulled for a separate incident.

A unit responding to vicinity box before a 2nd alarm, upon determining that there is no new incident at the vicinity box, shall report this to the DEC, then respond to the original box and report in with the Incident Commander.

A unit responding to a vicinity box after a greater alarm, upon determining that there is no fire, shall report this to the DEC and return to the quarters from which it responded, avoiding the original box.

Directed Cover Calls

A cover-in unit shall immediately proceed to its assigned location when dispatched. It shall respond Code 2, immediately but in a non-emergency status. The officer in charge of the cover-in company shall notify the DEC of their arrival via the MDT system by hitting the AIQ (Available in Quarters) button.

A cover-in unit shall return to its regular quarters when ordered to do so by the DEC, either by radio or CAD. This normally occurs under any of the following circumstances:

- After response to a greater alarm
- After response to a first alarm which later develops into a greater alarm
- After response to a Special Call from a greater alarm
- When relieved by the regularly assigned unit
- When ordered to return to its own quarters by the DEC

When a cover-in unit responds to any alarm other than as defined above, it shall, after completing its assignment, return to the quarters it is covering.

When a cover-in unit is relieved of its cover by the CAD system, they shall hit the respond key and return to their quarters.

When the regularly assigned unit reports in service, the cover-in unit shall be considered automatically out-of-service, and return to its own quarters upon notification by the Communications Center. When a unit returning from a cover-in is in the vicinity of its regular first alarm response area, it shall report in- service.

Special Rules for Division Chiefs

The Division Chief first available on box 3411 will be automatically due and respond to the Fire/EMS dispatch center whenever any of the following conditions occur:

1. A 3rd alarm is received for any box.
2. 20 or more Engine companies are out of service at one time.
3. When requested to do so by the officer in-charge at the Fire/EMS dispatch center during periods of high activity when it is felt assistance from field operations is required.

In the event a Division Chief is not available, a Battalion Chief will be dispatched to the DEC.

The responding Chief Officer shall contact the senior supervisor on duty at Fire/EMS dispatch. It shall be the Chief Officer's duty to monitor and manage the resources of the fire department. He or she shall have the authority to initiate the transmission of the fire department disaster operations plans with the approval of the Chief of Department or Deputy Chief.

The responding chief shall remain out service until:

1. A time when, in his or her judgment or conditions warrant.
2. When directed to report in-service by the Chief of Department or Deputy Chiefs.
3. When relieved by the Chief Officer assigned to the DEC.

OUT OF SERVICE CODES

- 4 – 4 Breakdown.** Used when a unit, while responding to an alarm, is unable to complete its assignment.
- 5 – 5 Out-of-Service.** By reason of; away from quarters on a drill; disabled other than when responding to any alarm, special call, or cover-in; repairs; when returning from alarm, special call, or cover-in call and is unable to reach its destination.

SECTION 3. FIRE ALARM SYSTEMS & PROCEDURES

FIRE ALARM SYSTEMS

Fire alarm systems include all possible means by which a citizen can notify the Fire Department of an emergency.

The municipal street telegraph system consists of the street fire alarm box network used to notify the Department, and the communications system within the Department used to direct units to the scene of an incident. In addition to the street fire alarm box system, the Department can be notified via private alarm systems and the public telephone.

In San Francisco, the Department of Electricity has jurisdiction over the street telegraph system and is responsible for the maintenance of the Department's communications systems. The Department of Electricity also has jurisdiction over auxiliary alarm systems that connect directly to street boxes, and monitors the receipt of alarms from central-station alarm systems.

The DEC, located at 1011 Turk St., in Jefferson Square, is the control center for receiving alarms and dispatching units to incidents.

Basic functions performed at the DEC are:

Receipt of alarms from:

- Street telegraph boxes pulled from the street.
- Street telegraph boxes activated by auxiliary systems which trip auxiliary mechanisms located within the box.
- Private central-station protective-signaling systems.
- Telephone alarms, including 911 calls to the DEC.
- Department radios.

Transmission of alarms via:

- Computer-aided dispatch system.
- Department radio.
- METS Red Phone system.
- Main line telephone.

STATION ALARM CONTROL PANELS

Fire alarm control panels are installed in each fire station and other designated areas of the Department. Fire alarm control panels are not uniformly standard and will require inspection to locate the switches or buttons required to be used for normal operations. Two types are in service, the old and new. Each panel is designed and equipped to accomplish the following:

- Control operation of the automatic lights for station use during the hours of darkness. When the circuit is energized, the lights go on automatically when a dispatch is received. An "off" and "on" switch is provided with each panel to control the automatic light circuit manually.
- An assembly bell is provided to assemble the members to respond to a unit dispatch or for other assembly purposes, i.e. roll call.
- Failure of any part of the fire alarm system, including automatic lighting circuits, switches to the help desk at 3877.

STREET TELEGRAPH BOXES

A street telegraph alarm box is a mechanism which, when activated, transmits a signal indicating the alarm box's street location to the DEC. Each box is provided with a notched code wheel having a designated number. The number of the box is cross-referenced to the location of the box.

Street telegraph boxes are activated by:

- Lifting the cover and pulling the hook at a street box location.
- Activating a remote station in an occupancy, causing an auxiliary device installed inside the box to trip the street box, transmitting an alarm.

There are two types of street telegraph boxes:

1. Department of Electricity:
 - a. Standard box.
 - b. Gamewell master box.
2. Pacific Fire Extinguisher Company:
 - a. A master box, equipped with an auxiliary device.

The types vary in external design and internal mechanisms. In all cases, each is provided with a telegraph sending key and a telegraph sounder. Keys issued by the Department of Electricity will open all boxes within the system.

Boxes equipped with an auxiliary device are identified as a master box. Those not so equipped are identified as a standard box.

The Gamewell master box has an auxiliary mechanism located at the upper right corner of the inside case. It is marked "Gamewell". When the auxiliary system is activated, a trip arm from the auxiliary is released and automatically trips the fire alarm box. The auxiliary system is intact and operational when the set bar is horizontal. When the set bar is vertical or completely inverted, it indicates the alarm was transmitted from a remote station.

Pulling the box from the street does not disturb the auxiliary mechanism. The position of the set bar will indicate the manner in which the box was actuated. Remote locations connected to these types of boxes are listed on the outer or inner door of the fire alarm box.

Street Telegraph Box Maintenance

Any unit that finds a street box that is in the need for maintenance shall contact fire alarm at ext. 3267.

CENTRAL STATION SIGNALING SYSTEMS

A central station signaling system is a private alarm which transmits fire or medical signals to a supervised central station of a private company. These companies are responsible for the service and maintenance of these systems.

When an alarm is received at the supervised central station, it is retransmitted to the DEC. Alarms received at the DEC are then transmitted over the Department alarm system using phantom box numbers.

Phantom Box

A building with a central station signaling system not connected to the San Francisco Fire Department fire alarm system is assigned a box number. There is no need to install a fire alarm box near the building. The box itself does not exist, but the fire alarm box number does, hence it is referred to as a **phantom box**. These types of fire alarm systems have no connection with incoming fire alarm circuits or street fire alarm boxes.

The following companies operate private central station signaling systems which are not directly connected to the fire alarm boxes on the San Francisco Fire Department fire alarm system:

- American District Telegraph Co. (ADT).
- American Burglar Alarm Co.

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- Bay Alarm Co.
- National Guardian Protection Co.
- General Alarm Co.
- Perimeter Security Co.

In addition to other fire alarm companies, many hospitals and private ambulance companies offer telephone medical alarm services for out-patients or the elderly.

AUXILIARIZED FIRE ALARM SYSTEMS

Auxiliarized fire alarm systems are directly connected to the fire alarm boxes on the Department's fire alarm system. Street telegraph boxes that have auxiliary devices connected are easily identified by the large white letter "A" stenciled on the side of the box. Auxiliary mechanisms shall never be re-set or tampered with by Department personnel. Only persons authorized by the Department of Electricity are permitted to perform these functions. Notify the Communications Center to have an auxiliarized box re-set.

Auxiliary fire alarm systems directly connected to the fire alarm boxes on the San Francisco Fire Department street telegraph system are:

- National Guardian
- Pacific Auxiliary Fire Alarm Company.
- Edwards Company.

A number of National Guardian fire alarm boxes are installed on the Department's system. All such boxes are master boxes. When this type of box is pulled from the street, the auxiliary mechanism is not disturbed. Whether or not the auxiliary mechanism has been actuated to trip the box is easily determined by the target bull's eye on the inner door. When the bull's eye reads "set", the box has been pulled from the street. When the bull's eye reads "fire", the box has been activated from a remote location and has tripped the auxiliary mechanism.

Associated with this type of fire alarm box is an indicator panel which denotes either "fire" or "break" to indicate if activation from a remote location was the result of a fire or electrical trouble. This panel also has klaxon horn or bells which may be silenced temporarily by removing a small glass panel over a pop-out pin switch at the bottom of the indicator panel. This will automatically silence the system. These types of boxes are generally designed for one auxiliary system connection.

The Pacific Auxiliary Fire Alarm Company and Edwards Company have many auxiliary fire alarm systems directly connected to master fire alarm boxes on the Department's system. Such auxiliary fire alarm systems are identified from a list found on the inside

of the outer or inner door of the fire alarm box indicating an auxiliary fire alarm system connection.

On such boxes, where it is evident or suspected that a box was activated from a remote location, each occupancy listed must be checked to isolate the location and the cause of the alarm. Where more than one subscriber is connected to a fire alarm box, an annunciator is provided in a "Wiley" cabinet below the fire alarm box. An employee of the private company responds when fire alarm boxes on the auxiliary system are activated. It is his or her duty to service, re-set, and reactivate the auxiliary mechanism and the system. Notify the Communications Center to have the box re-set.

LOCAL FIRE ALARM SYSTEMS

When activated, local fire alarm systems sound an audible alarm within a building to arouse the occupants in a fire emergency. The system may consist of local alarm boxes, bells, and/or smoke detectors located within a structure. These may provide for signals or ringing bells. The alarm may also be indicated at an annunciator panel or on an indicator board. It is important to know that the local alarm system is not connected to:

- The SFFD fire alarm system.
- A central protective-signaling station.

When these local fire alarm systems are activated, someone must notify the Department either by pulling a street fire alarm box, by telephoning the Department, or by calling 911.

Indicator Panels or Annunciator Boxes

Some fire alarm systems are equipped with indicator panels or annunciator boxes. They are installed on systems covering large areas or for special functions. Connection between the panel or box is made to:

- Heat detection systems.
- Remote control stations.
- Sprinkler systems.
- Smoke detection systems.
- Infrared-ray detection systems.

These panels or boxes are installed to assist in isolating and locating the area where the alarm was initiated. Location of these panels or boxes is not standardized. They are not always located in public areas open to the Department. Chiefs and Company Officers must be familiar with all auxiliary fire alarm systems (particularly those

SECTION 3. FIRE ALARM SYSTEMS AND PROCEDURES

equipped with indicator panels or annunciators), their exact location, and the area or special functions they cover.

The information on fire alarm control panels found in typical high-rise structures is covered in the manual of High Rise Procedures.

TELEPHONE PROTOCOL & PROCEDURES

When answering official Department station telephones (the Main Line and Red METS Phones), give the station identity first, followed by your rank and then your name:

Station 5, Firefighter Jones
Station 44, Firefighter Smith

The main line and METS Red Phones are NOT to be used to make or receive personal calls.

The main line is NOT to be used to make long-distance calls, except on official Department business.

Department telephones shall be used only for the transaction of official business connected with the operation of the Department. However, in cases of emergency, the officer in charge may grant members the use of such telephones. This privilege may be extended to public officials when similar means of communication are not readily available. If it is necessary to make a local call to transact Department business, dial 9 for an outside line, then dial the desired number.

METS Red Telephone System

METS stands for "Mayor's Emergency Telephone System" and is operated by a telephone switch Located at 1011 Turk Street.

It replaces the old police Ring-in system and there are now METS phones in all 478 police call boxes. A key for these boxes is on the key ring of every piece of apparatus.

This telephone system is maintained by the Department of Electricity and operates on D of E lines throughout the City. It is independent of Pacific Bell circuits.

The METS system is designed to operate during power failures; it is connected to the back up generators at 1011 Turk Street.

Four METS locals have been installed upon the consoles at CFAS for use by Fire Department dispatchers and radio operators. These lines are for use when contacting fire stations and other operational points for routine business.

The METS locals installed upon the consoles at CFAS are 2267, 2268, 2269 and 2270.

Extension 2278 is listed in the METS directory as the contact number for the Communications Center. 2268, 2269 and 2270 are not listed and will only be listed within the Department.

Each of these extensions will also give you an outside dial tone for calling **only within San Francisco. No long-distance service available.** Dial "9" for an outside line.

Most Fire Department locals are numbered much like the regular Department phone system, with the exception that the number 2 has been added before the number. As an example, Station No. 1 is 2201, Station No. 15 is 2215 and so on.

METS phone numbers are listed in Appendix G.

SECTION 4. RADIO EQUIPMENT

DESCRIPTION OF THE RADIO SYSTEM

The radio system consists of:

- Eight main base transmitter—receivers located throughout the City
- Mobile units
- Base stations in each station and other selected locations
- Portable radios

The radio system is an 800-megahertz trunked radio system. The 800 MHZ radio system uses more than 100 talk groups (formally called channels). The system is used by many city departments:

Each department has several talk groups for their use. The radio has 48 groups (channels) are located within three banks – 16 talk groups per bank. The SFFD radios have three banks designated as “A”, “B” & “C”. The “A” bank will be the Department’s primary radio bank. All 800 radios within the City share at least four talk groups with all other City radios (Event/B1, Event/B2, OES1/C10 & OES2/C11)

Radio Talk Groups (Channels)

The SFFD radio system has 3 banks of 16 talk groups (channels). “A” bank is the primary fire operations bank. The talk groups are broken up into the following:

- Control Channels (A1-A3)
- Command (A4-A6)
- Tactical (A7-A16)
- Administrative (B7-B10, B12)

Control

- A1 will be the dispatch channel – Control A1 – for Division One
- A2 will be the dispatch channel – Control A2 – for Division Two
- A3 will be the dispatch channel – Control A3 – for Division Three

Control channels are what normal radio traffic between units and the DEC will be made over. Control channels are assigned at the time of dispatch, they are based on location of incident. Control channels will be displayed on the print out slip and also on the MDT screen.

Command

A4 — An open command channel that can be used at major incidents

A5 —Division 2's Command Channel

A6 —Division 3's Command Channel

Command channels will stay with the respective Division Chief at all times even if they cross over to another division boundary.

All units responding to a greater alarm or an incident where a command channel is in service, will respond on the command channel.

Tactical

A7 thru A16 are the incident tactical channels, tactical channels will be assigned at the time of dispatch. (tactical channels are treated as units in the CAD system)

B13 Medic Units -- Medical Notification Channel

B14 Medic Units -- Medical Notification Channel

C09 Airport Operations (see appendix for channel allocations)

C07 BART operations where the BART radio is not used.

The tactical channel for each incident will be displayed on the dispatch slip and also the MDT (example TC14)

*** The Incident Commander can request additional tactical channels for use at an incident. The IC would request through the control or command channel to DEC the number of additional channels needed.

Communications personnel, by order of the Chief of Department, have the authority to assign units to a channel other than the one normally assigned to a division. **Units shall follow their instructions at all times.**

Upon returning from an incident, units shall go in-service on their MDT and then switch to their regularly assigned channel. Upon returning to quarters, **all units shall go AIQ on their MDT.**

There are three direct channels in the portable radio C14, C15 & C16. C16 is denoted as "public safety" talk-around. This channel is shared by police and fire. Additionally, there are five (5) event talk groups. Event/B1 and Event/B2 are in every 800 MHZ radio in the City, no matter what Department. Event/B1 is always "on". Safety Events B4, B5 & B6 are for public safety departments only (Police/Fire/Sheriff/DPT). B2, B4, B5, & B6 must be turned on by dispatch. Event talk groups are not normally monitored. You would use these talk groups when working with other agencies or as part of a 'unified or incident' command

Radio System Failure

There are various levels of radio failure

- Fail Soft
- Total Failure

When the radio system goes into “Fail Soft” the DEC will make a radio announcement to all units and stations stating that the radio is now in fail soft mode.

Units in the field and fire house will need to follow the communication plan for “Fail Soft” mode as outlined below.

FD-A1	IN SERVICE (AOR, AIQ)
FD-A2	OUT OF SERVICE (ACTIVE CALLS)
FD-A3	MEDICAL, miscellaneous & maybe used for greater alarms during “failsoft”.

TACTICAL CHANNELS during “failsoft” are C14, C15, or C16 (not monitored @ ECD)

When the radio system returns to normal operations, the DEC will make a radio announcement stating that the “Fail Soft” mode has been secured. All units will return back to the normal radio communication plan.

When the radio system goes into total failure, the only thing that will work on the radio is some of the “C” bank channels and the direct channels “C14, 15 & 16”

Radio System Components

There are three components to this radio system that involves the Fire Department operations:

- Base station radios (fire station radios)
- Mobile radios
- Portable radios

BASE STATION RADIOS



All stations, the Bureau of Equipment, Division of Training, Headquarters (HQ) are equipped with base stations. The radio is a Spectra W7. There are thirteen basic functions, six of which each member must be familiar with.



These radios are model spectra W7's and are exactly the same as the base station radios. The only difference in operation involves the emergency button. The emergency button is active and should be depressed only in cases of extreme emergency.

- | | | |
|----|----------------------------|---|
| 1. | Power on/off button | Non functional, radio is always on. |
| 2. | Volume button | |
| 3. | Mode button | Channel selector (normally A1, A2 or A3). |
| 4. | Zone button | Bank selector ("A", "B" & "C" – normally on "A"). |
| 5. | Home button | Returns settings to programmed settings. |
| 6. | Emergency button | Disabled |
| | Phone button | Non-applicable. |
| | Call button | Non-applicable. |
| | Secure button | Non-applicable |
| | Horn/lights | Non-applicable. |
| | Nuisance/delete | Non-applicable. |
| | Monitor | Non-applicable. |
| | Direct | Non-applicable. |

Portable radios

There are several models of portable radios in use in the SFFD. They are Motorola XTS 3000 Models 1 and 3 and XTS 5000 Model 2.



