



Los Angeles Fire Department Auxiliary Communications Service

The operational goal of the Auxiliary Communications Service is to provide clear, concise, and accurate communications in support of the City of Los Angeles during emergency and non-emergency incidents.

INTERIM
BOOK 73

ACS
OPERATIONS

BOOK 73 CERTIFICATION

As Chief of the Los Angeles Fire Department, I acknowledge and certify that this Book 73 complies with generally accepted emergency communications procedures and procedures established by the City of Los Angeles.

SIGNATURE AND DATE _____

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EXECUTIVE SUMMARY



THE LOS ANGELES FIRE DEPARTMENT AUXILIARY COMMUNICATIONS SERVICE

In the late 1980s, the City of Los Angeles began designing an emergency communications plan to use the Amateur Radio Service and licensed amateur operators when appropriate. In 1988, the city signed a Memorandum of Understanding with the American Radio Relay League's Amateur Radio Emergency Service (ARES) Northwest Los Angeles branch to provide amateur radio communications during periods of emergency declared by the city.

In 1992, the LAFD developed an emergency radio communications service plan based on the California State Office of Emergency Services "Santa Louisa" model emergency radio communications plan.

In 1996, the LAFD organized an Auxiliary Communications Service (ACS) program, and it became the official amateur radio volunteer organization for the city. Amateur radio stations at the Emergency Operations Center were updated, and additional stations were installed at the LAFD Department Operations Center (DOC) and at the LAFD Disaster Preparedness Section, then at FS 88. The plan included an Amateur Radio communications component for the Community Emergency Response Teams (CERT), and a weekly Amateur Radio net on Monday nights to demonstrate equipment readiness, distribute pertinent and timely information, and as a means to communicate during emergencies. Weekly nets for ACS and CERT amateur radio operators continue to this day.

In 2000, the City of Los Angeles signed an updated service agreement with the ACS program, based on recommendations from the Cal OES and their updated model "Santa Louisa" plan, in order to expand and supplement the city's emergency communications capabilities. This service agreement provides ACS tactical, logistical, administrative, and communications support for all city communications systems. Participants in the ACS program are experienced communicators who work as unpaid staff providing a critical communication enhancement to any local emergency management agency during any type of emergency.

ACS EXECUTED SERVICE PLAN

The ACS has an executed service plan with the city, which states in part:

The Auxiliary Communications Service (ACS) serves to provide the City of Los Angeles with a variety of volunteer skills, including administrative, technical, and operational, for emergency tactical, administrative, and logistical communications between the city and its departments, between the city and county governments and with the state OES.

The ACS includes the RACES (Radio Amateur Civil Emergency Services) and other communications services provided by volunteers in government. It coordinates mutual aid RACES, or equivalent government amateur radio operators, and other FCC licensees, in support of civil defense and disaster response/recovery.

It supports an active involvement of these specialists in the day-to-day emergency management agency so that in times of need they are cognizant with on-going procedures, personnel and capable of integrating

with all systems. As part of its on-going activity, it conducts on-the-air tests in order to test, train, and keep in peak readiness the emergency operations communications equipment.

In 2009, the ACS developed and completed the LAFD ACS-CERT Comm Plan specifically for use by the ACS and CERT amateur radio operators and began teaching this plan to CERT groups and teaching two-way radio operation classes and emergency communications classes to the community on a continuing basis. (CERT Comm Plan available at: <http://www.cert-la.com/cert-la-news/commplan/>).

The LAFD ACS continues to provide emergency communications services to the City of Los Angeles as necessary, provides “eyes and ears” and communications assistance to the city for public events, such as the Hollywood Christmas Parade, the March for Babies, and the Los Angeles Marathon. The ACS also provides communication services to CERT teams when requested to do so, participates in CERT training and drills when appropriate, and teaches two-way radio communication and emergency communication skills to CERT and community members.

AUTHORITY

Under state law, Cal OES has the authority to control and manage amateur radio communications between governmental units during disasters and other emergencies. To satisfy Cal OES requirements, the LAFD ACS is the Radio Amateur Civil Emergency Service (RACES) group for the City of Los Angeles. RACES is similar to the state’s fire and police mutual aid system. When local resources are overwhelmed, the city, through Cal OES, can receive and give mutual aid emergency auxiliary communications equipment and staffing.

All ACS members are sworn State of California Disaster Service Workers and members of the City of Los Angeles Office of the Mayor Volunteer Corps Los Angeles Fire Department Volunteers.

MANAGEMENT

The Los Angeles City Fire Department manages and operates the LAFD ACS amateur radio program for the city’s Emergency Management Department (LA EMD). The LAFD ACS is recognized by Cal OES as a state disaster service group.

The LAFD ACS is currently organized to mirror the LAFD’s command structure. ACS Communication Unit Leaders (COMLs) are assigned to their respective bureaus and battalions by their geographic residence or work location. Following an event, COMLs will report to an Incident Area Commander and, if requested to do so, will set up their liaison function adjacent to the Incident Command Post. COMLs will provide and monitor a communications link with field ACS personnel as necessary. The COML will be responsible for coordinating all ACS volunteer activities at the direction of the Incident/Area Commander.

SERVICES

The LAFD ACS program is designed to provide an organized volunteer response to support an Incident Area Commander’s operation.

Should the normal LAFD radio system be degraded or fail to operate properly, ACS amateur radio operators can relay important information directly from the LAFD Department Operations Center (LAFD DOC) and the city’s Emergency Operations Center (EOC) directly to the Area Commanders and elsewhere as appropriate. A system has been established whereby amateur radio operators will respond to battalion and area/division command posts as

well as to the Mobile Radio Command Trailer (maintained at Fire Station 88) and their communications station maintained at North Valley Station (old Fire Station 77). ACS has limited radio equipment installed at Fire Station 109, Mulholland Drive west of the 405; Fire Station 5, north of the Los Angeles International Airport; and at the Port of Los Angeles Testing Laboratory, Berth 161, in Wilmington.

In addition to RACES communications, the ACS can provide radio communications for CERT, Urban Search and Rescue, and other governmental units and teams, and will provide other communications for the city as directed by the LAFD.

USES OF ACS MEMBERS

1. ACS Radio Operators can be deployed to an incident to provide a backup communications link between Fire personnel and Incident Command.
2. ACS Radio Operators can be deployed to bureau, battalion or local fire stations to establish a communications link to LAFD's Department Operations Center.
3. ACS Radio Operators can assist with distribution of LAFD radios at incidents.
4. Extra "eyes and ears": ACS Radio Operators can be deployed in mobile units or at stationary observation locations and provide situation reports or report emergencies to Incident Command.
5. ACS Radio Operators should be deployed to operate the Amateur Radios on board command vehicles.
6. ACS Radio Operators can be deployed on Red Flag Days to provide community fire patrol.
7. ACS Radio Operators can provide community outreach.
8. ACS Radio Operators can be used as additional staffing at events like the Hollywood Christmas Parade, the Los Angeles Marathon, or other city events.
9. Specially trained ACS Radio Operators can use radio facilities installed at the City Emergency Operations Center and the LAFD Department Operating Center to relay dispatch traffic to the LAFD bureaus and to provide LAFD and city personnel with infrastructure status and situational intelligence reports from the field.
10. Many ACS members have graduated from the LAFD Defensive Vehicle Operations Course and are certified to drive LAFD Light Vehicles.

AVAILABILITY

All requests for ACS services should be routed through LAFD or EMD personnel. Once requested, the ACS will confirm all requests with the appropriate LAFD Captain or Chief Officer. The City Radio Officer, ACS Program Manager, or ACS Operations Officer can authorize full activation of the ACS.

INTEGRATION

It is incumbent upon all fire department members to understand the roles and capabilities of these volunteers. The best way to develop a working relationship and formulate an integrated volunteer team is for Bureau and Battalion Commanders to meet with their respective ACS Communication Unit Leaders on a routine basis. COMLs should be invited to participate in disaster and emergency planning meetings, ride-a-longs, battalion drills, etc. With your cooperation and support, this program will exemplify the team spirit necessary to safely and effectively manage a significant incident.

CHAPTER 1 GENERAL

STATEMENT OF INTENT

This Book 73 provides guidance to members of the Los Angeles Fire Department and members of the LAFD Auxiliary Communications Service to respond effectively to any planned or unplanned event that creates a need for auxiliary communications within the City of Los Angeles.

This Book 73 does not replace or supersede LAFD rules and regulations or any other official publication of the LAFD or the City of Los Angeles and it is subject to change and periodic updates. All ACS Radio Operators are required to understand the information contained in the most recent version of this document.

OPERATIONAL GOAL

The operational goal of the LAFD ACS is to provide clear, concise, and accurate communications in support of the City of Los Angeles during emergency and non-emergency incidents.

STANDARD ORDERS

1. Radio Operators shall not self-deploy but shall monitor ACS Channel 1 for information and instructions and deploy only when and as directed. If ACS 1 is not available, monitor ACS Channel 3. If neither ACS 1 nor ACS 3 is available, monitor ACS Channel 5. See "Situational Awareness" (p. 3-5) for further information.
2. Radio Operators shall work through their established chain of command.
3. Radio Operators shall utilize the most recent published ACS Communications Plan, which will be provided to ACS Radio Operators, and have their radios programmed accordingly.
4. Radio Operators shall always consider safety first.
5. Radio Operators shall be alert and act calmly.
6. Radio Operators shall be prepared for response.
7. Radio Operators shall keep themselves informed of current ACS events and activities and become involved accordingly.
8. Radio Operators shall provide clear and accurate communications.
9. Radio Operators shall keep their communications equipment properly maintained and ready for use.
10. Radio Operators shall keep their vehicle maintained and operational at all times and shall keep a minimum of a half tank of fuel on board at all times.
11. Radio Operators shall not make contact with communications system "jammers."
12. For uniform events, Radio Operators will wear their full ACS uniform as specified in this document (p. 2-6), including black or blue socks and black shoes or boots. The wearing of partial ACS uniform pieces is not acceptable.
13. Radio Operators may respond in full ACS uniform as general volunteers in support of the LAFD Community Emergency Response Teams (CERT) when requested to do so by CERT Command and if approved by ACS Command.