XTS3000 M1



XTS3000 M3

XTS5000 M2
(SFFD yellow)

All portable radios have an ID number engraved on the face. This ID number is important. It not only identifies the radio; it is assigned to a particular unit, and position on that unit, i.e., T01-A-off, T01-E-tiller). It is absolutely imperative that the radios are never switched, or exchanged. This is a safety issue. If and when an emergency button is activated, it is immediately displayed on the screens of the dispatch center. To properly respond to the emergency, the proper identification of the radio is imperative. – **This is a safety issue.**

Portable radios with numbers that start with 703xxx, are encrypted and for use by paramedics, arson or administration “only”.

Portable radios that have numbers that start with 730xxx are for general fire usage.

All Portable radios have the following components:

- Power on/off volume control
- Rotary selector knob (1-16)
- Emergency button (orange)
- 3 position zone toggle (bank selector)
- Purple button – display light (side of radio/purple button)
- 2 gray buttons – (side of radio will silence page. Only cc01 will be able to page) the button with 2 dots, just above the ptt in “c” bank 1-9 switches from repeater to direct (no visual indication on model 1 radios).
- Large gray button – (side of radio – push to talk button)

See Appendix-K for further information.

See Appendix L for EMS hospital notifications and EMS Aircraft Utilization.

All portables are waterproof; **the remote speaker microphones issued with the radios are not.** The microphones can be removed but the radio fitting must be covered with a plastic cover, which can be obtained from DTIS help desk (on the first floor, DEC). If a portable radio is exposed to salt water, it must have the battery immediately removed & be rinsed in fresh water and immediately reported to the help desk and exchanged as soon as possible. Phone # 558-3877.

Batteries

All batteries have a green dot on the bottom, which makes the radio intrinsically safe. If a battery similar in design but with a different color is used, the radio will not be intrinsically safe. When the radio chirps the battery is in need of charging. **Whenever changing batteries always insure the radio is off.** The radio can be damaged if this is not done.

Radio Distribution

Portable radios will be distributed to SFFD field units as follows:

Engine companies	4 portable
Truck companies	5 portables
Rescue squads	4 portables
Medic units	2 portables
Battalion Chiefs	2 portables
Division Chiefs	2 portables
Mobile Air	1 portable
Rescue Captains	1 portable
Other specialized apparatus	As appropriate

All radios have an identification number assigned to it. These numbers are assigned to a specific station or unit and position on that unit. When the radio is used, the ID/alias will be shown on the screen at the dispatch consoles at Communications. The ID/aliases will be indicated in the following manner:

Fire stations	Fire station number i.e. (Sta 01)
Mobiles	Co. Number then m i.e. (E05m)
Portables	Co. Number and either a number or number/letter combination i.e. (RS01-A-off) (RS01-B-AO) () (B01-A-off) (T05-A-off) (T05-E-tiller) – tiller operator

This means all transmissions are recognized from each specific radio.

Emergency Button

Each mobile and portable radio has an emergency button. This emergency button should only be activated when you are unable to use your radio to make a verbal transmission during the time of an extreme emergency. This is a safety feature and it is up to the user of the radio to be aware of the sensitive nature of this feature on the radios.

When initiated, the radio ID/alias is displayed on all of the dispatch screens and an alarm is activated at Fire/EMS dispatch. It is displayed as an emergency activation/alarm. The protocol will be:

1. If the unit is on a single unit dispatch the Fire/EMS dispatch center will attempt to contact the unit by radio. If, after repeated attempts, they are unsuccessful, the following notifications will be made:
 - a. Fire/EMS dispatch will notify the police department that the fire department has an emergency alarm activation and that they are unable to contact the unit. The police department will treat this as high priority call and will dispatch a police unit, code 3, to the last known location of the fire unit in question.
 - b. Fire/EMS dispatch center will also dispatch the closest Battalion Chief to respond to the last known location of the fire unit.

The Fire/EMS dispatch center will continue to try and contact the unit transmitting the alarm until either the fire unit answers and confirms there is no emergency or until the police and/or Battalion Chief arrive on the scene and establishes contact with the fire unit.

2. If the Fire/EMS dispatch center receives an emergency alert from a radio during a multi unit incident, the Fire/EMS dispatch center will immediately notify the incident commander.

Mobile Data Terminals

The mobile data terminal (MDT) is the prime way for units while on the air to receive their dispatch information and to communicate status changes to DEC without using the radio system.

The MDT provides the same information that the print out slip in the fire house.

Units use the MDT to make the following status changes:

AOR – Available on Radio
AIQ – Available in Quarters
En Route
On Scene
Arrived at Hospital

Further instructions and operational procedures can be found in Appendix I

Portable Radio Repair

For portable radio repair, the exchange of radios will be at 1011 Turk Street, on the first floor. (see the DTIS tech)

When exchanging portable radios, the tech will issue a replacement radio, which has been programmed with your ID/alias. **It is imperative that the company officer/officer in charge of the unit enter the new ID# in the journal and that all members using that radio know there has been an exchange. You will keep the**

exchanged radio. There will not be a repair and return. Because of the safety feature on the radios, of the emergency button, radios cannot be switched between users, i.e., Officer and tlr/op, or RS01 and RS01-A-off, RS01-B-AO, RS01-C-EMT. It is essential that the ID# is identified with each specific radio operator/user. See Appendix-D

MOBILE UNIT REPAIRS

All mobile radio repairs will be reported to the bureau of equipment. The BOE will schedule repair and replacement with (DTIS) at the radio shop at 901 Rankin Street.

BASE STATION REPAIRS

All base station radio problems shall be reported to the Fire/EMS dispatch center (DTIS) help desk at 1011 Turk Street. Phone # 558-3877.

To Transmit:

1. Lift the mike from holder.
2. Determine that you are on the proper channel.
3. Listen for other stations that may be transmitting.
4. If signals are heard, wait until the channel is clear before proceeding.
5. Hold the mouthpiece about one inch from lips and turned about 30-degrees away from the face.
6. Press the push-to-talk button.
7. The red transmit indicator light will illuminate and the radio will transmit a message.
8. Speak slowly and clearly across the mouthpiece in a normal or slightly louder-than-normal voice.
9. At the end of the message, release the push-to-talk button and replace the mike to it's holder.

To conserve power in the vehicle batteries, the engine should be running while transmitting from mobile units. Mobile radios and station radios can not be turned off separately. On those units so equipped, the radio goes off when the ignition is turned off.

If the radio is keyed for more than 60 seconds the radio system will automatically release the open mike.

BART RADIOS

BART currently uses an Ericsson 800-megahertz radio system. BART has provided the San Francisco Fire Department portable radios that can be used while operating in the under BART system.

Further instructions on the use of the BART portable radio and the communication plan for BART can be found in the Transit Manual and Appendix H.

MARINE RADIO EQUIPMENT

Kenwood Mobile Radio

The Kenwood mobile radio has been programmed with all the state and federal mutual aid radio frequencies.

Operating instructions and the list of frequencies can be found in Appendix J

This radio will be used when units respond outside the City and County of San Francisco to provide mutual aid to another department through out the state.

When mutual aid resources respond into the City and County of San Francisco, DEC and incident commanders will be able to communicate with these resources.

All Engines, Trucks, Chief's vehicles, Medic units and various specialized units have the Kenwood radio installed.

The Kenwood radio has the Fire White (White, 1, White 2 & White 3) radio channels programmed into them.

Because there are so many fire departments on theses frequencies, the radio procedure requires that the name of the city or jurisdiction precedes the apparatus type and number.

As example, Engine 17 becomes "San Francisco Engine 17" when the apparatus transmits on this radio system. Officers transmitting on this radio system shall use the "San Francisco" identifier when contacting a Communications Center.

The Kenwood radio system can be used in the time of a complete radio failure of the 800-megahertz system. The DEC working in conjunction with the States Office of Emergency Services will designate the channels to be used.

Bendix King Portable Radios

The Fire Department has a cache of Bendix King portable radios that are assigned to companies when units respond outside the City and County of San Francisco to provide mutual aid.

The Bendix King radios are stored at the Division of Training with the rest of the mutual aid equipment.

Each member assigned on a strike team, task force or single resource will be given a portable radio for use while outside the city.

The Bendix King radios are pre-programmed with all the state and federal frequencies.

Battalion Area Talk-Group - Satellite Phone (BAT Phone)

The Battalion Area Talk Group Satellite Phone System, internally referred to as the "BAT Phone", provides the San Francisco Fire Department with a backup communications system in the event of degradation, or lack of access, to the 800 MHz Radio System or Public Telephone System.

The BAT Phones are assigned to all field Chiefs.

Further information and operating instructions can be found in Appendix L.

PAGERS

Two way pagers are issued to the Administrative staff within the department. All pagers are issued and maintained through Support Services.

CELLULAR TELEPHONE SERVICE

Cell phones are issued to all field Chiefs, Rescue Captains along with command staff, bureau of equipment and other administrative staff. All cell phones are issued and maintained through Support Services.

SECTION 5. RADIO PROCEDURES

REGULATIONS

1. The San Francisco Fire Department radio system is licensed by the Federal Communications Commission as a "FIRE RADIO SERVICE OF THE PUBLIC SAFETY RADIO SERVICES".
2. This radio system is designed to meet the requirements for our day-to-day operations and to provide essential facilities during periods of extreme emergency.
3. The objectives of the radio system are to insure the dispatching of vital information to all units and the exchange of information between all units.
4. The radio system shall be used for the transaction of official business by authorized personnel.
5. The Department of Electricity, by ordinance, is charged with the establishment and the maintenance of municipal radio systems in San Francisco.
6. The radio procedure does not preclude the use of telephone facilities when conditions indicate the need. Any lengthy non-emergency conversation should be made over the telephone.
7. No officers or member shall attempt to repair any radio equipment. Any adjustment shall be strictly limited to channel selection, volume, and squelch control.
8. When warnings are posted banning radio transmitting within an area where explosive operations are being conducted, such warnings shall be observed and all necessary communications shall be conducted by telephone.
9. The Federal Communications Commission authorizes the stations in Fire Radio Service to transmit communications directly relating to public safety and the protection of life or property and communications essential to official Department activities.

GENERAL INFORMATION

The **first unit to arrive on the scene** shall give a brief preliminary report of the situation, such as, "under investigation," "smoke showing," "working fire," etc. **Only the**

SECTION 5. RADIO PROCEDURES

first unit arriving on the scene and the first chief arriving shall transmit "on the scene".

The first arriving unit on scene of an incident shall give a proper radio report. The radio report should include the following information:

- Unit designation of the unit arriving on scene
- A brief description of the incident situation, (i.e.. building size, occupancy, Hazmat release, multi-vehicle accident etc.)
- Obvious conditions (working fire, hazmat spill, multiple patients, etc.)
- Brief description of Strategy
- Any obvious safety concerns
- Assumption, identifications and location of Command
- Request or release resources as required

The reasons for a preliminary report are:

- It gives information to other units about what to expect when they arrive on the scene.
- A report of "smoke showing" or "working fire" will allow officers on other incoming units time to formulate their attack on the fire.
- A report of "nothing showing" or "under investigation" will cause the officers and drivers of other responding units to continue to exercise due caution as they continue their response. This, of course, will help reduce the potential for accidents.

"Fire under control." This information is entered into the computer. The Incident Commander shall cause this information to be given.

When the last unit assigned to an incident goes "in service," the DEC must end the incident by giving it a disposition code before the incident can be closed.

To maintain accurate incident records, responsibility for ending incidents and filing a report shall be assigned as follows:

- If a box is canceled, the unit making the request will end the incident.
- If a working incident with a full-alarm assignment, a Chief Officer will end the incident.
- If there is an incident without a Chief Officer on scene, the Senior Officer on scene will end the incident.

If the address of the incident differs from the address on the dispatch, the corrected address must be transmitted to the dispatcher before he or she ends the incident.

To provide effective fire ground communication with a minimum of traffic during major incidents, the following procedures shall be observed:

- Monitor the channel before transmitting.
- Identify the radio channel you are using as part of your message, i.e. "Control 3, Battalion 6, in service."
- Properly identify yourself, i.e. "Truck 1, Rescue 1, Rescue 1-A." Names are to be avoided.
- Give priority to emergency messages.
- Formulate your message before you transmit.
- Keep messages short and concise.

DO NOT!!!

- **Interrupt emergency messages.**
- **Use obscene, indecent or profane language.**
- **Monopolize or "tie-up" the channel.**

DEPARTMENT OF EMERGENCY COMMUNICATIONS (DEC)

DEC personnel shall be responsible for transmitting dispatches, clearing air traffic as quickly as possible, and determining the order of priority of transmissions. **Their orders are to be strictly obeyed.**

DEC personnel shall broadcast the following as applicable:

- Box alarms and Building Alarms
- Unit dispatches.
- Greater alarms.
- Special calls.
- Recall of units when authorized.
- Units who report out-of-service when responding to an incident.
- Other information when requested to do so by proper authority, such as: radio test, special announcements, time signals, emergency signals, etc.

On the initial broadcast, DEC personnel shall announce all unit dispatches, alarms, and special calls twice.

RADIO PROCEDURES

Under normal circumstances, units will conduct all radio transactions on the channel which corresponds to the division to which they are assigned. Units in Division One will

SECTION 5. RADIO PROCEDURES

operate on Control One, Division Two on Control Two, and Division Three on Control Three. All incidents are broadcast on Controls 1, 2, and 3.

When a dispatch is made, the proper radio channel for the response is part of the teletype message and will appear as C1, C2, C3, as appropriate. This information will also be part of the radio broadcast to indicate to units that are available on radio which channel to use.

The channel selection is based on the regularly-assigned Division Chief to the scene of the incident. Companies shall be alert to the designation of the dispatch channel.

The CAD system assigns radio channels to incidents. Normally, units will respond on the same channel assigned to their division as previously stated.

DEC personnel, by order of the Chief of Department, have the authority to assign responding units to a channel other than the one normally assigned to a Division. Units shall follow these instructions at all times.

Upon returning from an incident, units shall request to go in-service on their regularly-assigned channel.

RULES OF DISPATCH

All boxes and dispatches are transmitted on Controls A1, A2, and A3. Cancellations of box alarms are transmitted on Controls A1, A2, and A3.

Acknowledgment of Transmissions from Field Units

The proper method of acknowledgment of transmissions from field units is as follows: (unit type) (unit number) (acknowledgment message). Do not reverse apparatus type and number. Addresses and assignments are fictional and used as examples only.

DEC: *Engine 12, message received.*
DEC: *Truck 15, out of service.*
DEC: *Battalion 2, in service.*
DEC: *Engine 13, second alarm.*
DEC: *Engine 30, do you wish to go in-service*

Avoid casual language. Use the phrase "Engine 13, PG&E has been notified," rather than "we'll pass it along" or "we'll let them know" or other such casual phraseology.

Calling a Unit on a Single Channel

When attempting to reach one unit on a single channel, the dispatcher should always use the channel number:

DEC: *Engine 1, Control 1.*

Do not say simply "control." If the dispatcher is attempting to reach CD-1 or other units without specific channel assignment, then the use of the term "control" is appropriate when broadcasting on all channels.

Use of the Tone alert Signal

A three-second tone signal is to be transmitted by Communications Center personnel upon dispatch of any unit dispatch or box alarm. Further, this three-second tone signal is to be transmitted when broadcasting messages to "all units" such as greater alarms, additional information on an alarm, hazard information, broadcasting the Chiefs' board, when placing signals in or out of service, or when broadcasting cover-in calls.

All units will refrain from transmitting once they hear the tone alert signal until the conclusion of the dispatch that DEC is transmitting.

Box with Address

DEC: (3 second tone)

*Box 1234.
Address 567 Elm Street.
Near Walnut Street.
Units due: Engine 1, Engine 2, Engine 3, etc.
(Any additional information available here.)
Reported as fire in the building.*

*Repeating.
Box 1234.
Address 567 Elm Street.
Near Walnut Street.
Units due: Engine 1, Engine 2, Engine 3, etc.
(Type of call)
Reported as fire in the building.
Respond on Control 1.*

Always say address and near. Do not use to in place of address.

Transmission of Auxiliarized Box Alarms

DEC: (3 second tone)

*Auxiliarized Box 4444
(Street) and (cross) Street.*

SECTION 5. RADIO PROCEDURES

*Units due: Engine 4, Truck 4, Battalion 12
This box is auxiliarized to 567 Elm Street.*

*Repeating.
Auxiliarized Box 4444
(Street) and (cross) Street.
Units due: Engine 4, Truck 4, Battalion 12
This box is auxiliarized to 567 Elm Street
Respond on A 1.*

Transmission of Street Box Only

DEC: (3 second tone)

*Street Box 1234.
Walnut Street and Elm Street.
Units due: Engine 1 Truck 4
Respond on A 1.*

*Repeating.
Street Box 1234.
Walnut Street and Elm Street.
Units due: Engine 1, Truck 4
Respond on A 1.*

Transmission of Unit Dispatches

DEC: Unit Dispatch: Engine 1.

*Address: 1234 Elm Street, near Walnut.
(Type of call).
Lock-out. Food on stove.*

*Repeating.
Unit Dispatch: Engine 1.
Address: 1234 Elm Street, near Walnut.
(Type of call).
Lock-out. Food on stove.
Respond on A1.*

When Unit Reports Smoke or Fire Upon Arrival

Unit: *Control 1, Engine 1 on the scene. Smoke showing. (This would also include the initial radio report)*

DEC: (3 second tone)

All Units responding to Box 1234, Walnut and Elm Streets, Engine 1 reports smoke showing. Repeating, All units responding to Box 1234, Walnut and Elm Streets, Engine 1 reports smoke showing,

This transmission is to be simultaneously transmitted on Controls A1, A2, and A3 even if a channel has been closed because of greater alarm traffic.

Releasing of units from a full assignment

When an Incident Commander wants to release companies from an incident, they have several choices;

1. Cancel; hold no one (everyone is automatically placed in service)

Cancel box XXXX (address) holding no one.

2. Cancel box and hold unit/s

*Cancel box XXXX (address) holding Engine 1.
Repeating, cancel box XXXX, holding Engine 1.*

3. Units will go in on their own (all units will go AOR on their MDT's). There is no need to broadcast the reason for the cancellation.

<p>You can NOT cancel a box holding no one and also have units go in on their own</p>
--

Working Fire and Greater Alarm Broadcast - All Channels - All Units

DEC: (3 second tone)

Attention all Stations and units, a second alarm has been struck on Box 1234, Walnut and Elm Streets.

Repeating. All Stations and units, a second alarm has been struck on Box 1234, Walnut and Elm Streets.

Greater alarms are broadcast on Controls A1, A2, and A3. Automatic or directed cover-ins are to be immediately broadcast.

Directed Cover-In Calls

DEC: (3 second tone)

*((directed) cover-in call, Engine 4 to the quarters of Engine 1.
Repeating (directed) cover-in call, Engine 4 to the quarters of Engine
1. Respond on Control X.*

X represents the Channel listed on the dispatch slip and designated by the Communications Center.

This transmission is broadcast to all stations and units on Channel 1, 2, and 3, even if closed because of greater alarm traffic and is to be transmitted following the dispatch of the greater alarm.

Verifying a Message from a Field Unit

DEC: *Engine 1, are you requesting an ambulance?*

E1: *Control 1, Engine 1, affirmative.*

DEC: *Engine 1, message received.*

The use of the word "requesting" is very important and it transmits well. Do not use "OK," "will-do," "check," or "check and thanks."

Dispatching Units for Automatic Aid (Daly City)

DEC: (3 second tone)

*Daly City Box 9567.
Address: 999 John Daly Drive, near Colma Street.
San Francisco units due: Engine 30, Engine 31, Engine 32, etc.
(Type of response) Fire in building.*

*Repeating:
Daly City Box 9567.
Address: 999 John Daly Drive, near Colma Street.
San Francisco units due: Engine 30, Engine 31, Engine 32, etc.
(Type of response) Fire in building.
Respond on Control*

NOTE: Daly City boxes are 3 digit boxes; however, SFFD transmits them preceded by a "9".

RESPONSIBILITIES

Chief Officer Responsibilities

1. Chief Officers are responsible for all messages sent over their mobile radio and MDT. An order sent over radio from such a mobile unit is considered as being issued from the Chief Officer in charge of that unit.
2. Chief Officers of the fire fighting force are to maintain constant radio contact with the DEC when in-service and away from quarters.
3. A Chief Officer is to give a preliminary report to the DEC immediately on his arrival at the scene of an incident. This report is to be brief and concise. Within five minutes of the preliminary report, a progress report is to be made giving additional details of the incident.
4. When a Chief Officer requests a "Chief's Board," the DEC will reply with:
 - a. Any pertinent information.
 - b. The status of other Chief Officers.
 - c. The time.
5. When Chief Officers are visiting fire stations, they shall monitor the station receiver or portable radio on the proper channel.

Incident Support Specialist (ISS) Responsibilities

1. No ISS is to assume any responsibility or make any decisions for which he or she is not authorized. No ISS shall put his or her Chief Officer in-service until directed to do so by the Chief Officer.
2. If, while out in their respective Divisions or Districts and the ISS receives notification for a greater alarm, they shall see that their respective Chief Officer is so notified.

Company Officers Responsibilities

1. The officer or acting officer of a company is responsible for all radio and MDT messages sent from the assigned unit.
2. All companies shall have a member maintain a radio watch. Companies' out-of-service for drill purposes shall maintain a radio watch except when in attendance at the Division of Training. All companies shall maintain a constant radio watch while they are away from quarters.
3. In the absence of a Chief Officer, the Company Officer is to give a preliminary report of an incident. Canceling a box automatically recalls and places all chiefs and companies in service. The radio shall be turned to

SECTION 5. RADIO PROCEDURES

the proper channel and all units shall return to their station or prior assignment.

4. When dispatched to cover another company, the Company Officer is to turn the radio to the proper channel. When a cover company leaves to return to its own station, it is to turn the radio to the proper channel. When they are within their first alarm area, units shall report in-service.

The Company Officer is to be alert to receive information on his apparatus radio while responding to an alarm. Companies recalled from alarms are to stop sounding sirens, turn off red lights, obey all traffic regulations, and watch for other companies responding to the alarm.

Units responding to an incident when in service on the air or when the DEC is in manual mode are to verify their response by radio.

PRINCIPLES OF GOOD RADIO COMMUNICATIONS

To achieve the objectives of the radio system, messages must be brief, definite, comprehensive and clearly spoken. As far as possible, messages shall conform to standard procedures.

It is necessary to speak distinctly in order to be easily and accurately understood. Radio users should formulate the message in their minds prior to speaking on the radio in order to provide a clear, concise message.

All radio conversation is businesslike and should not include personal greetings. Be courteous, but expressions such as, *thank you* and *please* are not necessary.

IMPORTANT: It takes about one full-second for the Twin Peaks repeaters to open. Get into the habit of push button-pause-talk rhythm so your message can get through the repeater to the Communications Center or to another unit. Do not release the button prematurely before the end of a message; doing this will cut off part of the message.

Radio Messages

Radio messages from the field will normally consist of three parts:

1. Destination of the message.
2. Identity of the sender.
3. Text of the message.

No matter where the call initiates, the unit or person being called is ALWAYS the first part of the transmission. The identity of the caller is ALWAYS the second part of the transmission.

When your unit is called by the Communications Center:

DEC: *Engine 7, Control 3.*

Unit: *Engine 7.*

DEC: *Engine 7, landline Red Phone 2268 at your convenience.*

Unit: *Control 3, Engine 7, message received.*

Messages from units in the field shall ALWAYS be acknowledged by the DEC. When the DEC acknowledges a message from a unit in the field, the acknowledgment will always include the unit's identity. Example:

Unit: *Control 1, Engine 13 on the scene at 350 California Street, nothing showing.*

DEC: *Engine 13 on the scene. or*

Unit: *Control 2, Engine 21, cancel the box at Fillmore and McAllister Streets. False alarm.*

DEC: (Three-second tone)

Cancel Fillmore and McAllister Streets, repeating cancel Fillmore and McAllister Streets.

Since Communications Center personnel monitor five channels, in order to send a message to the Communications Center, it is necessary that users identify the control number they are calling. Avoid saying **ONLY** *Control* when contacting the Communications Center.

Unit: *Control 3, Engine 7.*

DEC: *Engine 7.*

Unit: *Have 4710 respond to this box, we have a false alarm suspect in custody.*

DEC: *Engine 7, message received.*

The radio system allows a Chief Officer or ISS to contact units directly without relaying the message through the Communications Center.

Unit: *Units responding to UC Hospital, this is Battalion 5, the fire is reported on the third floor, west.*

Sometimes it may be easier to broadcast the information to the DEC for rebroadcast. However, this option is open to Chief Officers, ISSs and Company Officers.

SECTION 5. RADIO PROCEDURES

In the following example, Engine 40 is attempting to contact Engine 36. The officer of Engine 40 knows Engine 36 is on Control 2, so the officer selects Control 2 and transmits:

Unit: Engine 36, Engine 40.

Unit: Engine 36.

Unit: Engine 36, have Capt. Smith landline Station 40.

Unit: Engine 40, Engine 36, message received.

This is the quickest method to contact another unit, and carry on a brief conversation without overloading the radio channel. **Do not use the word "clear" at the end of a transmission.**

If you do not know which channel another unit is on, ask the DEC and they will tell you. If you cannot make radio contact with the unit, ask the DEC to assist you, but first try on your own. If radio traffic is heavy, postpone.

Every station is equipped with a console radio. Officers may use the console radio to contact apparatus or other stations on Department business, especially if there is telephone trouble. The same protocol as used for unit-to-unit transmission shall be used.

Transmissions relating to status or change of status can be transmitted as one message to the DEC.

Unit: Control 2, Battalion 2, in service.

DEC: Battalion 2, in service.

or if the message is longer:

Unit: Control 2, Battalion 2.

DEC: Battalion 2.

Unit: Control 2, this was a debris box, units are going in on their own, Battalion 2 in service.

DEC: Battalion 2, in service.

MANUAL MODE

When the dispatch system is required to operate in manual mode because of CAD computer malfunction or for drills, the DEC will broadcast the following message over all radio channels and station intercoms:

DEC: (Tone Signal)

Attention all stations and units, the dispatch system is now in Manual Mode.

or

Dispatching is now in manual mode.

During Manual Mode Operation, dispatching is made by radio only. The telephone will not be used. There is no tone or voice alert. Firefighters on watch must monitor their normal radio channel to receive dispatches. A constant Radio watch shall be maintained. Once dispatched to an incident, units will operate on their normal channel unless directed otherwise.

When a dispatch is announced, DEC will contact the individual units on their normal control channel to verify response.

Any change to the manual mode policy is made by teletype message and radio prior to the Manual Mode Operation.

COMMONLY USED RADIO TERMS AND PHRASES

Clear and concise words and phrases must be used for all types of messages. It is not advisable to set down precise wording for all phrases likely to be encountered in radio conversation. Examples of commonly used words and phrases are listed below:

Affirmative. What you have just said is correct.

Auxiliarized Alarm Box. Buildings or structures often contain alarm boxes connected to SFFD street boxes. These interior alarm boxes are referred to as Auxiliarized Alarm Boxes if the street box actually exists. Interior alarm boxes without a street box are called Phantom Boxes.

Building Alarm Box. A local building alarm box.

Cancel the box. No further assistance required. All responding units are automatically in-service on the air, except those which are held at the scene.

Code 1. Respond at your convenience. For response to an incident that need not be handled immediately.

Code 2. Respond immediately (but non-emergency). For response to an incident which is required quickly. Observe all traffic regulations. Do not use red lights or siren.

SECTION 5. RADIO PROCEDURES

Code 3. Emergency response required. To classify response to an incident as an emergency. Red lights and siren are used.

Correction. An error has been made. The correct version is ...

ETA. Estimated Time of Arrival.

Emergency Traffic. Used for when a unit has an extreme emergency and needs to broadcast a message. All normal radio traffic will stop and the unit that called the Emergency Traffic will be told to give their radio traffic. (Examples would be for a FF trapped, missing, building collapse, etc..)

Full Box. A curtailed box updated. Example: *Attention. All units. Box 1234 is now a full box.*

Negative. What you have just said is wrong. Correct version is then given.

Repeat/say again. Will you repeat your last message.

Repeating. Repeating the last message.

Standby. Listen, but do not transmit.

Street Box. Indicates a fire alarm box that was pulled from the street. It means that no telephone calls have been received and that the Communications Center has no other supporting information.

Testing. To test radio reception and transmission. A short test is a count of one to five. A long test is a count from one to ten.

Unit Dispatch. An incident requiring less than a full assignment, usually one unit is dispatched.

Urgent. Any unit wanting to obtain immediate control of the air to send an urgent message will call and announce urgent.

SECTION 6. FIREGROUND COMMUNICATIONS (ICS)

INITIAL RADIO REPORTS

THE FIRST ARRIVING UNIT ON SCENE OF AN INCIDENT SHALL GIVE A PROPER RADIO REPORT. THE RADIO REPORT SHOULD INCLUDE THE FOLLOWING INFORMATION:

- Unit designation of the unit arriving on scene
- A brief description of the incident situation, (i.e.. building size, occupancy, Hazmat release, multi-vehicle accident etc.)
- Obvious conditions (working fire, hazmat spill, multiple patients, etc.)
- Brief description of Strategy
- Any obvious safety concerns
- Assumption, identifications and location of Command
- Request or release resources as required

Examples:

For a Defensive Structure Fire:

"Engine 1 is on the scene of a medium size warehouse fully involved with exposures to the east. Engine 1 is laying a supply line and attacking the fire with a master stream and hand line to the exposure for search & rescue and fire attack. This is a defensive fire.

For an EMS incident:

"Truck 11 is on the scene with a multi-vehicle accident. Special call two more ambulances and a Rescue Captain. Truck 11 will be Parkway Command."

For a Single-Company Incident:

"Engine 6 is on the scene of a dumpster fire with no exposures. Engine 6 can handle."

Command Post Operations

A command post shall be established at all working incidents. At incidents other than greater alarms, a command post shall be established upon orders of the Incident Commander when the Incident Commander deems such action is expedient to the operations.

Command posts shall be established at a vehicle designated by the Incident Commander. The command post ISS shall maintain communications with the Incident Commander by use of a portable radio on the fire ground channel and shall maintain communications with DEC.

Under extraordinary circumstances, Chief Officers may communicate directly with the DEC with their portable radio, by-passing the command post. Normally, the Incident Commander shall be on the fire ground channel talking to fire ground units.

One of the ISS assigned to command post operations shall report to and remain with the Incident Commander as communications aide.

All serious hazards that are identified at an incident will be transmitted to the DEC. The DEC will rebroadcast the information regarding the hazard over the Control, Command and Tactical channel of the incident.

SECTION 7. MUNI METRO & BART COMMUNICATIONS

A series of repeaters have been installed in the Muni-Metro underground area from the Embarcadero Station to West Portal Station. This repeater system allows full underground communications on channel C7. It provides for complete two-way Department radio communications throughout the Muni underground system.

Two-way radio communications can now be established between portables underground; an underground portable and surface units, both mobile and portable; and an underground portable and the DEC.

Channel C7 is designated as the Fire Department/Muni-Metro radio channel. All radio communications involving units in the Muni subway system, shall be conducted on channel B7.

If distorted reception or faulty transmission is detected, a slight change in position should clear up the problem. Moving a distance of 5 to 10 feet should be sufficient. In addition, there is a telephone system at each Muni-Metro platform location that is connected directly to the DEC. Contact may be established from any of these platform telephones by unlocking the box with the station key and lifting the receiver. A ringing sound is heard. As this ringing sound continues, hold down the push-to-talk switch and say *San Francisco Communications Center, this is Engine ____*. The DEC will answer and you may complete your traffic. When the conversation is finished, hand up the telephone and lock the box.

See the Muni-Metro Operations Manual for details on the use of this system during major tunnel emergencies. There are also communications systems within the BART Transbay tube that connect to the DEC, including the Yellow Fire Phone system.

The BART monitoring system was installed after an Oakland firefighter was killed by smoke in the Transbay tube and is shown in the BART manual as the Yellow Fire Phone System.

This system connects the DEC to:

- The Department's Embarcadero Command Post.
- San Francisco Vent structure.
- Twenty-nine telephone jacks in the tube.
- Oakland Vent structure.
- Oakland Command Post.
- Oakland Fire Alarm.

SECTION 7. MUNI AND BART COMMUNICATIONS

This system is tested during BART drills. The DEC is identified as San Francisco Fire Communications on this system. The Yellow Phone System may also be used by the DEC for directly contacting Oakland Fire Alarm on non-BART incidents. This system is monitored by the DEC at all times.

See Section 3 (BART) and also Section 9 (MUNI) on the Transit Manual for further information on the communications while at BART and MUNI.

SECTION 8. THE COMPUTER-AIDED DISPATCH SYSTEM

OVERVIEW

The DEC dispatch console equipment is connected to computers. The computer files contain a geographic description of the entire city and store routing information to every fire alarm box from the nearest fire station, along with related information.

Telephone alarms are routed to the dispatchers' console. An available call taker answers the phone and keys in the address information. The computer program allows for street name abbreviations and misspellings. Once the call taker has entered the information they press the enter key which sends the call to the dispatcher (hot seat or fleet seat)

The computer program determines the nearest fire alarm box and bases its route information on that box.

The dispatcher computer displays the predetermined apparatus assignment based on the call type.

Once the dispatcher accepts call type alarm assignment they will press the enter button which starts the dispatch to the units. A tone alarm sounds in the stations scheduled to respond and voice communications are automatically established with these stations. Meanwhile, the dispatch information is being sent to the station printer and the units MDT's.

Among the important advantages to the Department from the Computer Aided Dispatch (CAD) system are:

- Faster, more accurate responses to specific incidents.
- Better operational control during multiple major fires in the City.
- Selective signaling to stations.
- Accurate and timely information to the field.
- Support for uniform reporting requirements and fire prevention programs.

CAUTION: When a dispatch is being printed and voice announced, members have sometimes used the PAGE button to alert the station of the response being dispatched. **WARNING - DO NOT USE THE INTERCOM AT THIS TIME.** The intercom PAGE over-rides the voice transmission from the Communications Center and important parts of the dispatch message are not heard through the

station speakers. The station radio must also be on control A1, A2 or A3. If not on one of these channels, there will be no voice announcement in the station.

COMPUTER DISPATCH OPERATIONS

All dispatches are made by a voice announcement accompanied by a print out to all stations due to respond. All units assigned will also receive the dispatch information on their MDT. No dispatches are given by telephone unless absolutely necessary. Units move only on orders from the DEC. All assignments, covers, etc. are specified by the DEC. No unit will respond or cover unless directed to do so by the DEC. A unit will carry its own identity. E-18 will always be identified as E-18 even though covering another unit.

Dispatch information and voice announcements will go only to responding stations except:

- All incidents are announced by radio.

Changing status may be done using the station dispatch terminal or the unit's MDT.

When returning to quarters from a unit dispatch or fire after performing some service, If you are the last unit returning, your unit number will come off the display screen and leave the incident still there. The Communications Center may have a request to make of the last unit to properly end the incident in the system. If two or more units are returning to the same quarters from the same incident they may go AIQ in a single message. If the units are returning from different incidents, they must go AIQ separately.

Upon receipt of a dispatch message to cover the quarters of another unit, press the en route button on the MDT and proceed to the cover company quarters. On arriving there put your unit **AIQ**.

Inconsistencies in our geographic street file are occasionally reflected in dispatches. These problems may show up on a dispatch slip by any of the following examples:

- A cross street is not given as part of the location.
- An ally or non-main street is given as a cross street.
- The address printed out is not between the given cross streets.

If an officer responding to an incident notices any of the above problems, he or she shall make note of them and forward the information on the General Form to the Chief, Bureau of Communications for corrections.