AT WILL

All ACS Radio Operators are appointed and volunteer "at will." The City of Los Angeles and LAFD are free to discharge volunteers for good cause, bad cause, or no cause at all, and ACS Radio Operators are equally free to resign or otherwise cease work at any time.

SAFETY

It is ACS policy to promote **SAFETY FIRST**. In the event of an emergency, your personal safety, as well as the safety of your family and those near you, is your primary responsibility. ACS Radio Operators should never place themselves in situations where their personal safety is compromised.

If it isn't safe, don't do it.

You will never be required to do anything that you feel is unsafe. If you are asked to do something you feel is unsafe, you may respectfully decline to do so. Report any unsafe requests, operations, or conditions to your supervisor.

STAFF AND POSITIONS

ACS COMMAND AND GENERAL STAFFS

The ACS Command Staff includes the City Radio Officer, ACS Program Manager, ACS Operations Officer, ACS Planning Officer, and ACS Logistics Officer.

The ACS General Staff includes the ACS Training Officer and liaisons to the Los Angeles Emergency Management Department (EMD), the City Information Technology Agency (ITA), LAPD, CERT, LAFD Foundation, and emergency communication groups (EmComm).

The ACS Command and General staffs have the authority to supervise, control, regulate, and manage the ACS Program and to create and enforce all necessary and desirable rules and regulations. Such powers are subject to the provisions of the Los Angeles City Charter and the City of Los Angeles ordinances that are not in conflict with the grants of power made to each department of the city government mentioned elsewhere in the city charter. The ACS Command Staff has the authority to make changes to the LAFD Book 73 as long as they are not in conflict with the LAFD Rules and Regulations. All changes to LAFD Book 73 are subject to approval by the City Radio Officer and ACS Program Manager.

COMMAND STAFF

CITY RADIO OFFICER—The City Radio Officer will be an officer of the LAFD and is the Auxiliary Communications Service (ACS) and Radio Amateur Civil Emergency Service (RACES) coordinator responsible for organizing and supervising all Amateur Radio operators performing emergency communications services for the City of Los Angeles. The City Radio Officer is authorized to call up reserve and volunteer operators and authorized to assign them to duties as needed. The City Radio Officer will liaison with the Los Angeles County Radio Officer, the State Office of Emergency Services (OES) Regional Radio Officer, and the OES State Radio Officer. The City Radio Officer will make certain that all city, county, and state ACS standards are met and regulations followed.

ACS PROGRAM MANAGER— The ACS Program Manager supervises the ACS Operations Officer and the ACS Staff. The ACS Program Manager may delegate appropriate responsibilities to the ACS Operations Officer or to other ACS members.

ACS OPERATIONS OFFICER—The ACS Operations Officer will manage the day-to-day activation and deployment of Radio Operators for drill and emergency activities including activation systems and ACS Net Control functions. The ACS Operations Officer can delegate appropriate responsibilities to the Bureau Communication Unit Leaders (Bureau COMLs).

ACS PLANNING OFFICER—The ACS Planning Officer is responsible for preparing the annual calendar of events and scheduling drills and training sessions.

ACS LOGISTICS OFFICER—The ACS Logistics Officer is responsible for the maintenance and operational capability of all ACS physical resources.

GENERAL STAFF

ACS TRAINING OFFICER—The ACS Training Officer identifies and develops training materials and methods as needed based on the ACS mission.

ACS-EMD LIAISON—The ACS-EMD (Emergency Management Department) Liaison has direct, full-time access to the city’s Emergency Operations Center (EOC) and, as such, is responsible for arranging Radio Operator access to the Amateur Radio Operating Center (AROC) for incidents, exercises, training, and related activities. The ACS-EMD Liaison also coordinates with EMD personnel on AROC upgrades and maintenance.

ACS-ITA LIAISON—The ACS-ITA (Information Technology Agency) Liaison coordinates the ACS repeater systems located at city facilities.

ACS-LAPD LIAISON—The ACS-LAPD Liaison will keep the ACS and the LAPD informed of current operations as appropriate as well as passing information of interest between both organizations. The ACS-LAPD Liaison will also assist in ACS deployment per LAPD requests.

ACS-CERT LIAISON—The ACS-CERT Liaison will keep the ACS and CERT organizations informed of current training schedules, the ACS-CERT Communication Plan, operational requirements, and activities of interest to members of both ACS and CERT groups. The ACS-CERT Liaison will maintain the LAFD-CERT Comm Plan and related materials.

ACS-FOUNDATIONS LIAISON—The ACS-Foundations Liaison will be responsible for investigating and maintaining relationships with the LAFD Foundation and other foundations, agencies, and groups that may be useful to the ACS as sources of funding or other benefits.

ACS-EMCOMM GROUPS LIAISON—The ACS-EmComm Groups Liaison will be responsible for interaction between ACS and other Amateur Radio emergency communications groups such as ARES, LASD-DCS, Ventura County ACS, GEARS, BEARS, CCARES, KPARN and other local emergency communication organizations within and surrounding the City of Los Angeles. The ACS-EmComm Liaison will maintain a confidential list of frequencies used by these organizations and determine interoperational frequencies for these organizations as possible. The EmComm Liaison shall keep the ACS Command Staff apprised of activities and activations of interest involving these organizations and shall prepare for and assist should a mutual aid situation arise.

ACS RECORDS ADMINISTRATOR—The ACS Records Administrator is responsible for the ACS membership rosters, member records, member applications, certificates, and other material and documents relating to membership and membership activities. The Records Administrator performs document maintenance, control, and distribution functions. The Records Administrator supervises the Assistant Records Administrator.

COMMUNICATIONS UNIT LEADERS

ACS BUREAU COMMUNICATION UNIT LEADERS (BUREAU COMLS)

Bureau COMLS are subordinate in rank to ACS General Staff members and are responsible for effective application of the policy, rules, regulations, practices, and procedures of the ACS Program within their commands. Bureau COMLS shall:

1. Be responsible for the morale, efficiency, and distribution of personnel within their commands.

2. Conduct training activities of all Battalion Communication Unit Leaders in their bureaus at least once a year and at other times when appropriate.
3. Make inspections and investigations as may be necessary to keep informed of conditions in their bureaus.
4. Respond to ACS activations as needed.
5. Maintain contact with their respective LAFD Bureau Chiefs on a quarterly basis.

ACS BATTALION COMMUNICATION UNIT LEADERS (BCOMLS)

BCOMLs are subordinate in rank to Bureau Communication Unit Leaders and shall:

- Supervise Radio Operators assigned to their ACS battalions in accordance with general rules of conduct pertaining to their rank and shall enforce within their battalions specific rules applicable by reason of their assignment.
- Respond to ACS activations when deployed, assume control of ACS Radio Operators in their battalions, and utilize resources and personnel in the most advantageous manner to achieve the preservation of life and property.
- Conduct training activities of all their immediate subordinates at least once a year and at other times when necessary.
- Have contact with each Radio Operator over whom they have supervision at frequent intervals, make such contacts as are necessary to determine that proper care and attention is given to all ACS property, and immediately notify their Bureau Communication Unit Leader when equipment requires repair or replacement.
- Perform drills, conduct investigations, collect evidence of neglect or inefficiency, and take necessary action to correct any deficiencies within their battalions as required.
- Maintain contact with their respective LAFD Battalion Chiefs on a quarterly basis.

ACS RADIO OPERATORS

ACS PRIMARY RADIO OPERATOR

A Primary Radio Operator is a properly trained and equipped ACS Radio Operator assigned to the lead position of a two-person deployment team. This person will have all of the items on the Primary Radio Operators Equipment List (p. 2-10), including a minimum 35-watt, dual-band (2 meter/440) mobile radio programmed with the current ACS and CERT Comm Plans (p. 4-1).

ACS SECONDARY RADIO OPERATOR

A Secondary Radio Operator is a properly trained and equipped ACS Radio Operator assigned as the second Radio Operator of a two-person deployment team. This person will have all of the items listed on the ACS Radio Operator Equipment List (p. 2-10).

MEMBERSHIP REQUIREMENTS

To become an ACS Radio Operator, applicants must possess a current FCC Amateur Radio License, complete and submit the required applications, present requested documentation, and pass an initial review and interviews. All members are subject to a background investigation. New Radio Operators, once approved, will be issued an ACS battalion and serial number (collectively referred to as their member number) and, after successfully passing a six-month probationary period and completing the required classes, will be approved by their Battalion Communications Unit Leader and authorized by their Bureau Communications leader to receive their official ACS identification card from the City of Los Angeles.

As a condition of membership, all ACS Radio Operators are required to keep their FCC Amateur Radio Licenses current and in good standing. ACS Radio Operators are encouraged to upgrade their licenses to the highest level possible.

The ACS Active Roster is the list of Radio Operators who are current in their requirements and training, are properly equipped, and are available for deployment. The Active Roster is maintained by the ACS Records Administrator.

All Radio Operators are required to participate in the Monday Night Net. Missing three consecutive Monday Night Nets may cause a Radio Operator to be dropped from the Active Roster and be considered inactive. Once checked in after missing three consecutive Monday Night Nets, inactive Radio Operators will be returned to the Active Roster. Radio Operators missing four or more consecutive Monday Night Nets should contact their BCOML to update their contact information and then check into the Monday Night Net. Radio Operators who know they will be unavailable to check in to the net for good reason (working out of town, school, other commitments, etc.) should contact their BCOML prior to missing three or more nets. Radio Operators who maintain regular contact with their BCOMLs will be excused from the weekly net participation requirement when they are unable to participate.

Radio Operators using EchoLink to check into Nets shall wait until ACS Net Control asks for EchoLink contacts.