Dispatch Messages

Incident Number	Digits; reset to 0 each month; begins with I (i.e. I0423)
Box Number	Begins with a B, i.e. B1234
Radio Channel	Will show which radio channel to respond on: A1, A2, A3.
Dispatch Console	FD03
Time Received	24 hour clock with : in the middle: 08:15
Source of Alarm	Phone: Box: Station: Radio: Vicinity:
Address & Cross Street	1 Forest Knolls Drive & Christopher
Responding Units	Will show companies responding
Comment	Additional location information or address.
Nature of the Alarm	e.g. grass, auto leaking gas, debris box. etc.
Information	Guard dog on premises, etc.
Date & Time Dispatched	07/02/81 08:15:45

Examples of Dispatch Messages**Unit Dispatch**

```

08007917          2553          A3          FD03          13:55          1st
1001 POTRERO AV, SF (D=3D 22ND ST & 22ND ST)
1A: RS2 88
21ST ST/POTRERO AV
6D1   SEV   RESP DISTRESS
ENTRY          RP KAL\AD:W911-3167 22ND ST, SF
TX: 93 YOM CONSC/BREATHING, NOT ALERT
PRIOR MSC TODAY S0156 (8 MORE)

```

Box Alarm

08007919 5174 A3 FD03 11:02 1st
284 Roosevelt WY, SF (D=3F 15th St & Museum WY)
1A: E13 E2 E28 T13 T12 B1 B2 D2 RS2 TCA15 M38
Park Hill Ave/15th St
SIB Smoke in Building
ENTRY AD: RESD-280 Roosevelt WY – Smith, John\PH: 123-456-7890\
Origin: E911
TX: Smoke coming from roof.... Smells like electrical fire

DISPATCH UNIT DESIGNATIONS

D	Division Chief
B	Battalion Chief
E	Engine
T	Truck
FB	Fireboat
HT	Hosetender
AHT	Attack Hosetender
RS	Rescue Squad
MA1	Mobile Air
MP	Mini Pumper
M	Medic Unit
MCU	Mass Casualty Unit
RC	Rescue Captain
RB1	Rescue Boat
RWC	Rescue Water Craft
LR	Light Rescue
AR1	Arson Squad (4710)
DF1	Diesel Fuel Unit
UU1	Utility/Light Unit
CR1	Cliff Rescue
CBRNE	Chemical Biological Radiological Nuclear Explosive Unit
SR1	Surf Rescue
CD1	Chief of Department
CD2	Deputy Chief of Operations
CD3	Deputy Chief of Administration

ADMINISTRATIVE EMAIL MESSAGES (LOTUS NOTES)

The Department currently uses an email system (Lotus Notes) to communicate general messages throughout the department. The email system is used for the following types of information:

- Head Quarters Administrative details
- Union Information
- New General Orders
- Training Issue
- Meeting announcements
- Ordering Supplies from Bureau of Equipment

SECTION 9. APPENDICES

APPENDIX A: FIRE ALARM BOX OPERATIONS

Every fire alarm street box contains a telegraph key to communicate with the Department of Electricity for emergency use.

All Chief Officers, Company Officers, and Incident Support Specialists shall have the knowledge and ability to perform fire alarm box operations.

All fire alarm boxes directly connected to the fire alarm system are designed to perform two basic functions:

1. To transmit an alarm to the Communications Center.
2. To establish communication by means of telegraph from the fire alarm box to

Communications Center or from Communications Center to the fire alarm box.

The Joker code is to be used for all transmissions for box numbers, company numbers, and all other messages.

APPENDIX B: APPARATUS JOKER CODES

Engine Company	1 - 2 - -
Truck Company	1 - 3 - - -
Division Chief	1 - 4 - - - -
Battalion Chief	1 - 5 - - - - -
Fire Boat	1 - 6 - - - - - -
Attack Hose tender	1 - 7 - - - - - -
Reserve Salvage Co.	1 - 8 - - - - - - -
Foam Unit	1 - 9 - - - - - - - -
(Undesignated)	2 - 3 - - - -
(Undesignated)	2 - 4 - - - - -
Valve Operating Unit	2 - 5 - - - - - -
Searchlight Unit/Utility Unit	2 - 6 - - - - - - -
CO2 Unit	2 - 8 - - - - - - - -
Hazardous Materials Unit	2 - 9 - - - - - - - - -
Ambulance (Code 3)	3 - 1 - - - -
SFFD Communications Unit	3 - 2 - - - - -
Pollution Control Unit	3 - 4 - - - - - -
Fuel Unit	3 - 5 - - - - - - -
Rescue Company	4 - 1 - - - - -
Service Squad	4 - 2 - - - - - -
Cliff/Surf Unit	4 - 3 - - - - - - -

APPENDIX C: STATUS JOKER CODE SIGNALS

The Morse Code is no longer part of the San Francisco Fire Department communication method of sending messages from a fire alarm box.

All telegraph key traffic from a fire alarm box is to be transmitted using the JOKER CODE system.

The following are operational signals:

In-service	2 2	-- --
Unit Dispatch	3 3	--- ---
Breakdown/Unable to complete Assignment (out of service)	4 4	---- ----
Drill/Oil Change (out of service)	5 5	----- -----
Div. Chief Deferred Assignment	6 6	----- -
Special Call	2 2 2	-- -- --
Directed Cover-in Call	4 4 4	---- ---- ----
Physician's Call	8 8 8	----- -
Chaplain's Call	9 9 9	----- -
I acknowledge/I understand	3	---
Repeat telegraph message	4	----
Stand-by/Message coming.	7	-----
Error	10	-----

APPENDIX D: CALLS FOR ASSISTANCE FROM VARIOUS AGENCIES

It may be necessary to use the fire alarm telegraph system to call for assistance from various agencies. The following signals shall be used at the street box:

Police Emergency Assistance	8 - 8 - 1	- - - - - - - - - - -
(Department members being threatened; crowd control; riot conditions)		
Police Traffic Control	8 - 8 - 2	- - - - - - - - - - -
Police Accident Investigation Unit	8 - 8 - 3	- - - - - - - - - - -
Coroner	8 - 8 - 4	- - - - - - - - - - -
P. G. & E. Gas Department	9 - 9 - 1	- - - - - - - - - - -
P. G. & E. Electric Department	9 - 9 - 2	- - - - - - - - - - -
S. F. Water Department	9 - 9 - 3	- - - - - - - - - - -
Red Cross Field Representative	9 - 9 - 4	- - - - - - - - - - -

APPENDIX E: DEFINITIONS OF JOKER CODE SIGNALS

The term **Unit** shall mean Chiefs, Engines, Trucks and/or specialized units.

These Joker Code Signals are to be used when using the Telegraph Key in the fire alarm box.

- 1 – 1** **Request for a Full First Alarm Assignment.** Sender taps 1 - 1 then pulls hook. If a greater alarm is requested, tap out the alarm wanted, i.e., 2 -2, 3 -3, etc., then pull hook.

- 2 - 2** **In-Service.** Follows unit and company identification.

- 3 - 3** **Out-of-Service.** Follows unit and company identification. Used when a unit responds to a unit dispatch.

- 4 - 4** **Breakdown.** Used when a unit, while responding to an alarm, is unable to complete its assignment.

- 5 - 5** **Out-of-Service.** By reason of; away from quarters on a drill; unit is changing oil; disabled other than when responding to any alarm, special call, or cover-in; repairs; when returning from alarm, special call, or cover-in call and is unable to reach its destination.

- 2-2-2** **Special Call.** Shall be used whenever the officer in charge at a fire, requires one or more companies without the necessity of a full alarm assignment. The signal shall be followed by the number of the box, the type of unit requested and, if more than one unit of the same type, the number of units required shall follow the type of units.

APPENDIX F: FIRE ALARM BOX TRANSACTIONS

GENERAL INSTRUCTIONS: These circuits now constitute a secondary communications system for use if all radio and computer communication is lost.

The external door is opened by using the brass key. Internal doors have one of two types of locks. One requires the use of a small key and the other has a slide latch requiring no key. All officers, Incident Support Specialists and suppression companies are provided with keys. Each fire alarm box contains a telegraph transmitting key and a telegraph receiver (sounder). For purposes of recognition, all Chief Officers have been assigned identifying numbers for the transactions of business from a fire alarm.

RANK	JOKER CODE
Chief of Department	- -
Deputy Chief Operations	- - - - -
Deputy Chief Administration	- - - - -
Division No. 1	- - - - -
Division No. 2	- - - - -
Division No. 3	- - - - -
Battalion No. 1	- - - - -
Battalion No. 2	- - - - -
Battalion No. 3	- - - - -
Battalion No. 4	- - - - -
Battalion No. 5	- - - - -
Battalion No. 6	- - - - -
Battalion No. 7	- - - - -
Battalion No. 8	- - - - -
Battalion No. 9	- - - - -
Battalion No. 10	- - - - -

Where it is necessary for an officer or member of the Department to make use of the communications afforded by a fire alarm box, the district number in which the box is located should be used.

Speed of transmissions by the person operating at the box and by the member of the Department of Electricity at Communications Center shall not exceed two strokes per second by Joker Code.

If no answer is received from the Department of Electricity, repeat the signal and allow a reasonable time for them to acknowledge. If there is still no answer or, if the box has a dead touch and sound, go to the next street box and transact your business. As soon as possible, advise the Department of Electricity of the condition of the box from which your signal could not be transmitted.

If a signal is not understood by the person operating at the street box, break the Department of Electricity's transmission by holding down the telegraph key. Release it after several seconds and if the line is clear, ask for a repeat of the misunderstood transmission by use of the repeat signal 4. The same procedure is applicable from the Department of Electricity's end of the communications.

The stand-by signal (7) is used from either the street box end or the Department of Electricity end. This is intended to hold the receiving party's attention for an impending signal.

Errors in sending signals between the operator and the Department of Electricity are corrected by first breaking the transmission, then inserting the 10-10 signal, followed by the correct signal. No signal is complete until properly acknowledged.

Members using the telegraph key in the fire alarm box, are communicating with personnel of the Department of Electricity. The Department of Electricity personnel are located in a separate section in the Communications Center. Any message received by them has to be relayed to personnel of the Communications Center. Dispatch personnel will then transmit the needed assistance over the system. There is no direct link-up between the fire alarm box telegraph key personnel of the dispatch section at the Communications Center.

When a fire alarm box is to be used, it shall be done as follows:

Break: Made by holding down the telegraph key for 4 seconds. A break is used in all cases when calling in from a box. It shall be used as a precedent to all Joker Code calls. The purpose is to summon the attention of personnel of the Department of Electricity.

Example: Division One is at box 1234.

BREAK	_____	Hold key down for 4 seconds.
1 - 2 - 3 - 4	- - - - -	Box 1234
1 - 4 - 1	- - - - -	Division One
3	- - -	I understand or acknowledgment from DOE
2 - 2	- - -	Second Alarm (Pull hook on fire alarm , to request a 2nd alarm.)

Additional alarms would be struck out as shown below:

3 - 3	- - - - -	Third Alarm
4 - 4	- - - - -	Forth Alarm
5 - 5	- - - - -	Fifth Alarm

If while standing at a box:

- You hear a joker message from another box, do not interfere but listen.
- You hear someone else coming into a box, do not interfere. It may be a Chief in another part of the city operating from a box which is located on the same circuit as yours or it may be a Department of Electricity operator testing a box located on the same circuit as yours.
- You hear a box being struck, it is a box pulled from the street at another location yet, on the same circuit as yours.

Chiefs may enter and request a greater alarm from a box that is not an original box. It is obviously better practice and far less confusing if all traffic for greater alarms is conducted over the original box. Whether this is done at the original box, or from another box, the original box number is to be used.

One or more pieces of any particular type of equipment may be Special Called as follows:

Division Chief at the Box:

BREAK 2 2 2 1 2 3 1 4 1

2 - 2 - 2	- - - - -	Special Call signal
1 - 2	- - -	Code for Engine Company
3	- - -	Number of units wanted
1 - 4 - 1	- - - - -	Division 1 signature

The special call signal, followed by the signal for the type of equipment desired, followed by the number of such type needed will summon them. If only one unit is needed, eliminate the third step.

If it is desired to special call equipment to a box other than the box number from which the operations is taking place, merely insert the box number to which the response is desired after the special signal:

BREAK 2 2 2 2 1 1 1 1 2 1 4 1

In the above example, only one Engine Company is wanted at box 2111.

Break Down (4-4) or Out-of-Service (5-5) Signal

Each Company Officer and each company member is to be capable of using a fire alarm box for the purpose of putting his company or unit out of service either 4-4 or 5-5. When a telephone is not immediately available or radio equipment is inoperative, then the fire alarm telegraphic system is to be used.

When it becomes necessary for a Company Officer or member to use a box, he or she is to use his company number or designation as his signature.

Break Down (4-4) or Out-of-Service (5-5) Signal

Engine 5 at a box:

BREAK 1 1 1 2 1 2 5

1112	- - - -	Box number
1 2	- -	Code designation for an Engine Company
5	- - - -	Company number
3	- - -	DoE at Communications Center Answers

BREAK 1 2 5 4 4

1 2	- -	Code designation for an Engine Company
5	- - - -	Company number
4-4	- - - - - -	Break down; unable to complete assignment

Use the same format when going 5-5.

HIGH PRESSURE CODES:

2-2-2-2	- - - -	High Pressure Call
3	- - -	Jones Street Tank
4	- - - -	Ashbury Tank
5	- - - - -	Twin Peaks Reservoir
6	- - - - - -	Pumping Station #1

7	-----	Pumping Station #2
8	-----	Fireboat to H.P. Manifold
3 - 10	--- -----	Trouble in H.P. System Lower Zone
4 - 10	---- -----	Trouble in H.P. System Upper Zone

All Joker Code signals pertaining to the High Pressure Code shall be preceded by the High Pressure Call (2-2-2-2).

When calling for Twin Peaks Pressure from a box in the Lower Zone, pressure from Ashbury Zone must be called first, followed by a call for Twin Peaks Pressure.

Ashbury Pressure will automatically be admitted to the Lower Zone whenever a greater alarm is requested from locations in or adjacent to infirm areas that are served by the system.

Company Officers responding to a greater alarm are to take particular notice of their dispatch print-out to see if either Ashbury or Twin Peaks pressure is in service. If so, the officer should alert his pump operator to be aware of the added zone pressure.

When calling Pumping Stations or the Fireboat into service, the signal must include the zone pressure desired and must be the same pressure then in service - i.e. Jones, Ashbury, or Twin Peaks Reservoir.

When an Incident Commander requires Ashbury Tank or Twin Peaks pressure from a box, handle the request as follows:

BREAK	2	2	2	2	4	2	2	1	4	1
2 2 2 2	--	--	--	--						High Pressure Joker Code Signal
4	----									Ashbury Tank Pressure
2 2	--	--								In-service
1 4 1	-	----	-							Division 1 signature

For Twin Peaks Pressure, substitute **5** signal for the 4 signal (To put the pressures out of service, substitute the 3 3 for the 2 2 signal).

Ashbury pressure is wanted at Box 2111 (Lower Zone)

<u>2 2 2 2</u>	<u>2 1 1 1</u>	<u>4</u>	<u>2 2</u>
H.P. Call	Box 2111	Ash. Tank	In Service

When Twin Peaks pressure is wanted from the same box:

<u>2 2 2 2</u>	<u>2 1 1 1</u>	<u>5</u>	<u>2 2</u>
H.P. Call	Box 2111	Twin Peaks	In Service

When there is no further use for either Twin Peaks or Ashbury pressure and normal conditions are to be restored:

<u>2 2 2 2</u>	<u>2 1 1 1</u>	<u>5</u>	<u>3 3</u>
H.P. Call	Box 2111	Twin Peaks	Out of Service

Followed by:

<u>2 2 2 2</u>	<u>2 1 1 1</u>	<u>4</u>	<u>3 3</u>
H.P. Call	Box 2111	Ash. Tank	Out of Service

When Pumping Station 1 is required from Box 1112 (Lower Zone):

<u>2 2 2 2</u>	<u>1 1 1 2</u>	<u>6</u>	<u>3</u>	<u>2 2</u>
H.P. Call	Box 1112	P.S. #1	Lower Zone	In Service

If Ashbury pressure is in service and Pumping Station 1 is wanted to pump water into the mains at the same time:

<u>2 2 2 2</u>	<u>1 1 1 2</u>	<u>6</u>	<u>4</u>	<u>2 2</u>
H.P. Call	Box 1112	P.S. #1	Ash. Tank	In Service

When Pumping Station 1 is wanted to stop pumping (from either Zone):

<u>2 2 2 2</u>	<u>1 1 1 2</u>	<u>6</u>	<u>3 3</u>
H.P. Call	Box 1112	P.S. #1	Out of Service

<u>BREAK</u>	<u>2 2 2 2</u>	<u>6</u>	<u>4</u>	<u>2 2</u>
--------------	----------------	----------	----------	------------

2 2 2 2	High Pressure Signal
6	Pumping Station # 1
4	Ashbury Pressure
2 2	In-Service

Department of Electricity at Communications Center answers **3**. To put the pumping station out of service, substitute 3-3 in the above example.

When two or more Joker Code signals are made in continuity, it is not necessary to sign after each call. Separate each call by a break and sign at the end of the last call.

SPECIAL BOX PROCEDURES: Occupancies protected by the A.D.T. system are assigned a fire alarm box number (phantom box). The fire alarm box transactions are to be conducted over the closest street box.

Example: A fire is in progress in the premises at 643 Front Street, box 1118. A second alarm is requested. Go to the nearest street box and transmit:

BREAK 1 1 4 3 1 4 1 (1143 is nearest box)

Department of Electricity at Communications Center answers 3

2 2 1 1 1 8 1 4 1 (the ADT box number)

Department of Electricity at Communications Center answers 3

2 2	2nd Alarm
1118	ADT Box Number
141	Division 1 Signature

APPENDIX G: SFFD METS LOCALS

Headquarters, Bureaus, etc.