One of the purposes of the Net is to exercise our radio equipment and test our radio communication abilities. When a Radio Operator makes a communication on behalf of another person, it is called a third-party communication. ACS Net Control will only accept third-party Net check-ins when:

- The Radio Operator is in direct radio contact (not telephone contact) with the third-party Radio Operators in a radio relay situation, or
- The third-party Radio Operator is physically present at the relay radio station during the Net.

VOLUNTEER DOCUMENTATION

It is vitally important we keep the City of Los Angeles informed of participation in the ACS program. Radio Operators are required to report their hours, even if none, on a monthly basis. Radio Operators who do not report their volunteer hours for the previous month by the tenth of the following month may be dropped from the Active Roster. ACS hours are reported to the ACS Records Administrator or Assistant Records Administrator.

A minimum of three hours (three Nets, for example) per month are required to maintain active ACS status. Those who cannot meet this requirement should contact their BCOMLs and make other arrangements. Hours spent in approved training, maintaining ACS equipment, attending ACS battalion meetings, attending ACS special events, etc. are all acceptable volunteer hours. Radio Operators who do not report volunteer hours will be removed from the Active Roster.

Please refer to the following standards in reporting your ACS time.

- **NET**—One hour minimum or actual time, if longer than one hour, for each ACS directed Net that you check into. The Monday evening post-Net is an adjunct to the directed Net and does not count for separate time credit.
- **TRAINING**—Hours spent attending, instructing, preparing materials for, or administering approved training events or courses, including those not sponsored or taught by ACS. Please send a copy of any completion certificates, if issued, to the ACS Records Administrator. Hours spent in class or self-study for a license upgrade, FEMA courses, and ARRL public-service communication courses may be included with approval of the Battalion or Bureau Communications Unit Leader. Ask the Training Officer about any events for which approval has not been previously granted.
- **DRILLS**—Hours spent participating in ACS-organized drills or providing approved communications support or ACS outreach at city-sponsored or city-supported events.
- **ACTIVATION**—Hours spent participating in any formal ACS activation.
- **MEETINGS**—Hours spent attending approved ACS meetings and representing ACS at public meetings.
- **EQUIPMENT**—Hours spent sourcing, procuring, installing, and maintaining ACS equipment at city or department facilities. This does not include maintenance of your personal radio or station.
- **STAFF**—Hours spent performing the duties of BCOML and above.

GENERAL (APPLIES TO ALL TIME CATEGORIES):

For all ACS activities, report all time in hour increments, rounding up to the nearest hour, with a one-hour minimum. For example, if you participated in a ninety-minute class, your ACS reported time is two hours. If you performed a forty-five-minute ACS task, your reported time for that task is one hour. Include your actual travel time to and from qualifying events in addition to time spent at the event, with a minimum travel time of one half hour per trip. All credit for hours logged is subject to approval by the Radio Operator's BCOML, Bureau COML, and Command Staff. Please sign in on any provided rosters and submit any required reports for specific events to claim credit for activities other than Nets.

Note: The intent of collecting hours expended by ACS Radio Operators is to document work provided to the City of Los Angeles by ACS volunteers and training received by ACS Radio Operators. Please report only your ACS hours to the ACS Records Administrator. Hours volunteered for CERT or other groups should be reported to the appropriate person in each such group.

DONATIONS

All donations to the ACS will be commensurate with the City of Los Angeles Donation Policy.

Any material donated to the ACS by ACS members will be documented on the appropriate form and submitted to the ACS Records Administrator. Examples of donated items are radio equipment donated to ACS stations, equipment and supplies for maintenance, computer equipment and office supplies donated to the stations, and food and supplies donated for ACS events.

The documented hours and donation forms allow us to show the mayor and city council the value of the services and materials we donate to the City of Los Angeles each month.

TRAINING

Emergency communications and Amateur Radio are continuously evolving. It is important for ACS Radio Operators to maintain and improve their capabilities.

- **QUARTERLY TRAINING**—Training events are held quarterly and are organized by all bureaus on a rotating basis. If possible, all Radio Operators are expected to attend all trainings. A minimum of one quarterly training per calendar year is required for each Radio Operator to maintain active membership.
- **ADDITIONAL TRAINING**—Workshops and other learning opportunities may be conducted from time to time. Additional requirements may be developed by the Training Officer and approved by the Command Staff. Radio Operators are encouraged to study and upgrade their licenses and to participate in radio communication activities and training conducted by other organizations.
- **TRAINING COURSES**—As a requirement for active membership status, all ACS Radio Operators shall take and pass the following training courses within twelve months of joining ACS:
 - FEMA Incident Command System (ICS) Independent Study Programs (available at <https://training.fema.gov/is/>)
 - [IS-100.c: Introduction to the Incident Command System](#)
 - [IS-200.b: ICS for Single Resources and Initial Action Incidents](#)
 - [IS-700.b: National Incident Management System, An Introduction](#)
 - [IS-800.c: National Response Framework, An Introduction](#)
 - ACS-101 voice message-handling class or approved equivalent
 - ARRL's EC-001 Basic Emergency Communications on-line: <http://www.arrl.org/online-course-catalog>

For any trainings or courses that issue certificates for proof and documentation, such as the FEMA and ARRL courses as above, a copy of the certificate must be sent to the ACS Records Administrator.

EOC/FDOC Radio Operators: refer to Chapter 5 for additional training requirements.

Additional trainings such as Emergency Operations Center courses and the LAFD Defensive Vehicle Operations Class may be required for certain deployments.

CODE OF CONDUCT

ACS Radio Operators will present themselves in an organized and professional manner. Listen more than you speak. Be familiar with how the LAFD conducts operations and communications. Think on your feet but do not make policy decisions.

Punctuality is required of all Radio Operators. Failure to report for duty or to place of assignment at the time specified will be considered cause for disciplinary action. Unexcused absence of more than sixty minutes will be considered absence without leave. Tardiness shall be reported immediately.

Radio Operator accountability is an LAFD mandate and is required of all Radio Operators. If you are assigned to fulfill a position, you are expected to remain in that position until officially relieved. If you need to leave the position without being relieved or excused, for your own safety and the safety of others, it is imperative you inform your supervisor and ACS Net Control before leaving. Your supervisor and ACS Net Control must know your location and assignment at all times until you are dismissed.

Volunteers for the LAFD will not engage in any political or non-LAFD business discussions while volunteering for the LAFD or City of Los Angeles. Volunteers will specifically not discuss political or non-LAFD business while in uniform, when they are in fire stations, or on city property.

Inappropriate conduct or behavior is never acceptable and may be cause for discipline. This includes but is not limited to the following:

- Sexual harassment
- Hostile work environment
- Insubordination
- Inappropriate or abusive language, whether in person or “on air”
- Self-dispatching (See “Situational Awareness,” p. 3-5)
- Misuse of credentials
- False statements
- Criminal conduct of any kind
- Participation in any ACS activity while under the influence of alcohol, marijuana, or illegal drugs
- Inappropriate attire

DISCIPLINARY PROCEDURES

All ACS Radio Operators are appointed and volunteer at will. The City of Los Angeles, the LAFD, its administrators, and the ACS Program Manager are free to discharge volunteers for good cause, bad cause, or no cause at all. ACS Radio Operators are equally free to resign or otherwise cease work at any time.

ACS Radio Operators who do not meet the minimum membership requirements may be removed from the Active Roster. Quarterly, BCOMLs will inform the ACS Records Administrator of Radio Operators in their battalions who have not met the minimum membership requirements. Those Radio Operators may be dropped from the Active Roster. Radio Operators dropped from the Active Roster will be placed on the Inactive Roster for twelve months, during which time they can return to the Active Roster by meeting the minimum requirements.

Radio Operators who are inactive for twelve months or longer will no longer be members of ACS and will need to reapply as new members if they wish to return to ACS membership. Radio Operators removed from the Inactive Roster, or who have resigned or otherwise ceased ACS work, must immediately surrender any LAFD-provided and city-provided equipment, including their ACS identification card and any ACS-supplied uniforms or patches, and are prohibited thereafter from wearing the ACS uniform or in any other way representing themselves as ACS volunteers.

Radio Operators unable to meet the minimum requirements may contact their BCOML and, with BCOML and Bureau COML approval, make other arrangements to satisfy the minimum requirements.

Command Staff members may summarily relieve from duty a Radio Operator under their command when, in their judgment, an offense committed is sufficiently serious to warrant immediate action. An oral report of such action shall be made through channels immediately and a written report shall be submitted to the City Radio Officer and ACS Program Manager within twenty-four hours. Serious offenses shall be submitted to the LAFD Professional Standards Division for review.

When relieved from duty under charges, the Radio Operator so relieved shall promptly surrender all ACS and LAFD property to his or her supervisor, who will retain such property pending disposition. Loss of privileges, relief from duty, or suspension may be assessed against any Radio Operator guilty of infractions of the ACS Code of Conduct (p. 2-4), practices, or procedures to a degree commensurate with the seriousness of the offense.

UNIFORM STANDARDS AND REQUIREMENTS

All uniform apparel will be clean, wrinkle free, and free from defects.

REQUIRED ITEMS

ID CARD—Once issued an ACS identification card, every Radio Operator will display this credential at all times while on duty. The ID card will also be worn when visiting an LAFD or City of Los Angeles facility while on ACS business. The recommended method is to clip the ID card to a lanyard hung around the neck.

UNIFORM SHIRT—All Radio Operators shall wear a Dickies brand long- or short-sleeve light blue uniform shirt or approved equivalent. The LAFD blue background patch shall be affixed to the left sleeve one-half inch below the seam and the ACS unit patch shall be affixed to the right sleeve one-half inch below the seam.

Nameplates are no longer approved for use by the LAFD. The Radio Operator's last name will be placed on the right chest of the shirt using "direct embroidery," following LAFD Specifications—one-half inch Helvetica font unless the name is long enough to require a slightly smaller font. (See Figures 1, 2, and 3.)



Figure 1: LAFD patch with blue background, left shoulder.



Figure 2: Last name above right pocket.



Figure 3: ACS unit patch, right shoulder.