Ashbury Tank	2350
Assignment Office	4265
Bureau of Equipment	2248
Central Radio Station (CRS)	3027
Chief of Department - office	4281
Comm. Center - Dispatch	2268
Comm. Center - Paging	2278
Comm. Center - Chief	2272
	4013
Deputy Chief - Admin.	4245
Deputy Chief – Operations	2275
Division of Training	2280
Earthquake Preparedness	4431
Fire Marshal	4300
Headquarters - Chief's Office	4281
Jones Street Tank	2351
Management Information System	4297
Management Services	4250
Pump Station No. 1	2352
Pump Station No. 2	2353
Radio Shop	3045
Support Services	4251
Telephone Repair - METS	4052
	4059
Water Supply Superintendent	4252

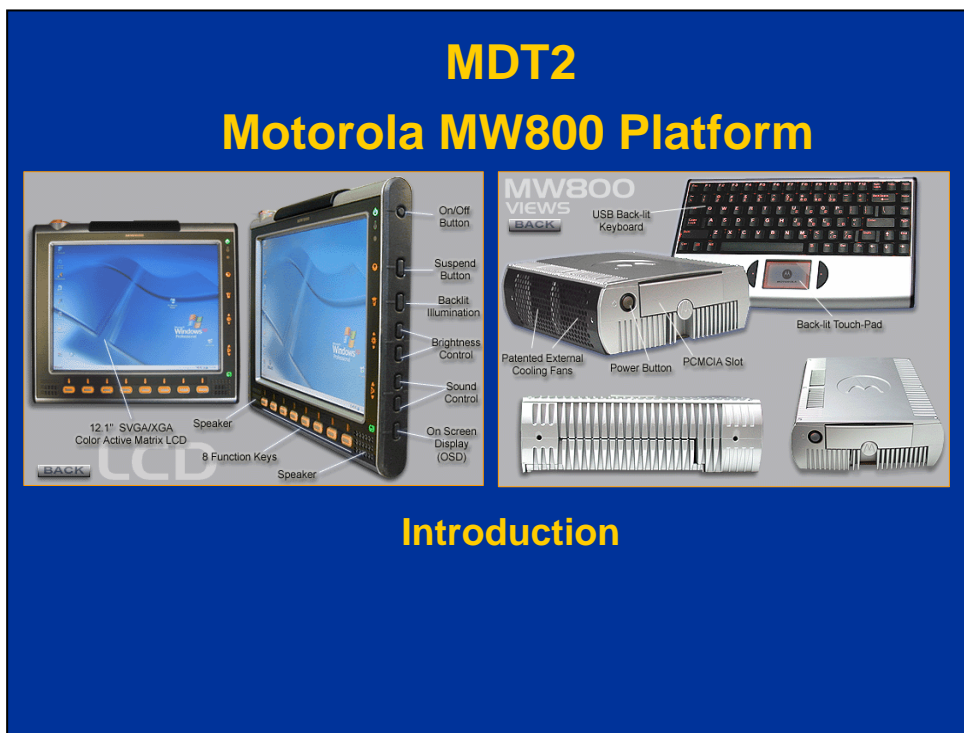
Fire Stations

Station 1	2201
Station 2	2202
Station 3	2203
Station 5	2205
Station 6	2206
Station 7	2207
Station 8	2208
Station 9	2209
Station 10	2210
Station 11	2211
Station 12	2212
Station 13	2213
Station 14	2214
Station 15	2215
Station 16	2216
Station 17	2217
Station 18	2218
Station 19	2219
Station 20	2220
Station 21	2221
Station 22	2222
Station 23	2223
Station 24	2224
Station 25	2225
Station 26	2226
Station 28	2228
Station 29	2229
Station 31	2231
Station 32	2232
Station 33	2233
Station 34	2234
Station 35	2235
Station 36	2236
Station 37	2237
Station 38	2238
Station 39	2239
Station 40	2240
Station 41	2241
Station 42	2242
Station 43	2243
Station 44	2244
Fireboats	2235

APPENDIX H: MOBILE DATA TERMINALS (MDT's)



Contents	Page
Introduction	2
Motorola Hardware	3
Navigation Overview	4
MAIN screen START / OPON	5
OPON window	6
Dispatches and Messages	7
Status Screen: Basic Unit and Incident queries	8
Patient Transport Screen	9
Patient Non-Transport Disposition	10
COMMAND screen - MDT Queries	11
COMMAND screen - MDT Messaging	12



The SFFD selected the Touch Screen Motorola MW800 MDT as the replacement for the first generation Panasonic laptop MDT.

Note: unlike the Panasonic laptops, the Motorola MDT are fixed mounted.

If a company equipped with the new Motorola MDT switches into a relief apparatus, then they will need to pickup a spare Panasonic laptop from the following locations:

DTIS Radio Shop 901 Rankin: Monday through Friday 0700-1600 hrs.

BOE 25th St.: Weekends and after 1600 hrs.

When switching out of a relief apparatus, the Panasonic laptop must be removed and returned to the above locations. Otherwise the Engine batteries will be drained.

Any issues with the Motorola MDT should be documented by calling the DTIS Help Desk at 558-3877.



Trouble Shooting from the Field

The primary reasons why an MDT does not accept status changes are:

1. The Company switched apparatus, but did not call the DTIS Help Desk 558-3877 to notify of the change (XID Change)
2. The assigned member did not OPON afterward (see Page 5-6)

If you fail to perform the MDT OPON you will receive dispatches, but may not be able to perform status changes or make queries, for example En Route, On Scene.

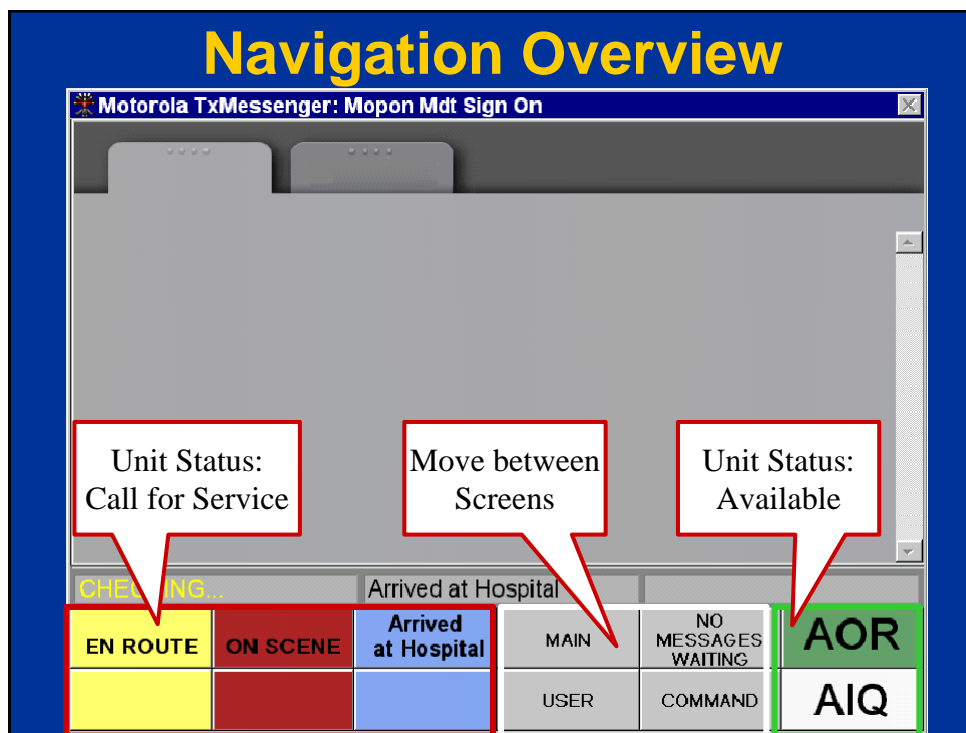
Note: unlike the Panasonic laptops, the Motorola MDT are fixed mounted, and are serviced exclusively at the DTIS Radio Shop, 901 Rankin.

Hardware Overview

The Motorola platform has several external adjustments (shown above).

Motorola Functions	Used for
1. On / Off	Restarts the hardware and software
2. Suspend Function	Saving power – Dispatches Stored
3. Screen: On / Off / Back light	Saving power, tactical, and low light. Continue pressing to restore display.
4. Screen Brightness	Adjust as required
5. Speaker Volume	Adjust as required

The 8 Orange Function Keys and Red Emergency Button are not currently utilized.



Navigation Overview

Note: All Navigation is via the touch screen.

Unit Status Functions

ENROUTE

ON SCENE

Arrived at Hospital

AOR

AIQ

Description

Responding

On Scene

Transport Complete

Available on Radio

Available in Quarters

Screen

MESSAGE/ NO MESSAGES WAITING

MAIN

USER

Used for

View Dispatches and Messages

OPON, OPOFF, Day/Night Function

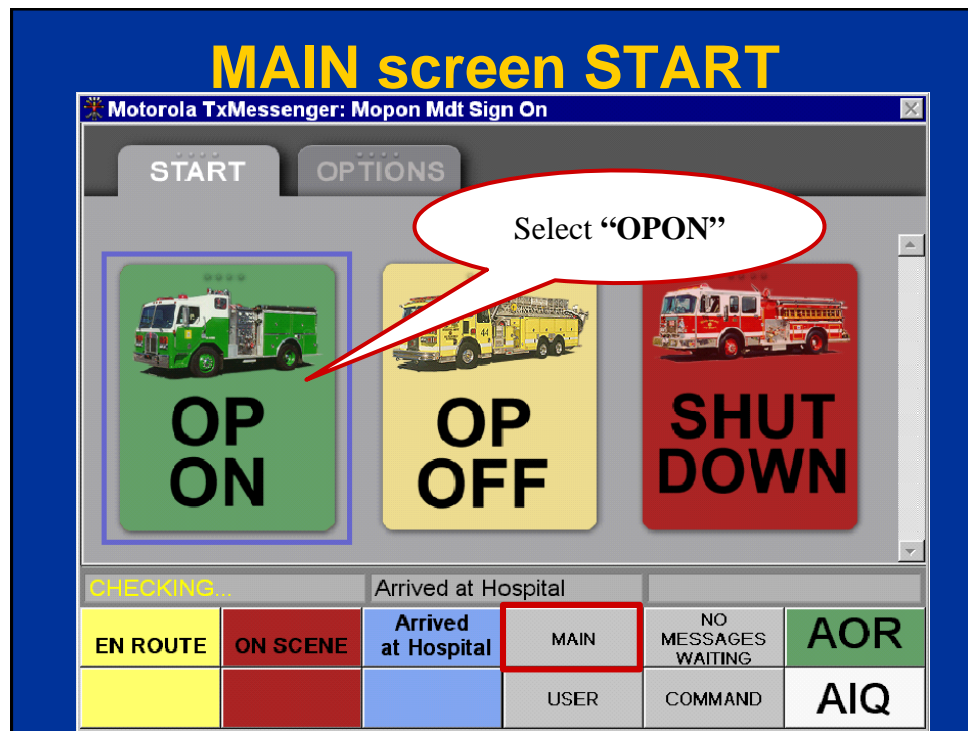
Ambulance Transport, Arrived Hospital,

Non-Transport Disposition, and 4

Common Queries

COMMAND

MDT Queries and Messaging



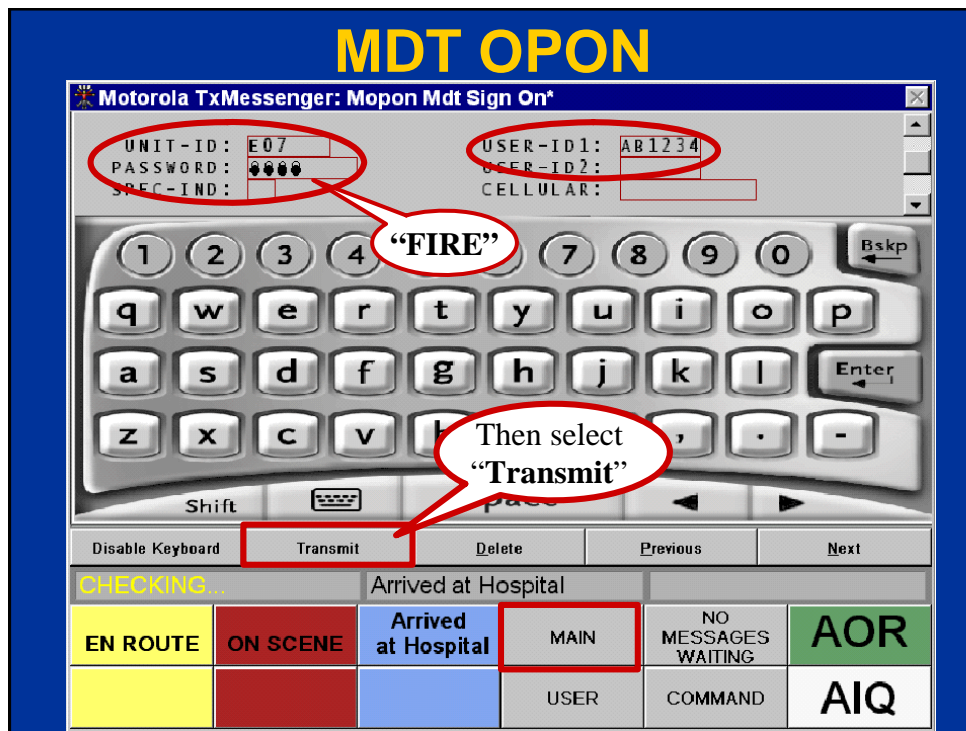
MAIN screen START

To move to this screen, select **“MAIN”**.

Function	Description
OPON	Brings up the OPON screen
OPOFF	Use only if directed by Help Desk
SHUTDOWN	Use only if directed to by Help Desk

MAIN Screen OPTIONS

DAY/NIGHT Modify display for night viewing



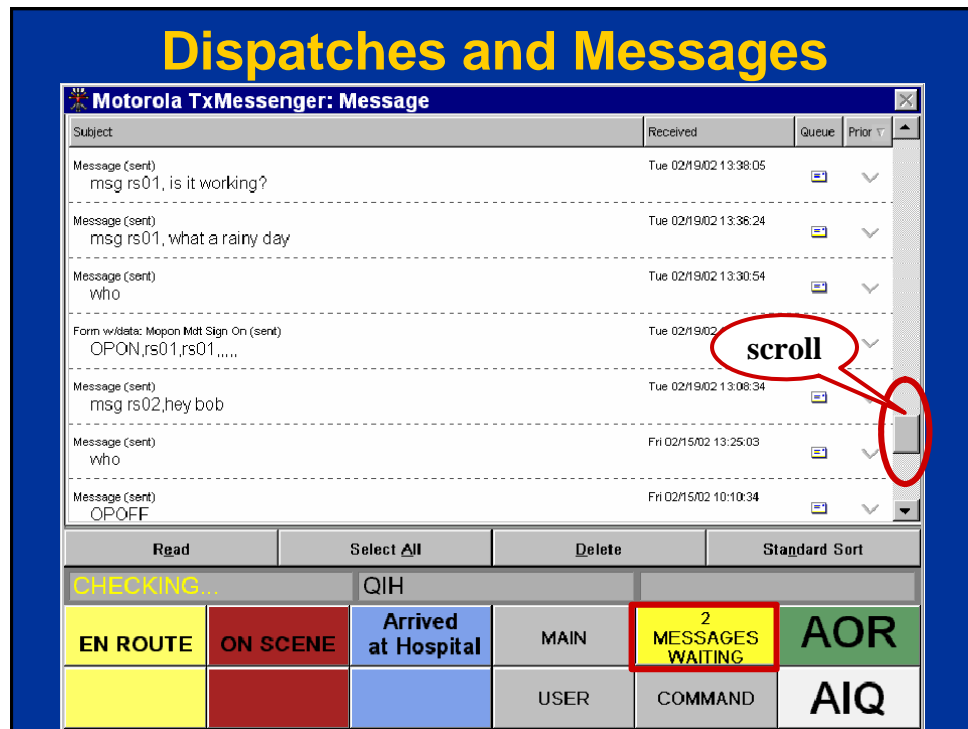
MDT OPON

If you fail to perform the Daily MDT OPON you will receive dispatches, but will not be able to perform status changes, for example En Route, On Scene.

Daily Company Officer and Ambulance Personnel Responsibilities:

0800 Daily MDT OPON: log on to your apparatus MDT as described below:

- 1) **Select the “OPON” screen:**
Shown on the previous page
- 2) **Complete the following (shown above):**
 - **UNIT-ID:** for example “E07”
 - **USER-ID1:** for example “AB1234”
 - **PASSWORD:** “FIRE”
- 3) **Press “Transmit”**
- 4) **You will receive a message confirming a successful OPON**



Dispatches and Messages

Dispatches and Messages are shown in a window similar to an Email style Inbox. When you receive dispatches or messages selecting the “Messages Waiting” icon (shown above) brings you directly to the dispatch message.

Note the following functions:

Delete One Message at a Time

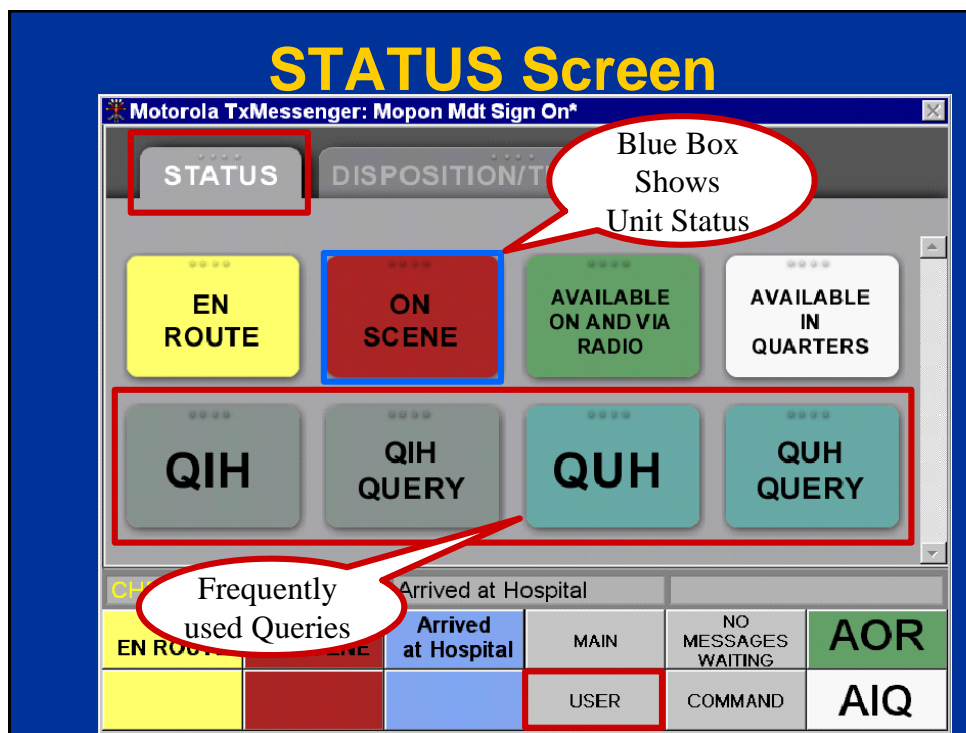
Select All Selects all messages for deletion

Received Sorts the messages in order or reverse order received

Scroll Bar (shown above) move the slider up / down

Press a Message Twice to Open

Select the Message Waiting Icon Will return you to message “Inbox”



Status Screen

From the **USER** screen select **STATUS**.