Note: Neckties, collar insignia, pins, decorations, and all other uniform embellishments shall not be worn at any time. EMT pins may be worn one-quarter inch above the left pocket.

UNDERSHIRT—Dark blue. An LAFD dark blue T-shirt is preferred.

TROUSERS—Dickies Work Pant #874DN (dark navy) Twill is the uniform standard. Dickies Cargo Work Pant #WP592DN (dark navy) Twill or 5.11 Tactical Pants #74251 (dark navy) Twill may be substituted if you prefer additional pockets. Trousers made by additional makers may be acceptable if they look substantially the same as those listed above.

FOOTWEAR—Black work Oxford is the minimum standard. Heavy-duty black boots are recommended for safety. Under no circumstances will open-toe footwear be worn. Black or dark blue socks are preferred.

PERSONAL PROTECTIVE EQUIPMENT (ALSO REQUIRED)

All Radio Operators shall possess and use the following Personal Protective Equipment (PPE) for all city-sponsored drills and activations, including those with CERT. PPE may be required and used elsewhere as appropriate. PPE is not required when attending ACS meetings or functions or when the ACS has not been activated unless it is appropriate for the situation.

HARD HAT—A dark navy blue hard hat is required. Other colors are not acceptable as they are already in use by the LAFD identification system. Only ACS approved decals may be used on the hard hat; these are available from your Bureau COML. “Communications” rockers and ACS decals should be affixed on both sides of the hard hat, and an LAFD logo decal should be affixed to the front. A label with your last name and call sign should be placed on the rear of the hard hat.



Figure 4: ERB Industries Omega II 6-point suspension with ratchet, or equivalent, is acceptable.

LEATHER GLOVES—Gloves like this Wells Lamont 1130 Work Glove, or equivalent, are acceptable.



EYE PROTECTION—Eye protection similar to the below is acceptable. Prescription glasses with polycarbonate safety lenses are also acceptable. Eye protection to place over your prescription lenses is recommended.



Figure 5: 3M TEKK Protection Goggles



Figure 6: MSA Safety Work Goggles

NIOSH-APPROVED N95 PARTICLE MASK



Figure 7: 3M 8210 or equivalent.

SAFETY VEST

Figure 8: ANSI Lime Green Safety Vest similar to this Uline version or equivalent.



OPTIONAL ITEMS

HAT—LAFD headgear (baseball cap) is available from various outlets and some fire stations. The hat should be navy blue with white LAFD lettering. The LAFD wider brim floppy style hat in navy blue with white LAFD lettering is also acceptable.

JACKET—Dickies #TJ15DN (dark navy) Eisenhower-style jacket is standard. The LAFD blue background patch should be on the left shoulder and the ACS unit patch on the right shoulder one-half inch below the seams. The Radio Operator's last name should be directly embroidered in white on the right chest per LAFD specifications (half-inch Helvetica or slightly smaller if necessary).

TACTICAL SHORTS—Navy blue tactical shorts, if worn with black socks and black boots or black shoes, may be worn in warm weather. Under no circumstances will regular shorts or cutoffs be worn.



Figure 9 Tactical shorts

APPROPRIATE USE OF UNIFORMS

Unless otherwise instructed, ACS uniforms and ID cards are to be worn at all ACS activations, events, trainings, gatherings, and meetings and should be worn when volunteering as a ACS general volunteer for CERT. Uniforms should be worn any time a Radio Operator is officially representing the ACS in public, such as at community meetings or at LAFD events—especially when the events are held at fire stations or City of Los Angeles facilities. Uniforms will not be worn unless performing ACS duties or officially representing the organization. Questions about when to wear the uniform should be directed to your BCOML.

EQUIPMENT LISTS

The following equipment is required when responding to emergency incidents. You may be deployed for up to seventy-two hours. Equipment needs are divided into two tiers: requirements for all Radio Operators and additional requirements for Primary Radio Operators. *Note:* EOC/FDOC Radio Operators must follow Primary Radio Operator guidelines.

REQUIREMENTS FOR ALL ACS RADIO OPERATORS (ACS RADOS)

- Hand-held radio (dual-band preferred)
- Magnetic mount antenna
- Spare batteries
- External power source (deep-cycle battery or generator)
- A current *Thomas Guide* for Los Angeles County. GPS and other mapping devices may be used but a hard copy *Thomas Guide* is required, as directions may be given using its page and grid coordinates.
- Addresses of all LAFD fire stations (available at www.lafd.org and in the Appendix, p. 7-4)
- Flashlight with spare batteries
- Clipboard, paper, and pens
- ACS Forms
- ICS-205 (ACS Incident Communications Plan)
- ICS-213 (ACS General Message Form)
- ICS-214 (ACS Activity Log)
- ICS-309 (ACS Communications Log)
- LAFD F-27A (ACS Dispatch Worksheet)
- ACS Infrastructure Status Report
- Printed ACS and CERT Comm Plans
- Three quarts of water (minimum)
- Food (three-day supply)
- Snacks (nonperishable)
- Personal supplies (eye drops, sunscreen, toothbrush, toothpaste, deodorant, insect repellent, toilet paper, facial tissue, towel, lip balm, personal wipes, spare LAFD T-shirts, underwear, etc.)
- First aid kit and personal medications
- Pocket knife
- Plastic sheeting, tarp, or drop cloth with rope, duct tape, etc. for temporary shelter
- Current list of Los Angeles-area repeaters
- Personal Protective Equipment as listed above
- Space blanket
- Waterproof matches
- Garbage bags
- Binoculars (optional)
- Chemical light sticks (twelve-hour)
- Sleeping bag
- List of area emergency medical facilities begins on p. 7-27. Updates are available at <http://lafdac.org/download.htm>.

ADDITIONAL REQUIREMENTS FOR ACS PRIMARY RADIO OPERATORS

- 35-watt minimum dual-band, dual-receive mobile radio (144–440 MHz).

Note: A 50-watt dual-band dual-receive UHF/VHF mobile radio is preferred to enable the Radio Operator to operate on one frequency while maintaining the ability to monitor another frequency simultaneously. A dual-band radio may also give a Radio Operator cross-band repeat capability.

- External antenna: High-gain dual-band antenna with a wind-resistant vertical stand, minimum ten feet.

CHAPTER 3 STANDARD OPERATING PROCEDURES

ACTIVATION PROCEDURES

The ACS is a command and control organization and does not self-activate.

ACS Radio Operators are activated when officially requested by a member of the ACS Command Staff to perform functions under Command Staff direction for the City of Los Angeles. Typically, this would be when Amateur Radio communication services are needed by the city or when ACS Radio Operators are requested to perform other functions for the City of Los Angeles. Activations could occur if ordinary LAFD communications fail or require supplementation or if CERT teams are activated and require communications or other assistance.

The following activities are not self-activation:

- Being prepared to activate.
- Maintaining a state of readiness.
- Conducting an Availability Net.
- Conducting a Situational Awareness Net.
- Assembling at North Valley Station in preparation for a possible activation.
- Operating a net from communications trailer at Fire Station 88.

Radio Operators are encouraged to monitor the ACS Channel 1 whenever possible. In the event of a natural disaster or other emergency, a Bureau COML or BCOML will monitor ACS 1 and start a Net to include a general roll call. Simultaneously, the City Radio Officer, ACS Program Manager, or Operations Officer will evaluate the situation and determine if a full activation is required.

Any LAFD or Emergency Management Department personnel or CERT Coordinator can request ACS services. All requests will be confirmed by the appropriate LAFD Captain or Chief Officer. A full activation of the ACS can be authorized only by the City Radio Officer, ACS Program Manager, or ACS Operations Officer. Bureau COMLs and BCOMLs are authorized to bring ACS Radio Operators to standby status.

Full activations will occur when ACS Command Staff determines that Radio Operators are needed in the field. Standby activations will occur when ACS leadership determines there is a need for Radio Operators to monitor the appropriate frequency while the situation and operational requirements are evaluated. Partial activations may occur when a limited number of Radio Operators is needed.

When the ACS is activated, or you are alerted to a situation or experience an earthquake or other emergency first hand, do the following:

1. Tune your amateur radio to ACS Channel 1. Use ACS Channel 3 if ACS 1 is inoperative, or use ACS Channel 5 if neither Channel 1 nor 3 is functioning.
2. Listen for an ACS Net Control operator and follow the instructions. Identify yourself by FCC call sign and member number. If you are the first person on the Net, you shall assume ACS Net Control duties until you are relieved by an ACS Radio Operator with higher authority or more experience.
3. Be prepared to state a concise situational report for your area (e.g. power outages, windows broken, major damage, no visible damage, flooding, mudslides, etc.) and your availability to respond. See the

Appendix (p. 7-23) for the recommended Infrastructure Status Reporting format. **DO NOT SELF-DEPLOY UNDER ANY CIRCUMSTANCE.** See “Situational Awareness” (p. 3-5).

4. Wait for specific instructions from ACS Net Control.
5. In most situations, you may not be given a specific assignment for several hours. Use this time to take care of your family and property, check your communications equipment, and update the supplies needed for a multiday deployment.
6. When activated, you may be asked to perform one or more of the following activities:
 - a) Mobilize in support of CERT at a CERT Command Post or a CERT team in the field.
 - b) Relay radio traffic, which you may be able to do from your home, or you may need to operate from a high location, such as Mulholland Drive.
 - c) Report to a fire station to provide communications, security, or perform other services.
 - d) Report to an LAFD Incident Command Post or Staging Area in the field.
 - e) Be assigned as a communicator to a Battalion Chief or other LAFD Command Staff officer. Primary Radio Operator equipment is required.
 - f) Other services deemed necessary and appropriate by the LAFD or the City of Los Angeles.

Bureau COMLs will respond as directed by the Command Staff at the time of activation. BCOMLs will respond to their respective battalion headquarters unless otherwise directed. The BCOMLs will have a prepared list of priority locations within their battalion boundaries and will dispatch Radio Operators to them as required upon activation.