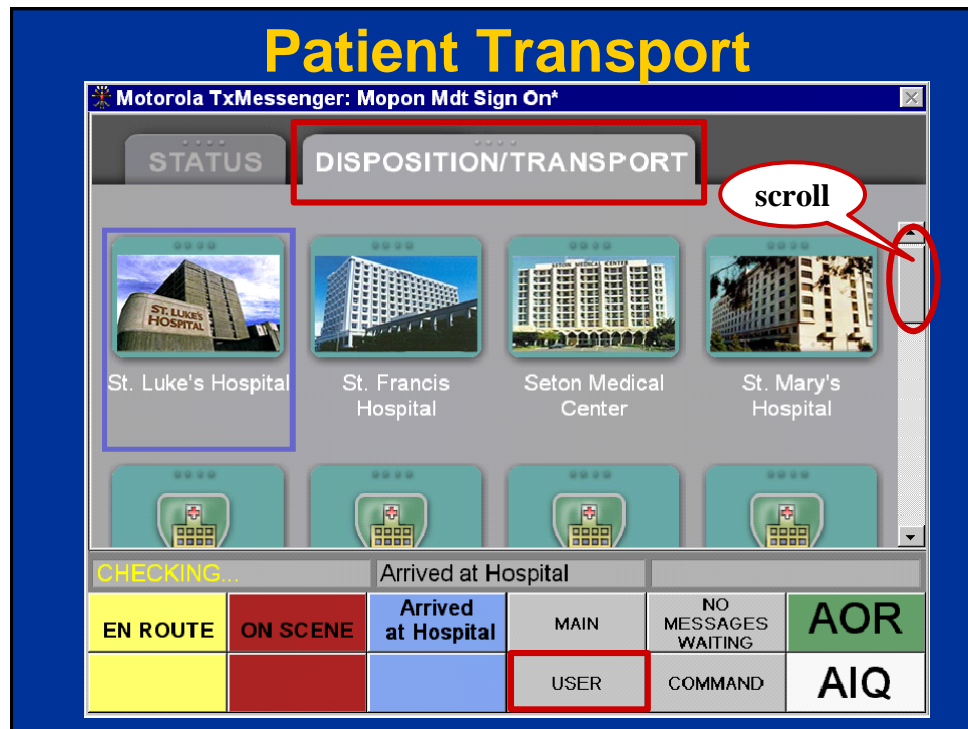
Current Unit Status

A blue box (shown above) will confirm what your current unit status is, for example "On Scene"

These 4 larger keys can also be used to change your unit status; however it is suggested to use the lower status keys to reduce the chances of accidentally selecting AOR or AIQ.

Common Queries

The 4 common queries pertaining to Units and Incidents.



Patient TRANSPORT Screen

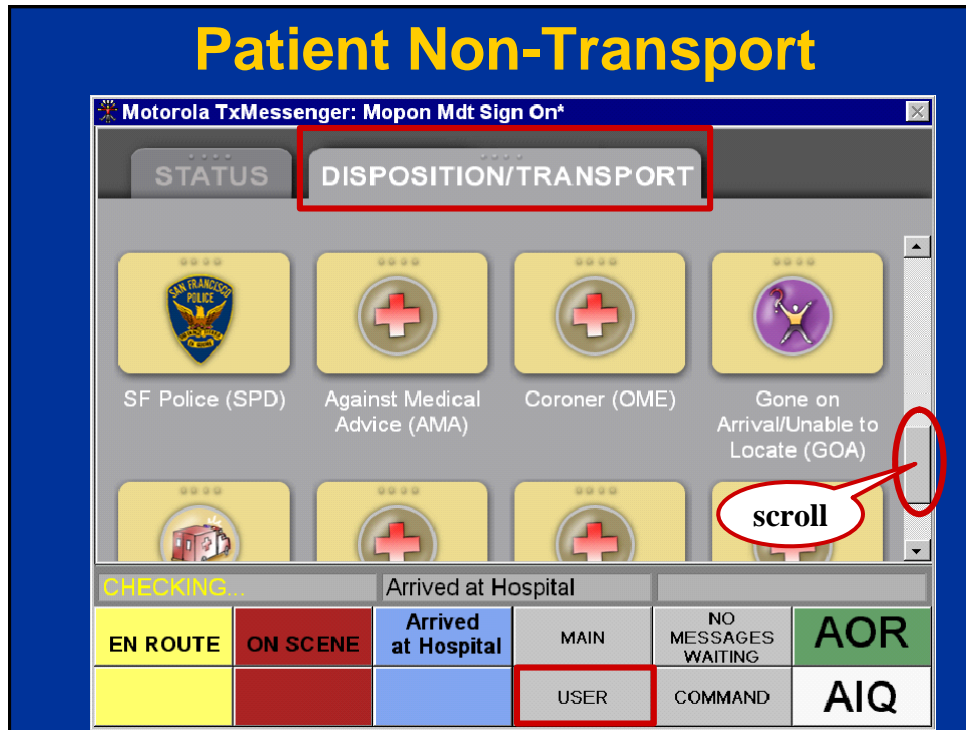
From the **USER** screen select **Disposition/Transport**.

Ambulance personnel are requested to use their MDT to identify which hospital they are transporting to.

Confirm via radio that the desired hospital is open to Ambulance patients.

Scroll to and then press the appropriate hospital button.

Upon arrival select the “**Arrived at Hospital**” button.



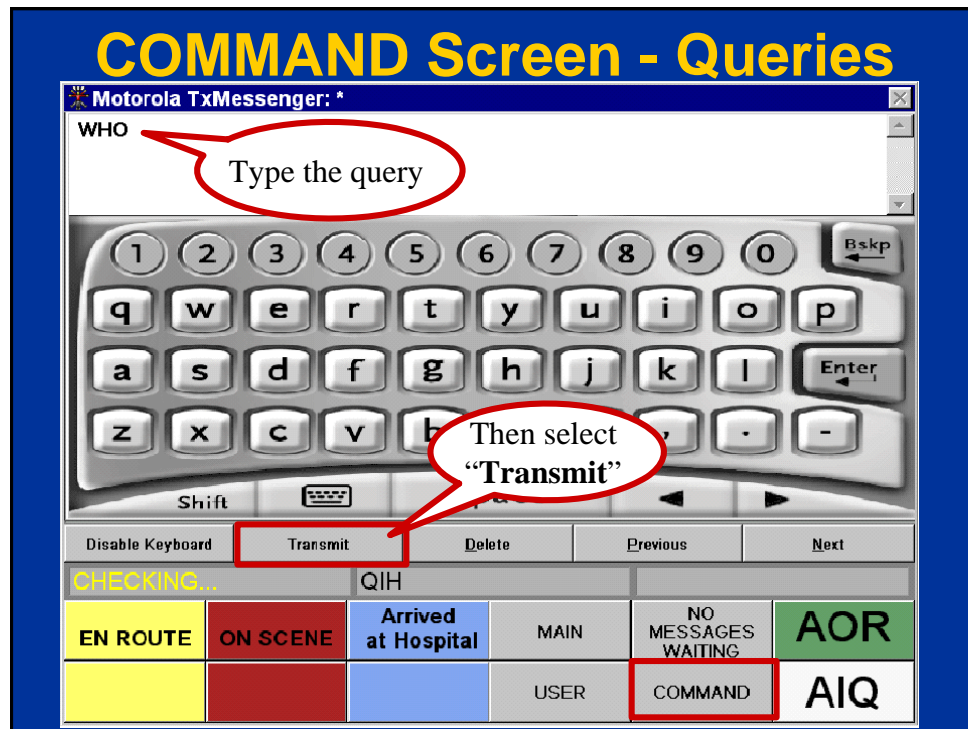
Patient Non Transport DISPOSITION Screen

From the **USER** screen select **Disposition/Transport**.

Ambulance personnel are requested to use their MDT to give an incident disposition prior to going **AOR** after a patient non-transport.

Use the Scroll Bar (shown above) to find the appropriate Non-Transport Disposition key.

After selecting a disposition press **AOR**.



Command screen MDT Queries - type a query then press “Transmit”

Command + “ALL” : City Wide Query (example **QU ALL**)

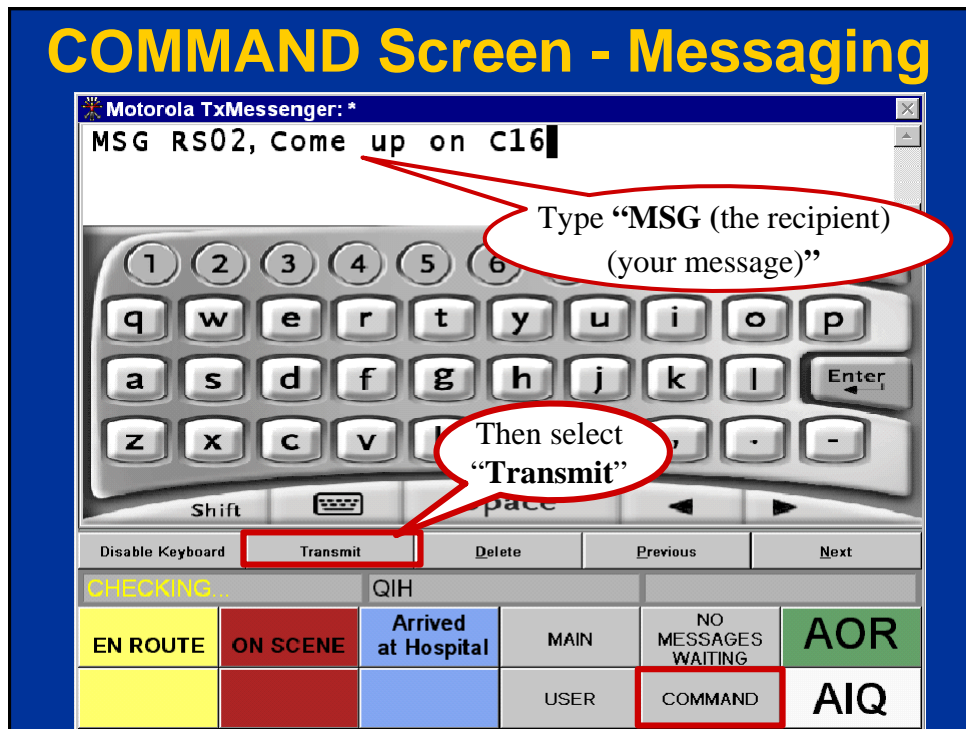
Command + “UNIT” :Unit Query (example **QU E03**)

Command (only) : Battalion Query (example **QU**)

<u>Command</u>	<u>Description</u>
WHO (NEW)	Who is logged onto unit MDT. <u>DO NOT “WHO ALL”</u>
QL (NEW)	Query Log (Personnel On Units)
QU (NEW)	Query Unit Status
QU HO	Query Hospital Status
QUH	Query Unit History
QUHR	Query Unit History (Reverse)
QI	Query Incidents
QIH	Query Incident History
QOH	Query Officer History
QAU	Query Available Units
QO	Query Out of Service Units
DH	Display Hydrants*
QRU	Query Route* **

***Note:** Must be specific to company on active incident, for example **“DH E03”**

****Note:** Unit status must be “En Route”



COMMAND screen MDT Messaging

The MDT provides a 2 way messaging function between the DEC to Field Unit MDT as well as MDT to MDT. Department Rules and Regulations pertaining to Radio use will apply to MDT Messaging as well for the following reasons:

MDT Messaging is recorded and serves as a legal record of SFFD activities.

Messaging effects overall MDT system performance and should be restricted to communications that benefit operational activities.

To Use MDT Messaging:

- 1) Select "Command" to bring up the "Command Window"
- 2) Type in the following format, including the comma and spaces: "MSG recipient, your message"
- 3) Select "Transmit"

Recipient

FD01 - FD08

CT01 -CT06

SU01 -SU03

D1 - D3 / B01 - B10 / RC1 - RC4

E##, T##, RS#, M##, RA##

Description

CECC Dispatchers

CECC Call Takers

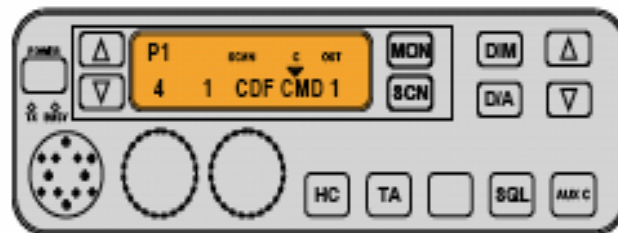
CECC Supervisor

AC / BC / RC

Field Units

APPENDIX I: KENWOOD MOBILE RADIO

Operating Instructions for the Kenwood Model TK-790 Mobile Radio



1. Kenwood TK-790 Cal Fire Mobile Radio Features

The Kenwood Model TK-790 (Cal Fire Version software) was developed specifically for Cal Fire based on operational needs. Many North Zone Fire Departments utilize these radios in their mobile equipment. Some of the radio features are:

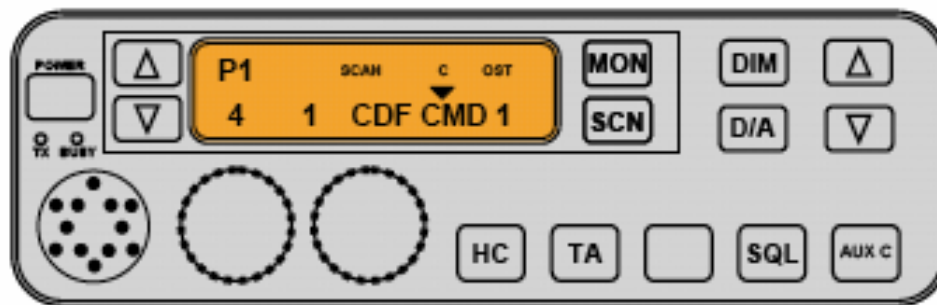
- 254 Channels
- Alpha-numeric display
- 45 Watts power output
- 1 group user modifiable (COMMAND GROUP)
- 16 Repeater tones available
- User modifiable scan with 2 levels of priority
- 1 Direct access channel button (Home Channel)
- Display Dim Button

The 254 channels are divided into 20 plus groups and attempt to mimic each agencies VHF radio channel configuration.

In addition to the 20 plus groups, there is a "Command Group". This command group can be any number of channels and the frequencies that are taken from any of the individual Groups. The command group can be created or deleted at any time by the user.

This radio is capable of 16 CTCSS (Continuous Tone-Coded Squelch System) capable of accessing mountain top repeaters.



The next page shows a picture of the Cal Fire Control Head.



The button operation of each function of the control head is listed below:

- **[POWER]**- Button used to turn radio off and on.
- **[Δ], [▽]** Group up and down arrows- These two buttons control the group locations and are located just to the right of the power button.
- **DISPLAY AREA**- The display example shows the following:
 - **P1**- Shows that channel is assigned as Priority 1.
 - **SCAN**- Shows that the scan feature is activated.
 - **Ⓢ**- Shows Command group is currently selected.
 - **OST**- "Operator Selectable Tone" Shows that a tone as been selected.
 - **▼**- Down arrow shows that channel is in scan list.
 - **4**- Group number. Can be 1-20.
 - **1 CDF CMD 1**- Channel number and name displayed with up to 11 characters.
- 1. **[MON]**- Button used with the **[SCN]** button to define Priority 2.
- 2. **[SCN]**- button. Used to turn scan on and off.
- 3. **[DIM]**- button. Used to dim the display.
- 4. **[D/A]**- Used to delete or add a channel from scan.
- 5. **[Δ], [▽]** Tone up and down arrows- Located on far right. Used to change tones.
- 6. **Volume knob** (Left round knob under display) - Adjusts volume of radio.
- 7. **Channel knob** (Right round knob under display) - Selects channels.
- 8. **[HC]**- Home channel. This button is pre-programmed to go directly to your main dispatch channel.
- 9. **[TA]**- Talk Around, Direct or Car to Car.
- 10. **[SQL]**- Squelch control.
- 11. **[AUXC]**- Use this to add or delete a channel in the command group.

2. Kenwood TK-790 Cal Fire Mobile Radio Operations

- Power [POWER] - Push this button once to turn on the radio and push again to turn off. *Note: The Kenwood Mobile radio is designed not to lose any operator selectable features on power down. The radio will "remember" what it is last told to do upon re-power.*
- Group up and down arrows [], [] - These two buttons control the group locations and are located just to the right of the power button. Press the up arrow to go up from groups 1 thru 20. Press the down arrow to go from groups 20 down to 1. Pushing again below group 1 puts you into the "Command Group". (If the command group has been created by the operator)
- Home Channel [HC] - This button is used if you want to go to your home channel. Pressing this button will take you directly to your Home Channel, from any group in the radio. When this button is pushed again, it takes you back to the last group and channel you were on.
- Talk Around [TA] - To talk directly to another radio without using a repeater (car to car), press the [TA] button. Notice the TA symbol in the display
- Squelch [SQL] - To adjust the squelch, press the [SQL] button. The squelch can then be adjusted by turning the channel selector. Once the squelch is set, press the [SQL] button again to resume normal operation.
- Command Group [AUX C] - Press this button to add or delete a channel from the command group. This feature is discussed further in these instructions.