ACS Radio Operators will not divulge information to the public, especially members of the news media, regarding any activation or incident. Refer all inquiries, including media inquiries, to the Incident Command Staff’s Public Information Officer or, if necessary, a member of the ACS Command Staff.

LAFD HANDHELD 800-MHZ RADIOS

With the approval of Bureau COMLs or BCOMLs, Radio Operators may be issued LAFD handheld 800-MHz radios for use during activations. These radios are used to monitor LAFD activities and to communicate directly with the LAFD in an emergency or when otherwise directed.

The Bureau COMLs or BCOMLs issuing LAFD radios will provide the Metro Floor Captain with the issued radios’ engraved serial numbers and each Radio Operator’s name and cell phone number. The preferred method to contact the Floor Captain is by

- Email: lafd.floorcaptain@lacity.org
- Or fax: 213-626-0062
- Or if necessary, by telephone: 213-576-8911 MFC (Metro Fire Control) Direct

The Floor Captain may be extremely busy, so if you telephone, identify yourself and your ACS position and ask if they have the time to take your radio list. If not, call back when they may have the time to do so. When the LAFD radios are returned, a Bureau COML or BCOML will notify the Metro Floor Captain that the radios are no longer in active use.

If issued an LAFD radio, insure that the radio is turned off before inserting the battery. If the radio is turned on when the battery is inserted, you may activate the Emergency Trigger. **DO NOT PRESS THE ORANGE BUTTON, WHICH WILL ACTIVATE THE EMERGENCY TRIGGER.**

If the Emergency Trigger is activated, the radio will switch to Channel 6, which is a direct link to Metro Fire Control. If the trigger is activated by mistake, immediately use the activated radio to contact Metro, give them the serial number of the radio, and tell them it was an accidental activation. If it is a real emergency, give Metro the details.

See LAFD Radio Operating Procedures in the appendix (p. 7-36) for further information.

PHOTOGRAPHY, VIDEO, AND RECORDING

Per LAFD regulations, Radio Operators shall not take photographs, videos, or recordings of incidents and activations unless specifically approved in advance by the ACS Command Staff. It is particularly important to never photograph, video, or record scenes where there is injury or damage.

Incidental photographs of a general nature and photographs and videos of training and drill activities are allowed unless specifically prohibited.

ACS ACTIVATION IN SUPPORT OF CERT

When CERT is activated, the ACS should be notified by the CERT Administrator or the ACS-CERT Liaison, and Radio Operators will be notified to prepare for possible activation in support of CERT. If you become aware of CERT activation, please advise the ACS-CERT Liaison, your BCOML, or Bureau COML so the ACS Command can be notified.

IF CERT REQUESTS ACS ASSISTANCE:

ACS may support CERT operations at the request of the CERT Administrator, a CERT Coordinator, or appropriate LAFD authority. Radio Operators may be asked to provide communications or act as general volunteers.

- Radio Operators will not respond as general volunteers without approval of ACS Command Staff, the ACS-CERT Liaison, their Bureau COML, or their BCOML. If the response is approved, ACS leadership will monitor the appropriate ACS frequency. Radio Operators responding for CERT will report their status as appropriate for accountability, including the termination of their CERT activities.
- Radio Operators will report to the CERT Staging Area or designated location in ACS uniform with ACS credentials and with their portable radio equipment and supplies. Radio Operators who are CERT trained should bring their CERT credentials and CERT gear with them.
- For communications support, Radio Operators will be directed by the senior Radio Operator on site, the CERT Administrator, or a member of the CERT Incident Command Staff.
- For general volunteer support, Radio Operators will be directed by the CERT Administrator, designee, or CERT Incident Commander.
- Radio Operators reporting as general volunteers to CERT incidents who are not CERT trained must be paired with a CERT-trained responder.
- Radio Operators reporting as general volunteers will be deployed with other CERT members or ACS Radio Operators in teams of two or more.
- Radio Operators will take their Personal Protection Equipment (p. 2-7) when deploying with CERT.
- Radio Operators must inform the ACS staff of their location, activities, and when demobilized by CERT. ACS accountability is mandatory.

Nothing in this section prevents Radio Operators who are also CERT members from responding to CERT incidents as CERT members. It is suggested that they bring their ACS radio equipment with them, just in case.

If ACS is activated other than in support of CERT, as a matter of professional courtesy, the ACS will notify the CERT Administrator, who can be reached during normal business hours at: 213-202-3136.

SITUATIONAL AWARENESS

The ACS does not self-deploy, but ACS Bureau and Battalion COMLs may act as eyes and ears for the City of Los Angeles and the LAFD for events in their immediate neighborhoods. In circumstances where the ACS has not yet been activated, Radio Operators can, as individuals in the course of their normal activities, investigate incidents in their local areas, gather information, and report to the ACS Command Staff. If a major incident could benefit from additional communications support, it is acceptable for Battalion or Bureau COMLs to go to that incident in ACS uniform and with ACS identification and check in with the Incident Command Communications Unit Leader or Staging Area Manager to see if they need ACS support. If ACS support is requested, contact the ACS Command Staff and await further instructions. It is not appropriate to go directly to the Incident Commander. Do not interfere with LAFD personnel.

DEMOBILIZATION

ACS Radio Operators will prepare an ACS ICS-214 Activity Log for the purposes of an after-action report and submit it through the chain of command within seventy-two hours of the end of each activity and response unless otherwise directed. Only one ACS ICS-214, if complete, need be generated for each location when ACS Radio Operators are active in more than one location. The person making the report should include the major activities of all Radio Operators at that location. EOC operations require an EOC ICS-214 for each operator, a copy of which will also be submitted through the ACS chain of command. The ACS ICS-214 report is a learning tool for the Radio Operators and should include both positive and negative observations.

Your ICS-214 Activity Log (see Appendix, p. 7-18, or <http://lafdacs.org/download.htm>) should contain the following information:

- Assignment(s)
- Dispatch time
- On-scene (arrival) time
- Description of duties
- Length of service
- Observation of unusual activities or incidents
- Discuss things that went right and why
- Discuss things that went wrong and why
- Recommendations for improvement

ICS COMPLIANCE

The LAFD operates using the Incident Command System (ICS). For any given situation, the LAFD on-scene Incident Commander has complete and total authority over the situation and all personnel assigned to the incident, including ACS Radio Operators.

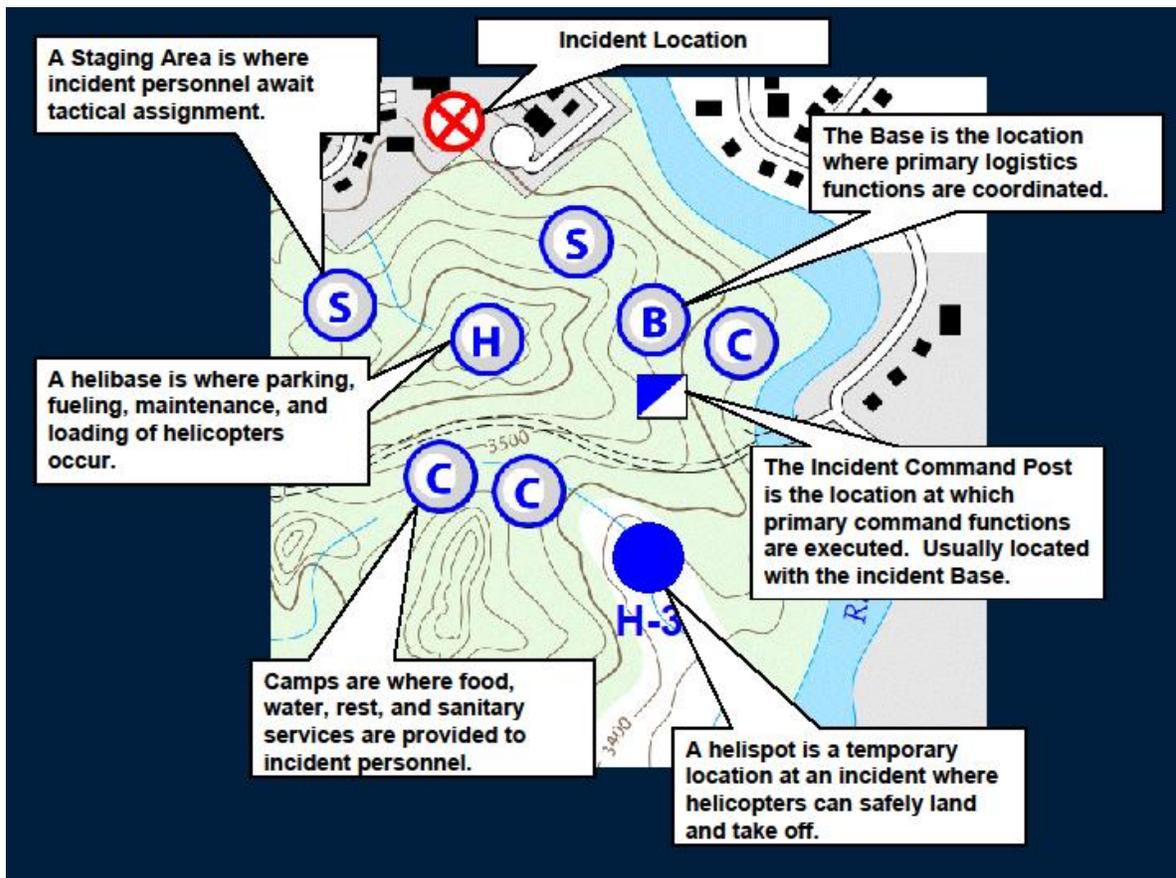
As a Radio Operator deployed to an incident, you may or may not come into direct contact with the Incident Commander. Situations may arise where you are directed to pass message traffic to the Incident Commander either directly or through the chain of command. You are responsible for passing the traffic in an accurate, professional, and impartial manner. The ACS 101 Class is specifically designed to teach you how to pass message traffic properly.