- **Scan Feature-** Press [SCN] to start or stop the scanning sequence. You can only scan one group at a time. You cannot scan multiple groups. When you activate scan, a tone sounds, and the SCAN icon appears on the display. When a signal is received while scanning, the scan will halt, the audio is unmuted, and the channel name appears in the display.

This radio has the capability to add or delete any channel from within the same group by rotating the channel selector knob to the desired channel you want to add (or delete) in scan and pressing the [D/A] (Delete/Add) button. Press once to add a channel and press once to remove the channel from scan. The steps to add or delete a channel to scan are as follows:

1. Confirm which group you are going to scan.
2. Make sure Scan is OFF.
3. Rotate channel selector knob to the channel you want to add to scan.
4. Press [D/A] button. The down arrow appears in the display. That channel is now in the scan list. Move on to the next channel to add, and repeat above.
5. To remove a channel from the scan list, repeat as above except when you go to that channel you will press the [D/A] button and that will remove the down arrow icon and that channel will be removed from the scan list.

Note: There is a way to temporarily remove an unwanted channel from the scan list by doing the following:

While in the scan mode, and the scan is stopped on the channel you want to temporarily delete from scan, press the D/A button once and this channel is now out of scan. This channel will return to the scan list if the radio is powered down or the scan button is pressed again.

- **Priority Scan Mode** This radio has the capability of two levels of Priority Scanning. They are called Priority 1 and Priority 2. Priority 1 takes precedence over all other scanned channels in the group including Priority 2. Priority 2 takes over all scanned channels except Priority 1. This means you now have a way to have any number of channels in scan and have two levels of priority.

An example of this would be setting up a scan group on an Incident with Command and Tactical channels as Priority 1 and 2 and other lesser priority channels in the Scan group.

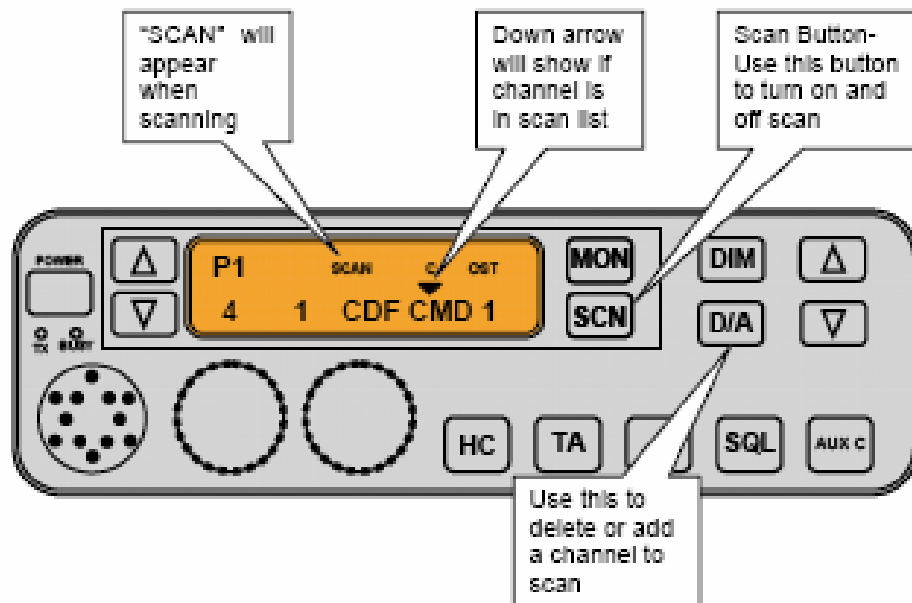
Priority 1 Channel Assignment

The Priority 1 channel is by default the channel you have selected in the display before pressing the scan button. In other words, when you want a specific channel to be priority, rotate the channel selector to that channel and stop, press [**SCN**]. This channel is now your Priority 1 channel. The radio will always transmit on the priority channel when in scan mode.

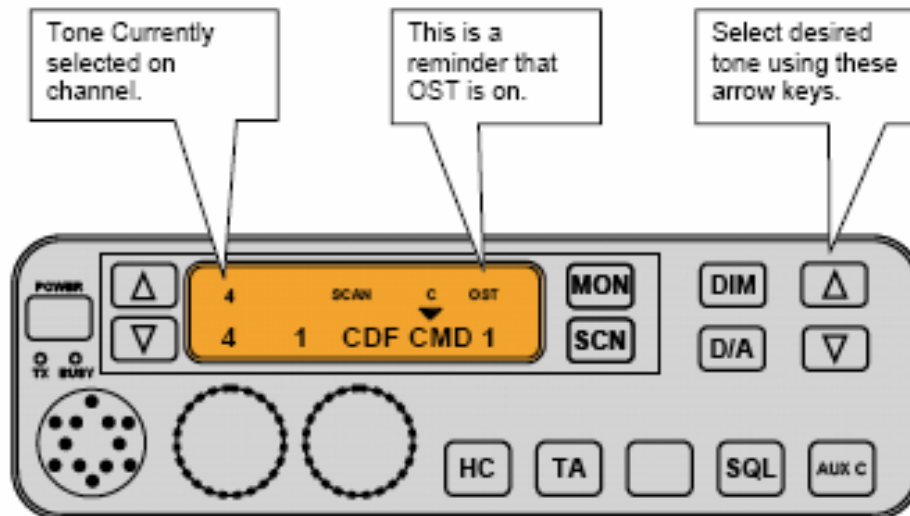
Priority 2 Channel Assignment

1. Turn Scan off. (Press [**SCN**]).
2. Rotate channel selector knob to desired channel for Priority 2.
3. While holding down the [**SCN**] button, press the [**MON**] button 2 times. Priority 2 channel is now set. PP (Programmable Priority) shows in the display.
4. To make another channel Priority 2, repeat step 1.

Note: To activate any of the Scan or Priority features or to change any feature of scan or priority, the SCAN feature must be turned off.



- Using the Operator Selectable Tone- The TK-790 mobile radio uses the two up/down arrow keys, (upper right hand corner), to cycle thru up to 16 custom CTCSS encode tones for access to repeaters. For safety, the radio operating system does not permit OST (Operator Selectable Tone) on channels that have been pre-assigned a transmit tone via programming.



Operator Selectable Tone memory:

The TK-790 automatically memorizes the last OST the user set for a particular channel, even when the radio is turned off or unplugged. Different operator selectable tones can be assigned, or re-assigned, individually to any channel desired. You can have different tones for different channels i.e.: CDF C1 (Tone 2) and MVU LOC (Tone 4) etc. The radio will always remember which tone the user assigned or if no operator selectable tone was assigned to a particular channel at all. Once tones have been assigned for a particular channel, the operator need only change the channels, tones stay fixed to those channels until changed.

COMMAND GROUP OPERATION

This radio has the ability to setup a user programmable command group separate from the other 20 groups. This group is capable of any channels from any of the groups. There is one button [AUX C] that adds or deletes channels from this group.

To use this command group, simply do the following: (Turn Scan off 1st!)

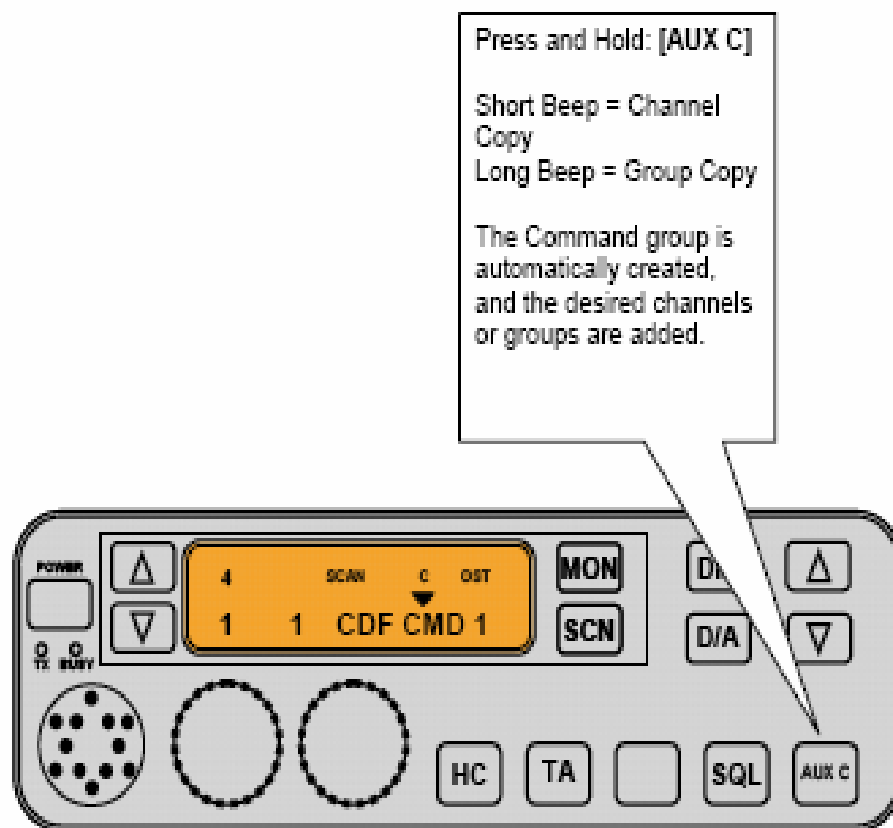
1. Use the channel select knob to dial up the desired channel to add to the command group from any group in the radio.
2. Press and hold the [AUX C] button until you hear a short beep and a momentary © icon appears on the display.
3. To add additional channels continue same procedure as above.
4. To Add a whole group – hold [AUX C] for 10 seconds or until you hear the long beep. The whole group will now be copied into your command group.
5. When finished selecting channels for the command group, press the group down arrow until the icon © shows in the display. *(This will be one step below Group 1)*
6. You are now in the command group. You must now re-define Priority 1 and 2 channels if so desired at this time and any channels in scan that you want.
7. To remove channels from the command group press [AUX C] until the channel disappears and you hear a short beep.
8. If you want to remove the whole group at once, press and hold the [AUX C] (while your in the command group) button for 10 seconds or until you hear the long beep, and the entire group will be gone. The radio will revert to group 1.

It is important to understand that the command group is USER programmable. YOU define what you want in this group. This group will in most cases be your own day to day operating group. When you go out of county, etc. you can add channels you need or you can erase that group, build a new one. Then when you return to your area, rebuild your day to day group again.

Listed on the next pages are several drawings showing the operation in detail:

COMMAND GROUP OPERATION

Adding channels to Command Group

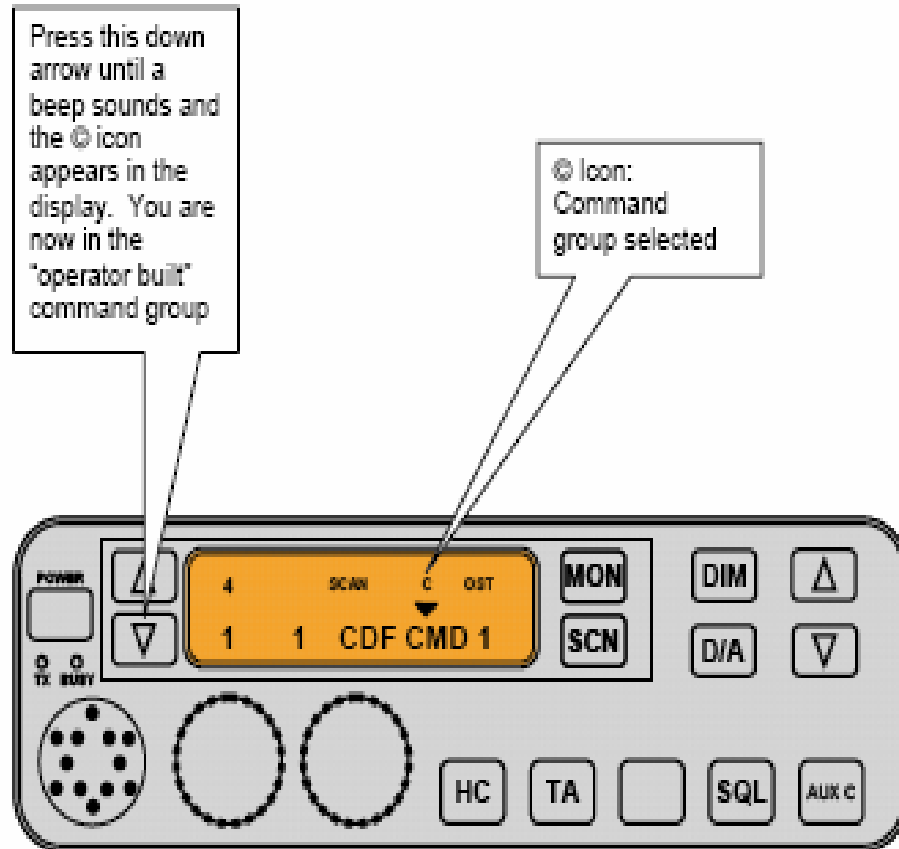


Note: There has been some confusion as to why Group 1 Icon appears at the same time as the C icon when you are in the command group. It makes it difficult to tell if you are in the Command group as the C is a little hard to see. This is the way the radio was designed.

REMEMBER: Scan must be off when deleting or adding channels in the command group.