Once in the field, you may be given additional assignments by the Incident Commander that may conflict with the orders you were given from ACS Net Control or the ACS chain of command. In such cases, you will follow the orders of the Incident Commander and inform the ACS Net Control Operator of the change in orders.

Nothing in this document prevents an ACS Radio Operator from following orders of an LAFD Chief Officer as long as compliance with FCC rules is maintained. If so ordered, immediately inform ACS Net Control and, if you are capable of doing so, follow the orders.

Nothing in this document requires ACS Radio Operators to perform tasks beyond their training or that they feel are unsafe.

INCIDENT GEOGRAPHY



STAGING AREA

A Staging Area is a location used to manage Radio Operators and resources. When the ACS is activated for a drill or emergency, the ACS Incident Commander may establish a Staging Area. In an ACS incident, a Bureau Communication Unit Leader or Battalion Communication Unit Leader, if available, will be assigned as the ACS Staging Manager. The Staging Manager will assign Radio Operators as required by Incident Command staff.

ACS Staging Areas will be located in the general vicinity of the emergency but away from immediate danger. Typical locations will be city parks or large open areas such as supermarket parking lots in close proximity to freeway on and off ramps. Staging Areas may be assigned their own Staging Area channel. Radio Operators arriving at a Staging Area should check in with the Staging Manager on the Staging Area channel, if assigned, when approaching the area. Radio Operators may be redirected to a specific assignment by the Staging Manager while traveling to the Staging Area. The Staging Area channel will be announced on the Net and repeated frequently as needed.

STAGING MANAGER

The ACS Staging Manager will dispatch personnel and resources at the request of the Incident Command Staff. The Staging Manager will confirm the Radio Operator's name, FCC call sign, member number, cell phone number, vehicle type and license number, available radio equipment, and time of assignment to a specific supervisor. The Staging Manager will keep a written log of all personnel assignments. The supervisor requesting the resources will maintain a similar log. The use of logs is mandatory for the safety and accountability of Radio Operators.

The Staging Area will have the Staging Manager and at least three defined positions as possible, including check-in, resource management, and radio operations. The Staging Manager will be responsible for implementing these functions as follows:

- Assign personnel to process Radio Operator check-ins.
- Assign personnel to function as the Staging Radio Operator and assistant/scribe.
- Assign personnel to coordinate assignments.
- Assign personnel to inspect Radio Operator vehicles, radios (proper channel plan), and gear for compliance to equipment checklists prior to assignment.

Upon arrival at a Staging Area, Radio Operators will present themselves to the check-in location. At that time, they will fill out an information sheet (see Appendix, p. 7-20) summarizing their available assets, such as vehicle, radio gear, specialty equipment, etc.

All Bureau COMLs and BCOMLs should be prepared to manage an ACS Staging Area and have all of the necessary forms with them as part of their required equipment. Additional equipment includes portable tables and chairs. A sunshade, such as a pop-up shelter, is recommended for weather protection.

POSTS

An Incident Command Post is the location where the Incident Commander and staff are located. The ACS Net Control operator may or may not be located at or near the Incident Command Post. The location of ACS Net Control is incident driven.

PRIMARY ACS COMMAND POST

ACS maintains a primary permanent command post in the ACS communications trailer on the south side of Fire Station 88 in Sherman Oaks.

Capabilities:

- Multiband capability
- Multiagency interface capability (interoperability)
- Multiple towers—dedicated use—all frequencies
- 800-MHz handheld (HT) radios with batteries may be stored at this location.
- Simplex capability with EOC and FDOC and North Valley Station on several bands

ALTERNATE ACS COMMAND POST

ACS maintains a secondary permanent command post at North Valley Station (Old Fire Station 77) in Sun Valley.

Capabilities:

- UHF/VHF radio, HF and LAFD 800-MHz radios
- Multiband capability
- Multiple towers—dedicated use—all frequencies
- 800-MHz handheld (HT) radios with batteries may be stored at this location.
- Simplex capability with EOC and FDOC and the primary command post on several bands

ALTERNATE STATIONS

ACS has limited radio equipment installed at Fire Station 109 on Mulholland Drive west of the 405; Fire Station 5 north of Los Angeles International Airport; and at the Port of Los Angeles Testing Laboratory, Berth 161, in Wilmington.

EOC/FDOC RADIOS—Both the City of Los Angeles Emergency Operations Center (EOC) and Los Angeles Fire Department Operations Center (FDOC) contain all-band radios. Refer to **Chapter 5: EOC Radio Operators Overview** (p. 5-1) for further information.

MOBILE ACS COMMAND POSTS—Mobile ACS command posts may be established using LAFD vehicles or ACS Radio Operator vehicles, depending on the situation and operating requirements.

CHAPTER 4 : RADIO OPERATING PROCEDURES

A communications plan is the assignment of specific radio frequencies for a particular agency, purpose, or geographical area. Copies of the ACS and CERT Communication Plans are available on the LAFD ACS Groups.io page: <https://lafd-acsgroups.io/g/main>. The CERT Communication Plan is also available at <http://www.cert-la.com/cert-la-news/commplan/>.

THE LAFD ACS-CERT COMMUNICATION PLAN

The LAFD ACS-CERT Plan has two elements:

1. The LAFD ACS Communication Plan
2. The LAFD CERT Communication Plan

Together, they form the ACS Communication Plan. All ACS Radio Operators are required to be familiar with both the ACS Comm Plan and the CERT Comm Plan. It is every Radio Operator's responsibility to have a copy of the most recent versions of the ACS-CERT Communication Plans available and programmed into their radios.

THE LAFD ACS COMMUNICATIONS PLAN

The LAFD ACS Communication Plan is a list of frequencies currently in use by the ACS. Each Radio Operator should have a copy of this plan and have all frequencies programmed into their radios. Each frequency is assigned a channel number, and these channel numbers should be programmed into the radios along with each channel frequency. The frequencies are thereafter to be referred to by these channel names. The numeric values for ACS frequencies should **NEVER** be given out over the air or elsewhere. Channel numbers will always be used.

The ACS Comm Plan changes from time to time, and Radio Operators are responsible for maintaining the current Comm Plan in their radios. Comm Plan changes will be announced on the weekly Net and posted on the ACS Groups.io page.

The ACS Comm Plan is confidential and for the use of the ACS only. Do not give a copy of this plan to any other person or agency without Command Staff approval.

ACS COMMUNICATION PLAN CHANNELS

CHANNELS 1 AND 3 are the ACS repeater channels. **CHANNELS 2 AND 4** are the repeater output frequencies and may be used as simplex channels when it is not necessary, or not possible, to use the repeaters. Channels 2 and 4 should not be used as routine simplex channels. Channel 22 is the Baldwin Hills Amateur Radio Club 220-MHz repeater in the Hollywood Hills and can be linked to the ACS Channel 1 repeater. This link, when active, is useful as a 220-MHz input to ACS 1 for those south of the Hollywood Hills.

ACS CHANNEL 5 is the primary simplex frequency and used for talkaround and at events. Channel 5 is also the ACS Battalions 6 and 14 simplex frequency.

CHANNELS 6–9 are the ACS Bureau Frequencies to be used for battalion and bureau communications only. Traffic from a BCOML to the bureau level would use these frequencies.

CHANNELS 10–15 are simplex frequencies for general use and for specific battalions. Message traffic between command posts and evacuation centers, for example, will be passed on these channels.

CHANNELS 16–21 AND 23–28 can be used for local simplex operations including Channel 18 for cross-band repeater operation.

CHANNEL 22 is the Baldwin Hills Amateur Radio repeater, which can be linked to ACS frequencies when needed to provide a 220-MHz input and better coverage in Hollywood and areas south of the Hollywood Hills.

CHANNELS 27 AND 28 are for single sideband (SSB), which may be advantageous during communication emergencies. Single sideband requires a multimode radio, and Radio Operators are encouraged to consider a multimode radio as part of their gear.

Always use the lowest power setting necessary for reliable communications.

ACS Communication Plan frequencies, with the exception of the Channel 1 main repeater frequency, are not to be distributed to anyone outside the ACS organization without Command Staff approval. The Channel 1 repeater frequency and tone information is publicly available and may be distributed to those wishing to listen to the Monday Night Net and check in as a visitor.

Communication Plans are a convenience. Frequencies, bands, or modes not in a plan may be most suitable for certain communications, and Radio Operators suitably equipped and licensed may need to utilize them if the need arises. All Radio Operators are expected to manually program their radios in the field when necessary

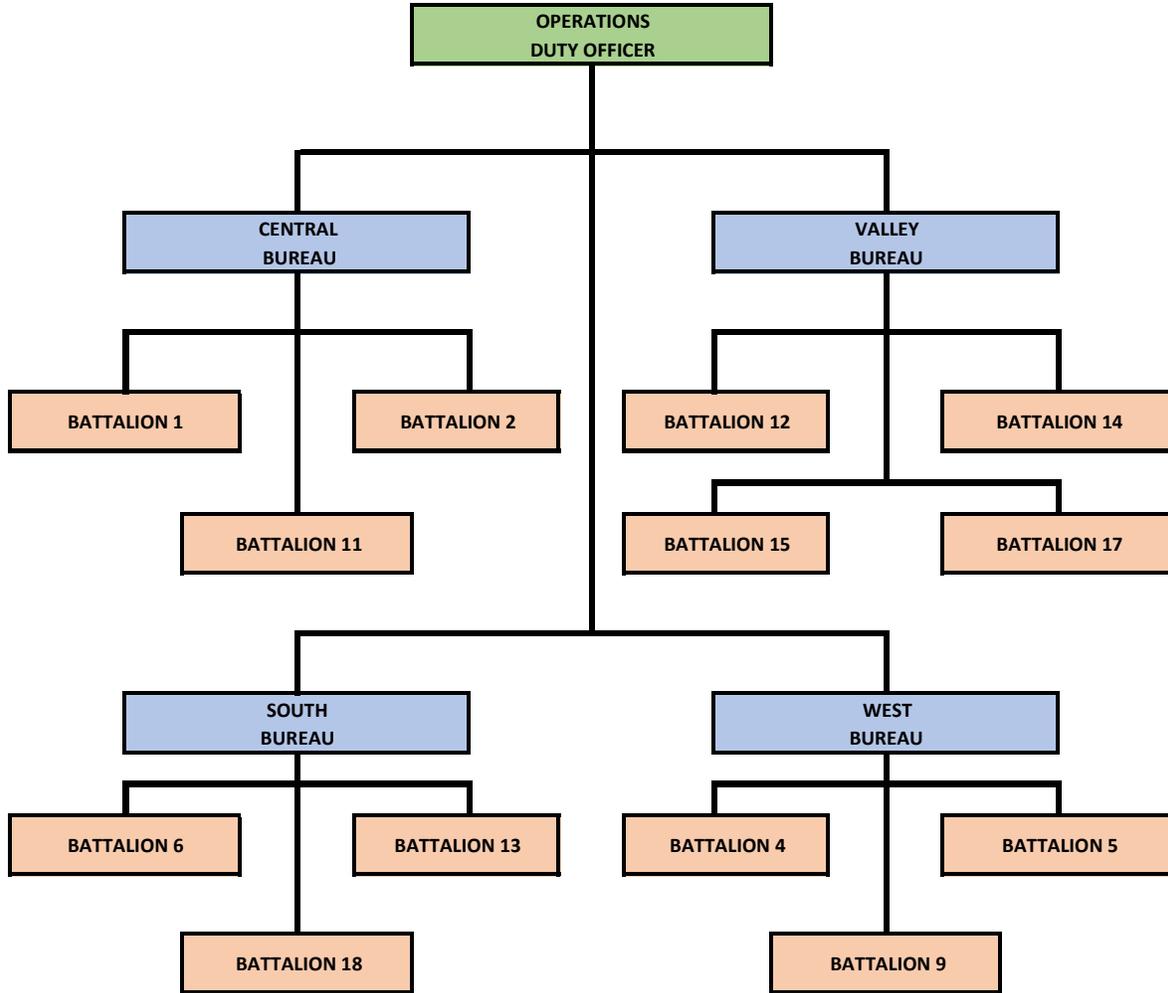
LAFD CERT COMMUNICATION PLAN

The LAFD CERT Communication Plan and user notes can be found at <http://lafdacs.org> or <http://www.cert-la.com/cert-la-news/commplan/>).

This plan is for use by LAFD CERT members and for ACS Radio Operators when supporting CERT operations.

LAFD CERT COMM PLAN ORGANIZATION

Revised October 9, 2017



FLOW OF INFORMATION



ACS REPEATER PROCEDURES

Keep all radio traffic as concise as possible and use the lowest power level necessary. During an emergency, there will be a high volume of radio traffic waiting to be passed. Do not transmit trivial information. Be professional. Someone's life may depend on it.

The ACS currently operates a primary and a secondary repeater.

PRIMARY REPEATER RULES: ACS 1

The primary ACS repeater, WA6PPS, is listed as Channel 1 in the ACS Communication Plan. During Net check-ins, ACS activations, and other Nets, an ACS Net Control operator will be in control of the repeater at all times and will be identified as N6ACS. This is a private repeater owned and maintained by the Radio Amateur Association of Van Nuys that is located on Verdugo Peak.

Please yield the frequency to any request for emergency or priority traffic or any Radio Operator conducting official communications, including drills, community fire patrols, Nets, or N6ACS radio club communications.

ACS Channel 1 shares a repeater frequency pair with the DARN System repeater in San Diego and with another repeater in Upland. The DARN repeater in particular can cause disruption at times, especially south of Mulholland Drive. For this reason, it is preferable to use CTCSS decode on ACS 1 and ACS 2 (the ACS 1 repeater output), but only these two channels. All other ACS channels, per the ACS Comm Plan, should be set to encode, but **NOT** to decode. It is best practice not to use CTCSS decode for emergency communications unless necessary, except at ACS 1 and 2.

Local community fire patrols, LAFD fire patrols, and Arson Watch groups have permission to use this repeater. Please do not interfere with their operations. They will grant you access for short contacts upon station identification and request when appropriate.

Any person using this repeater will abide by all FCC regulations without exception. **DO NOT** attempt to make contact with jammers or any other station causing interference, intentional or otherwise. If ACS 1 is not usable for any reason, change to the secondary repeater, ACS 3. If neither ACS 1 nor ACS 3 is useable, change to ACS 5, which is a simplex frequency.

SECONDARY REPEATER RULES: ACS 3

The secondary ACS repeater, N6ACS, is currently listed as Channel 3 in the ACS communication plan. This N6ACS repeater is privately owned by the N6ACS radio club. It is maintained by the ACS Program Manager.

It is located near the intersection of Mulholland Drive and Coldwater Canyon and may have better propagation into some of the harder to reach canyons and the North Valley area, as well as areas directly south of the Santa Monica Mountains.

This repeater is also the primary repeater for the CERT Communications Plan and the Hillside Emergency Communications Group. This repeater is assigned to CERT Amateur Operators for initial CERT contacts when necessary and before they move to a simplex frequency. CERT Radio Operators and other approved groups have permission to use this repeater on an as-available basis. Please yield the frequency to any operator with

emergency traffic or conducting official communications, including drills, community fire patrol, Nets, CERT contacts, or N6ACS radio club communications.

Any person using this repeater will abide by all FCC regulations without exception. **DO NOT** attempt to make contact with jammers or any other station causing interference, intentional or otherwise.

FREQUENCIES, CALL SIGNS, AND PROCEDURES

SIMPLEX FREQUENCIES

All Amateur Radio frequencies are open to monitoring by the general public. The frequencies published in the communications plans were selected for their low volume of traffic, but they are not private and can be used by any licensed amateur operator. Many, if not all, of these frequencies appear in the communications plans of other groups, such as ARES. The ACS does not have exclusive rights to these frequencies. In an emergency, these frequencies may become busy. Please respect the rights of others and find another frequency or politely share the bandwidth by using proper radio protocol.

If you lose contact using simplex channels, contact ACS Net Control and request the use of the repeater to reestablish contact. The ACS Net Control operator will authorize the use of the repeater if possible. Primary operators with dual-receive, dual-band radios will be able to monitor the repeater while operating on a simplex channel.

Always use the lowest power necessary for reliable communications.

TACTICAL CALL SIGNS

Tactical call signs are used to shorten transmissions and provide rapid identification of the Radio Operator's location and duties. Your member number (i.e. 14-137) is not your tactical call sign.

Tactical call signs may be assigned based on a Radio Operator's function or location during an activation or drill and should be unique (e.g. ACS La Tuna Command, Sun Valley Shelter, West Mulholland Relay, Colfax Staging, etc.). Situational tactical call signs typically do not change when a new operator takes over the position; the tactical call sign goes with the assignment, not with any specific operator. In the absence of such assigned tactical call signs, such as during the weekly ACS Nets, Radio Operators will continue to use their individual member number, consisting of a battalion assignment followed by the Radio Operator's serial number, to check in to the Net.

Per FCC regulations, at ten-minute intervals of a continuous transmission or at the end of a transmission, identify yourself with a tactical call sign (if any) followed immediately by your FCC call sign. See also "Adherence to FCC Regulations" in this document (p. 4-10) for additional station identification requirements.

USE OF CHANNEL NUMBERS

To prevent interference from jammers, never give out ACS channel frequencies over the air. Always use ACS channel numbers. Jammers usually want attention. Do not reward them by referring to them in any way. Just ignore them.

QUICK KEYING

When using a repeater, wait at least one second after keying the microphone for the repeater to come on line before speaking. This allows the repeater time to receive your signal and retransmit it completely. When using EchoLink or other linked systems, allow additional time between transmissions.

PERSONAL INFORMATION

Personal information such as names, phone numbers, or email addresses should never be transmitted unless the sender has specifically received permission to do so. For example, it is permissible for you to give your name or phone number or email address out on the air, but it is **NOT** permissible for you to give someone else's personal information out over the air without their explicit permission.

TRANSMITTED INFORMATION

The Amateur Radio airwaves are open to anyone with a radio. Transmissions are never encrypted and others are listening, including members of the media. Information you transmit can be easily misunderstood or misused by those with an ulterior motive or not familiar with the situation, which can cause confusion, dissemination of misinformation, or even panic. Do not transmit information of a sensitive nature unless that information is essential and specifically authorized by an Incident Commander or member of the LAFD or ACS Command Staff for transmission. If sensitive information is given to you for transmission, consider suggesting other ways the message may be formed so the transmission does not cause undue concern to members of the public. Consider other forms of communication, including fax machines or runners if necessary.

When transmitting practice messages as part of a drill, always include "This Is a Drill" as part of your message.

NET FORMATS

A Net provides a means for orderly communication within a group of stations.

DIRECTED NET—A Net Control station organizes and controls all Net activity. One station wishing to call or send a message to another in the Net must first receive permission from the Net Control operator. This is the Net format regularly used by the ACS.

OPEN NET—Stations may contact each other directly without the use of a Net Control operator. Open Nets are not typically used during ACS operations but may be used informally such as during the roundtable after the Monday Night Net.

EMERGENCY NET—Formed to expedite the transfer of emergency traffic and information. Emergency Nets can be the following types:

- *Traffic Net*—Handles formal written messages in a specified format.
- *Tactical Net*—Used for real-time coordination of activities related to the emergency.
- *Resource Net*—Typically is a directed Net used to acquire volunteers and resources.
- *Situational Awareness Net*—Usually an open Net used to collect and share information on a developing situation.

NET CHECK-IN PROCEDURE

Follow the on-air instructions from the ACS Net Control operator for the first check in. Once the Net is operational and you have a message to pass, you can add “with traffic” after your call sign. If it is an emergency message, state “with emergency traffic” after your call sign. The same would be true for priority traffic.

If you are not certain that a Net is in operation, transmit your call sign and wait.