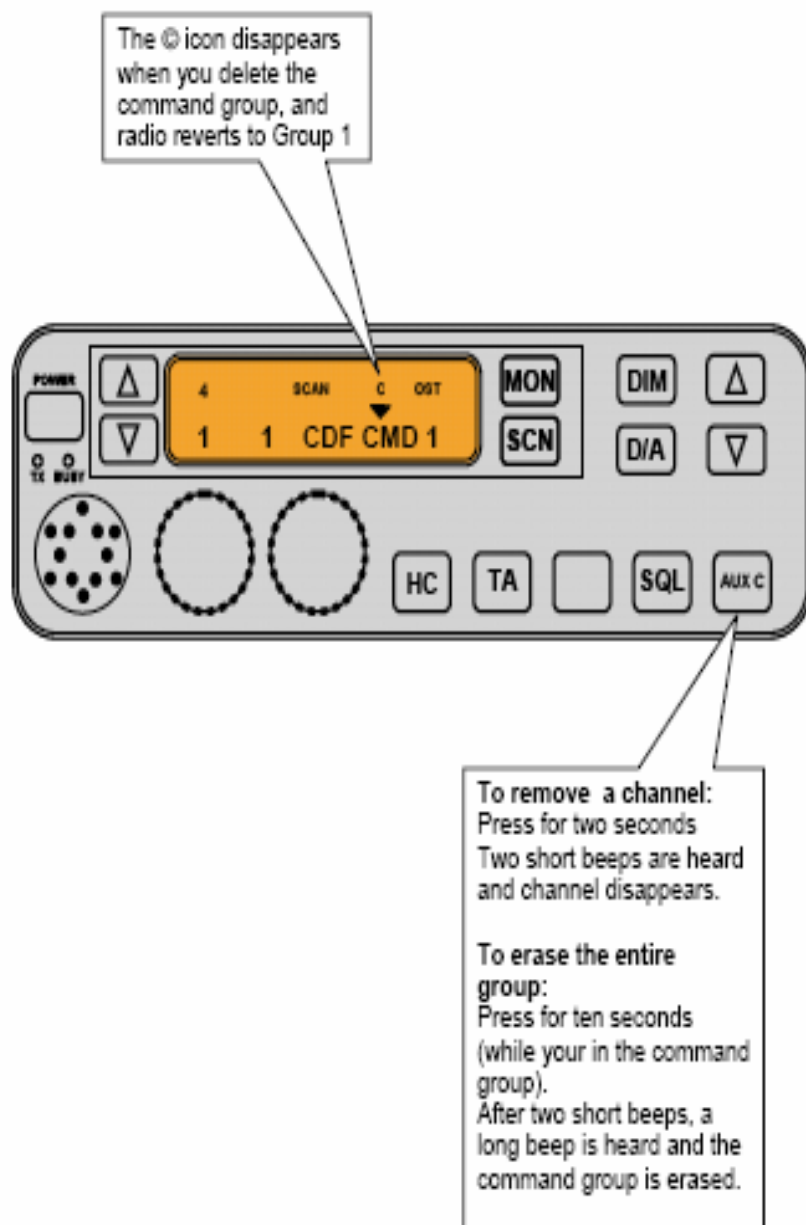
COMMAND GROUP OPERATION

Locating the Command Group

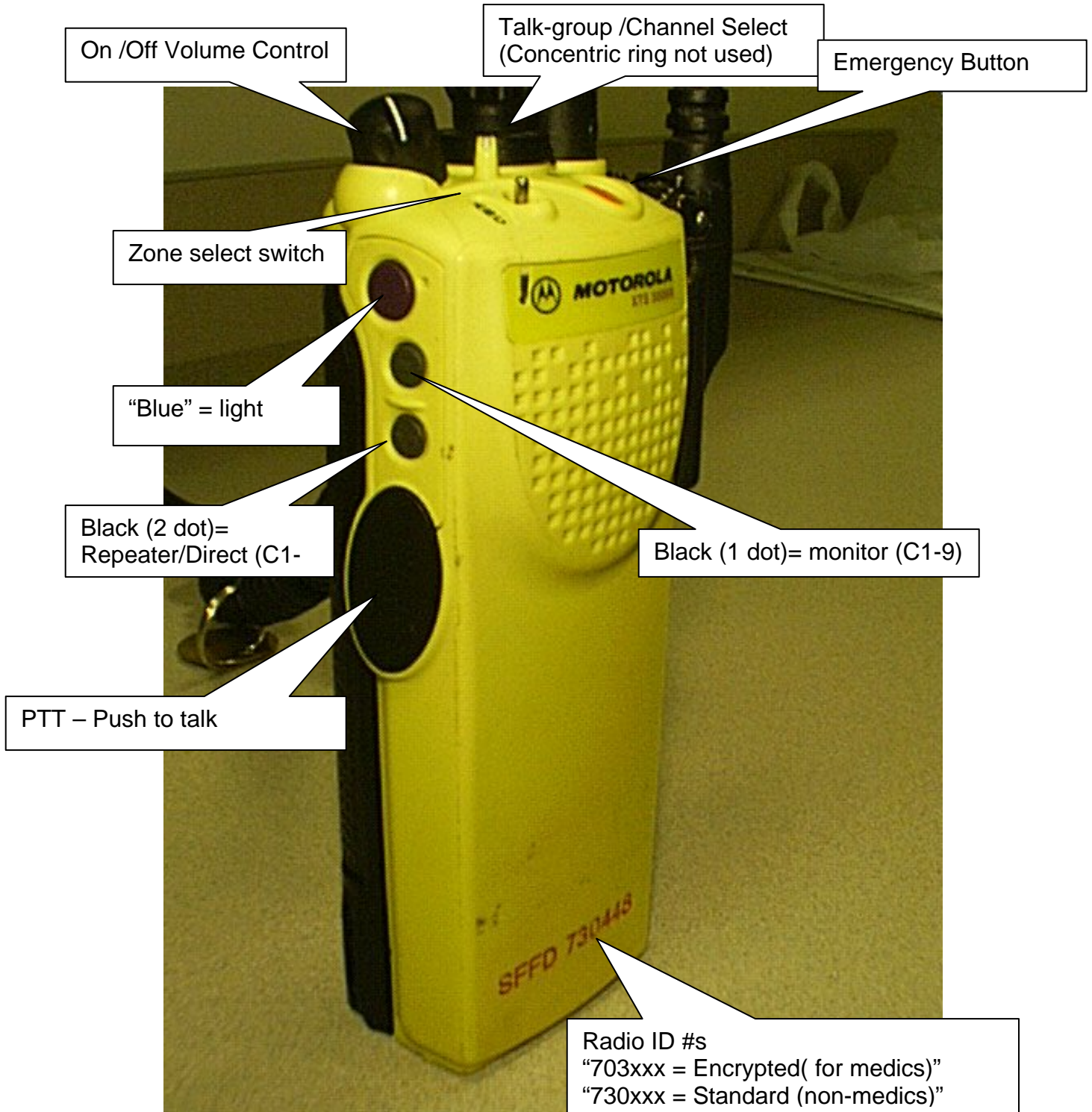


COMMAND GROUP OPERATION

Deleting channels from Command Group



APPENDIX J: MOTOROLA PORTABLE RADIOS



APPENDIX J: MOTOROLA PORTABLE RADIOS

"A" Bank			"B" Bank			"C" Bank		
	name	Function		name	Function		name	Function
1	FD-A1	Fire Dispatch	1	EVT1/B1	All City	1	8CALL90-1/C1	I Call
2	FD-A2	Fire Dispatch	2	EVT2/B2	All City	2	8TAC91-2/C2	I TAC 1
3	FD-A3	Fire Dispatch	3	RGRP	Regroup	3	8TAC92-3/C3	I TAC 2
4	FD-A4	Fire Operation	4	SEVT1/B4	Public Safety	4	8TAC93-4/C4	I TAC 3
5	FD-A5	Fire Operation	5	SEVT2/B5	Public Safety	5	8TAC94-5/C5	I TAC 4
6	FD-A6	Fire Operation	6	SEVT3/B6	Public Safety	6	MA-6/C6	CLEMARS-Hi
7	FD-A7	Fire Tactical 7	7	FD-B7	ARSON	7	MA-7/C7	FMARS-Hi
8	FD-A8	Fire Tactical 8	8	FD-B8	Fire Prevention	8	MA-8/C8	CLEMARS-Lo
9	FD-A9	Fire Tactical 9	9	FD-B9	AWSS	9	MA-9/C9	FMARS-Lo
10	FD-A10	Fire Tactical 10	10	FD-B10	BOE	10	OES1/C10	Ofc. Emerg. Svc.
11	FD-A11	Fire Tactical 11	11	PD11/B11	Police Dispatch	11	OES2/C11	Ofc. Emerg. Svc.
12	FD-A12	Fire Tactical 12	12	FD-B12	Training	12	FD-C12	ADMIN
13	FD-A13	Fire Tactical 13	13	EMS1/B13	All Hospitals	13	UNPROG	UNPROG
14	FD-A14	Fire Tactical 14	14	EMS2/B14	SFGH	14	TA1/C14	FireTalkaround
15	FD-A15	Fire Tactical 15	15	EMS3/B15	City Amb.	15	TA2/C15	FireTalkaround
16	FD-A16	Fire Tactical 16	16	EMS4/B16	Pvt. Amb.	16	PS-TA1	SHARED PD/FD

Common talk-groups "All Departments" "Safety"



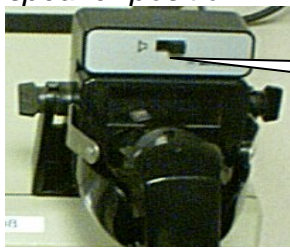
Members must pay attention to the direct or repeat mode when responding to the airport or BART underground.

APPENDIX K: EMS HOSPITAL NOTIFICATIONS AND EMS AIRCRAFT UTILIZATION

The only functional buttons on the Hospital Base Station are: “Vol” & “DIM”



When a page is received the muted speaker will open and traffic on channel can be heard. After 10 seconds a sonalert will sound until the handset is picked up. Once the handset is hung up the base is reset and no audio is heard. *The exception is to enable the speaker by moving the handset switch to the speaker position.*

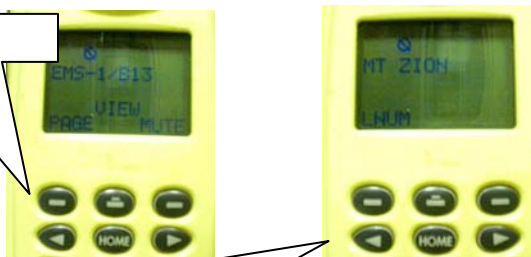


To monitor “ALL” traffic put switch towards speaker icon on handset.

The paging function can only be done from EMS1/B13 or EMS2/B14 (SFGH only) talk-groups. TO PAGE:

1) Select talk-group EMS1/B13 or EMS2/B14

2) Press the “-“



3) Use the left or right arrow to select desired hospital to be

4) Depress the “push to talk” button.

4a) A steady “Bonk” indicates page did not go through.

4b) A successful page is followed by several successive beeps.

EMS2/B14 (ONLY)			
SFGH PRIMARY	703701		

EMS1/B13			
SFGH SECOND	703702	UCSF	703703
CHINESE	703711	VA	703713
CPMC	703706	MT ZION	703708
DAVIES	703710	CHILDRENS	703718
KAISER	703705	SSF KAISER	703719
SEATON	703712	PRESIDIO FD	703714
ST FRANCIS	703704	AMR	703715
ST LUKES	703707	KING/AMER	703716
ST MARY'S	703709	EMSA	703700

NOTE: if the talk-group is busy with traffic, the page will not go through. Additionally, when in the page mode, no traffic on talk-group will be heard.

- | |
|---|
| 5) With successfully page, the hospital's speaker will un-mute. Communicate |
| 6) When hospital communication is ended, return to assigned talk-group |

It is important to acknowledge the receipt of information so that both field and hospitals are aware the information was received.

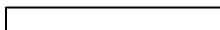
All hospitals share the same channel. Avoid contention by keeping transmissions short and verbally clearing channel when complete.

Air Ambulance Dispatch (EMS #57)(3 providers)	1 (866) 890-8881
{(xx)= speed dial plate]	
<i>Calstar (58)</i>	1 (800) 252-5050
<i>Reach (59)</i>	1 (800) 338-4045
<i>Life Flight of Stanford Health Care (60)</i>	1 (800) 321-7828

Primary communication "Air to dispatch" and "Air to Ground" will use;
CALCORD 156.0750 MHz (CSQ) on Bendix/King portable or Kenwood mobile in rig.

or

MA-09/C9(repeater) FireMARS Low Level
Transmit 821.9125MHz CTCSS 156.7
Receive 866.9125MHz CTCSS 156.7
Turn on repeater.



Alternative communications channels; (can be patched to MA9/C9)

Fire White ONE	154.2800 (CSQ) transmit & receive
Medical Channel 9	467.9500 (167.9) transmit 462.9500 (167.9) receive
HEAR	155.3400 (156.7) transmit & receive (use speed dial for Hospital)

Aircraft Landing Areas

LOCATION	STREET	CROSS STREET	LATITUDE	LONGITUDE
Balboa Playground	Ocean Avenue	San Jose Avenue	37° 43.355'	122° 26.725'
Big Rec—Golden Gate Park	Near Lincoln Way	Between 5 th & 8 th Avenues	37° 46.002'	122° 27.760'
Candlestick Park Parking Lot—K-railed area between gates “E” & “F”	North of traffic control tower	Across from R.V. Park	37° 42.83'	122° 23.12'
Crocker Amazon Field	Geneva Street	Moscow Street	37° 42.777'	122° 26.004'
Excelsior Playground	Russia Street	Madrid Street	37° 43.191'	122° 26.004'
Hunters Point Naval Shipyard	Hussey	Manseau	37° 43.24'	122° 21.97'
Jackson Playground	17 th Street	Arkansas Street	37° 45.903'	122° 23.926'
James Lang Playground	Turk Street	Octavia Street	37° 46.897'	122° 25.527'
Kezar Stadium—Golden Gate Park	Near Frederick	Willard	37° 46.042'	122° 27.296'
Kimball Playground	Steiner Street	O'Farrell Street	37° 46.995'	122° 25.527'
McCoppin Playground	23 rd Avenue	Vicente Street	37° 44.340'	122° 28.757'
Moscone Playground	Chestnut Street	Buchanan Street	37° 48.079'	122° 25.995'
Parkside Playground	26 th Avenue	Vicente Street	37° 44.332'	122° 28.965'
Polo Field—Golden Gate Park	Near Lincoln Way	Between 31 st & 36 th Avenues	37° 45.932'	122° 29.652'
Rolph Playground	Cesar Chavez (Army)	Potrero Avenue	37° 44.979'	122° 24.362'
Rossi Playground	Arguello Blvd.	Edward Street	37° 46.702'	122° 27.499'
South Sunset	40 th Avenue	Wawona Street	37° 44.184'	122° 29.840'
Treasure Island—Soccer Field/asphalt parking lot	9 th Street	Avenue “D”	37° 49.411'	122° 22.410'
Upper Great Highway—parking lot	Upper Great	Fulton Street	37° 46.276'	122° 29.981'

area	Highway			
West Sunset #3 Playground	39 th Avenue	Ortega Street	37° 44.967	122° 29.981'
West Sunset #2 Playground	41 st Avenue	Pacheco Street	37° 45.069'	122° 29.867'
Youngblood Coleman	Galvez Street	Mendell Street	37° 44.384	122° 23.167'

Alternatives to commercial air ambulance companies.

California Highway Patrol 707 551-4200 Rescue capability 24/7
 ALS unit @ Napa Airport - BLS unit @ Moffett Field

U.S. Coast Guard 415 399-3451 Rescue capability 24/7

East Bay Regional Park 510 881-1833 Search
 Days

Sonoma County Sheriff 707 565-2121 ALS/Rescue Days

California National Guard (requested through SF OES) Auxiliary Rescue 24/7

Helicopters may talk to the hospital direct by telephone or DTMF ring down on HEAR.

HEAR 155.3400 (156.7) transmit & receive (use DTMF for Hospital)

Hospital	ER	Telephone #	DTMF
Chinese Hospital (CHN)	415	677-2301	246
CPMC - Pacific (CPP)	415	600-3333	272
CPMC - Davies (DMC)	415	565-6060	382
Kaiser S.F. (KSF)	415	833-3304	573
Seton (SET)	650	991-6455	738
San Francisco General (SFG)	415	206-8111	734
St. Francis (STF)	415	353-6300	783
St. Lukes (STL)	415	641-6625	785
St. Marys (STM)	415	750-5700	786
UC Medical Center (UCM)	415	353-1238	827
Veterans (VAM)	415	750-2052	826
EMSA	415	355-2600	367
CPMC Calif.Campus(Children's)	415		277
NPS - GGNRA	415	561-5184	677
Laguna Honda Hospital	415	664-1580	544
South San Francisco Kaiser	650	742-2511	547
Irwin Blood Center	415	567-6400 x413	462
SF OES	415	558-2700	637

APPENDIX L: SATELLITE PHONES – BAT PHONE

Battalion Area Talk-Group - Satellite Phone (BAT Phone) DRAFT 11.15.07

The Battalion Area Talk Group Satellite Phone System, internally referred to as the “BAT Phone”, provides the San Francisco Fire Department with a backup communications system in the event of degradation, or lack of access, to the 800 MHz Radio System or Public Telephone System.

A. BAT Phone Kit Contents

The BAT phone kit is a self-contained, transportable satellite based communications solution. Enclosed in the Pelican case, is the following:

Satellite Transceiver Unit:



Handset:

Self Seeking Satellite Dome Antennae:



Power Supplies, Adapters, Wiring, and Accessories

12V cigarette lighter adapter with internal fuse and power indicator
110V AC adapter
20' of antennae wire to permit use from within a building
3 Spare fuses
Users Guide

B. Functionality Overview

The BAT Phone provides:

1. Satellite based Talk-Groups
2. Satellite based Telephone
3. GPS Coordinates

1. Talk-Groups with Push to Talk (PTT)

The talk group feature is the most powerful capability of the BAT Phone. From a functional standpoint, this provides an additional Tactical/Command Channel independent of the 800 MHz Radio System. When one unit is keyed all users on the Talk-Group hear the transmission. In the event of degradation of the 800 MHz System due to loss of infrastructure or heavy demand, the BAT Phone can provide a means to communicate between Battalion Chiefs, Rescue Captains, Division Chiefs, the FDOC, CCSF EOC, and, when permitted by SOP, the California OES EOC.

The BAT phones are currently programmed with three Talk-Groups, “**SF FIRE**”, the shared “**CCSF**” Talk-Group and the State OES “**SKYMARS**” Talk-Group.

The “**SF FIRE**” is the default Talk-Group when the BAT phone is first turned on. In the future, the Department may have access to additional Talk-Groups as they become available.

2. Satellite Based Telephone

The BAT phone also functions as a Satellite Telephone phone, which provides access to telephone networks when local cell phone or landlines are overwhelmed during a disaster. The dial format is “**Area Code**” “**Phone Number**”. Please note that the Department is charged \$1.65 per minute for calls in the United States

3. GPS Coordinates

After initiating a telephone call, the GPS coordinates of the unit can be displayed. This is useful for identifying landing zone locations for air operations or for defining locations in rural settings, or in urban areas, which have experience natural disasters.

4. Radiation Warnings

Please refer to the User’s Guide, located in the Pelican Case, for a complete list of warnings.



DO NOT STAND IN FRONT OF THE ANTENNA

This device emits radio frequency energy when in the transmit mode. To avoid injury, do not place head or other body parts in front of the satellite antenna when system is operational. Maintain a distance of one meter away from the front of the MSAT-G2 antenna.



BLAST/RF WARNING

Do not operate the MSAT-G2 Radio in areas where explosives are in use as the RF energy may cause hazardous conditions. Do not operate the MSAT-G2 Radio where two-way radios are prohibited. Turn the MSAT-G2 Radio off while at a petrol filling station or near fuels or chemicals.



OTHER ELECTRONIC DANGER WARNING

To reduce the risk of fire or electric shock, do not submerge this product in water. Do not expose this product to rain or moisture unless it is specifically intended for outside use.

C. Setup and Use

1. The MSAT Satellite System requires a clear view to the South and, in the Bay Area, at approximately 20 degrees above the horizon. Note: as you travel South the Satellite will be visible at a progressively higher angle.
2. Connect the Satellite dome to the Satellite Phone



3. Connect the satellite phone to a power source, either 12v DC or 110 AC using the adapter stored in the pouch.
4. Confirm that you are at least 1 meter from the antennae and press the “On” switch on the handset (shown below in the handset overview)
5. The Satellite dish will perform an auto acquire of the satellite. Once acquired the display will stop displaying “Searching” and the No Service Icon.



Handset Overview

All functions and displays will reference the handset:



Phone Calls

1. Using the “Alphanumeric Keypad”, enter “1” “Area Code” “Phone Number”
2. Press the “Send Key”

Note: The Department is charged \$1.65 per minute for calls in the United States

Talk Groups –

1. The phone defaults to the “CCSF” Talk Group, which is used by the SFFD, SFPD, DEM, SF Port, and SFO.
2. Press and hold the “PTT Key”. First you will see “CALLING” followed by “USER ON”, which indicates that you have the Talk Group. Speak into the handset as if it was a microphone. When you release the PTT button the channel is release and the display will show “VACANT”.



Note Push to Talk is included within the monthly fee and no additional charges will apply.

GPS

1. When either type of call is in progress your GPS coordinates can be displayed. This can be used in wild land fire operations or when designating a helicopter LZ
2. Select by pressing the left gray “Soft Key” located below “GPS” on the display.

SFFD BAT Phone Numbers:

<u>ESN</u>	<u>Unit Number</u>	<u>Assigned To</u>	<u>Voice Number</u>
16401184	SFFD 1	B01	800-932-4468
16401334	SFFD 2	B02	800-666-1327
16401328	SFFD 3	B03	800-666-4913
16400430	SFFD 4	B04	877-303-3063
16405197	SFFD 6	B06	800-511-3399
16400761	SFFD 7	B07	800-289-8122
16401914	SFFD 8	B08	800-333-6715
16401729	SFFD 9	B09	800-666-2615
16405496	SFFD 10	B10	800-288-4644
16400536	SFFD 12	D02	800-931-1169
16401162	SFFD 13	D03	800-943-6855
16401733	SFFD 5	Special Ops	800-666-1279
16400559	SFFD 11	EMS Ops	800-641-2898
16400577	SFFD 14	SFFD 14	877-814-6350
16402263	SFFD 15	SFFD 15	800-550-2834
19824706	Fire HQ	FDOC 1	800-532-8981
19831196	Fire HQ	FDOC 2	877-784-4621