ALWAYS wait for your call sign to be acknowledged before sending your traffic.

If it is necessary for you to leave a Net, either temporarily or permanently, notify ACS Net Control you are doing so. Upon returning to the Net, let ACS Net Control know that you are back on station. This is for Radio Operator accountability and lets ACS Net Control know that you do not need any assistance.

PHONETIC ALPHABET

The International Civil Aviation Organization/NATO phonetic alphabet is one of the most widely recognized phonetic alphabets and is the standard for all ACS operations.

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

Note that Pa-pá is pronounced with the emphasis on the second syllable.

PLAIN ENGLISH

LAFD and ACS policy is to use plain English as the standard for all spoken messages. Do not use codes such as Q codes or 10 codes, or slang—including Citizens Band Radio slang—for emergency communications. Plain English is always acceptable, is the easiest to understand for most listeners, and decreases the chance of confusion or misinterpretation. Pro-words (see below) are acceptable plain English words.

An exception to this rule is the use of the Q code QST. QST is generally accepted to be a special alert to all Amateur Radio Operators, as in “QST, QST, QST,” and is often used at the beginning of Amateur Radio Net Control Operations.

PRO-WORDS

Pro-words, called pro-signs when sent in Morse code, are procedural terms with specific meanings. They are used to save time and ensure that everyone understands precisely what is being said. Some pro-words are used in general communications, others while sending and receiving formal messages.

BREAK—Intentional short pause in a conversation, or a request for one.

STAND BY—Temporary interruption of a contact—you wait until I resume my transmission. Wait at least sixty seconds if possible.

OVER—I have finished a transmission to you **AND** I expect a reply from you.

GO AHEAD—Indicates a receiving station may respond.

OUT—I have finished a transmission to you and I **DO NOT** expect a reply from you. *Note:* “Over” and “Out” would never be used together because they have conflicting meanings.

ROGER—Indicates that a transmission has been received correctly and understood.

CLEAR—End of contact and/or leaving the frequency.

EMERGENCY TRAFFIC

Emergency traffic always has priority. Once emergency traffic is declared, all other users immediately yield the frequency to those handling the emergency message. If you have emergency traffic, notify the network by saying:

“Break. This is (your battalion and serial number and FCC call sign) and I have emergency traffic.”

Once the frequency is clear, proceed with your emergency traffic.

All other members will yield the frequency to you and your emergency. When your emergency traffic has concluded, notify the Net by saying:

“This is (your battalion and serial number and FCC call sign). Emergency traffic concluded.”

The Net then returns to normal operation.

If more than one emergency traffic situation has been declared, the ACS Net Control Operator decides which messages to receive and in what order. Follow ACS Net Control directions.

ADHERENCE TO FCC REGULATIONS

ACS Radio Operators shall comply at all times with Part 97 of FCC regulations governing transmissions on the Amateur Radio bands. These regulations include, but are not limited to, the following:

- **IDENTIFICATION USING AMATEUR RADIO CALL SIGNS**—Tactical call signs, member numbers, and other ACS identifiers are a normal part of ACS operations, **BUT THEY ARE NOT A SUBSTITUTE FOR FCC-MANDATED STATION IDENTIFICATION**. All Radio Operators transmitting on the Amateur Radio bands must give their FCC call signs at the end of every communication (which may be a single transmission or a series of transmissions) and every ten minutes during longer communications [97.119(a)]. Conversely, Amateur Radio call signs must not be used when ACS Radio Operators are transmitting using LAFD radios, FRS/GMRS radios, or other non-Amateur radio services; tactical call signs may be used instead. GMRS users must have an FCC GMRS license to transmit on GMRS frequencies when using GMRS power and must identify using their FCC GMRS call signs as required. GMRS licenses are issued for ten-year terms, are valid for an entire family, and do not require any examination.
- **NO COMPENSATION**—No Radio Operator may accept compensation in exchange for making transmissions on the Amateur Radio bands except as described below in the case of LAFD or city employees [97.113(a)(2)].
- **DEPARTMENT BUSINESS**—Radio Operators may not use Amateur Radio bands to conduct routine City of Los Angeles or LAFD communications on a regular basis that could reasonably be provided using other services [97.113(a)(5)]. Radio Operators who are paid LAFD or city employees may not transmit messages for the benefit of the LAFD or the city using Amateur Radio bands except as follows:
 - When participating in an emergency preparedness or disaster readiness test or drill, limited to the duration and scope of such test or drill, and operational testing immediately prior to such test or drill [97.113(a)(3)(i)].
 - During an actual disaster response as an incidental part of their regular duties [97.403].
- **NO RETRANSMISSIONS**—ACS Radio Operators may not retransmit signals originating from a City of Los Angeles radio, LAFD radio, or other non-Amateur radio service [97.113(c)]. However, ACS Radio Operators may relay the content of such messages via Amateur Radio, as appropriate.
- **THIRD-PARTY COMMUNICATIONS**—Transmitting messages on the Amateur Radio bands on behalf of third parties is permitted within the United States. This includes allowing a non-Amateur to speak directly into a transceiver microphone as long as the Amateur licensee is present to act as control operator [97.7(a)].

CHAPTER 5 : EOC RADIO OPERATORS OVERVIEW

GENERAL

An Emergency Operations Center (EOC) is a place where city, county, state, and other agencies meet to form a unified command to manage an emergency or potential emergency situation. A Department Operations Center (DOC) is the place where a specific department, command staff, and managers meet to manage an emergency or potential emergency situation. The current City of Los Angeles EOC and LAFD DOC are located in the Emergency Management Department (EMD) at 500 East Temple Street in Los Angeles, next to Fire Station 4.

The Los Angeles EOC contains the Amateur Radio Operating Center (AROC), Room 159, which consists of two amateur radios dedicated for ACS use. Two additional amateur radios are located upstairs in the LAFD's Fire Department Operating Center (FDOC), room 255.

ACS Operations Center Radio Operators are specially designated, qualified, and trained ACS personnel who will respond to the EOC or FDOC, when activated, to staff and operate amateur radios at those locations. From the EOC and FDOC, ACS can pass message traffic to the communications trailer at Fire Station 88, North Valley Station, and Fire Station 5, for relay to ACS Radio Operators citywide. ACS may also be in contact with CERT and other emergency response organizations and pass traffic to and from them to provide situational awareness information to the EOC and FDOC.

The Operations Center Radio Operator position requires additional training and certifications, which are described below. Operations Center Radio Operators still conform to all ACS and LAFD rules and regulations.

REQUIREMENTS

To be an ACS Operations Center Radio Operator, a Radio Operator must be in good standing and complete all ACS training in addition to Operations Center training. To be an Operation Center Radio Operator, you must complete the Operations Center training (one day), have the equipment level of a Primary Radio Operator, have the necessary ACS forms and supplies, and hold an FCC General Class license or above. A Radio Operator with Operations Center training who does not have an FCC General Class license or above may assist at the EOC or FDOC under the direction of a properly licensed Operations Center Radio Operator acting as the Control Operator.

Additionally, the following courses must also be completed: FEMA Independent Study Courses IS-100, IS-200, IS-700, and IS-800, and the Los Angeles City Emergency Management Department's EOC-101/201. Certification of completion must be submitted to the ACS Records Administrator. Anyone who has completed the above trainings and meets the requirements is eligible to be an ACS Duty Officer, as described below.

ACS DUTY OFFICER

The ACS Duty Officer, when activated by the City Radio Officer, ACS Program Manager, or their designee, will respond to either the FDOC or EOC depending on the nature of the emergency. The City Radio Officer or ACS Program Manager will clarify which location(s) will be staffed. The first Radio Operator directed to the EOC or FDOC by the City Radio Officer or ACS Program Manager will be the ACS Duty Officer until relieved by a Radio Operator with more experience or higher level of authority.

Depending on the nature of the incident, the Duty Officer will make the determination if additional Operations Center Radio Operators are needed. In the event of a larger or catastrophic incident, the Duty Officer, with the approval of the City Radio Officer, ACS Program Manager, or ACS Operations Officer will begin activations of the bureau and battalion levels as needed.

STANDARD OPERATING PROCEDURES

ACTIVATION PROCEDURES

The ACS Duty Officer will be activated by the City Radio Officer, ACS Program Manager, or their designee. The Duty Officer will make the determination if additional Operation Center Radio Operators are needed at the LAFD DOC or EOC. If additional Operations Center Radio Operators are activated by the Duty Officer, they must communicate to the Duty Officer whether they are able or unable to respond.

All Radio Operators who enter the EOC or LAFD DOC must be dressed in the official ACS uniform and must first report in with security personnel. They must show both their city-issued ACS identification card and a valid government-issued ID card (i.e. driver's license). Security personnel will match the name on the ID with the current LAFD ACS membership roster, which will be routinely sent to EMD.

PARKING

Parking may be available next to EMD at 500 East Temple Street in the Human Resources Department parking garage, which is shared with the EMD. Upon activation to the EOC, you may park in the designated EMD parking spots on the third level. Produce your ACS identification to the security guard at the garage entrance if asked to do so.

In an after-hours activation, the parking garage may still be accessible.

Street parking is available on the surrounding blocks and may be necessary or preferable if the EMD parking structure is damaged. Some street parking is metered. If necessary, the ACS may set up portable communications systems on the roof of the parking structure.

SECURITY

Once parked and checked in, proceed to the Radio Operator personnel check-in desk, which will be located in the training room adjacent to the lobby of EMD. Security should have a current list of ACS Radio Operators. Fill out a Radio Operator profile and get a temporary EOC ID allowing key card access for the appropriate doors. The EOC badge must be displayed **AT ALL TIMES**. Badges must be visible and located above the waist. After checking in, proceed directly to the appropriate EOC or FDOC amateur radio rooms and begin position checklist procedures.

FOOD

Per ACS requirements, Operations Center Radio Operators are required to maintain a “go kit” with food and water for three days, but the Emergency Management Department may provide food to Operations Center Radio Operators during activations

SITUATIONAL STATUS AND INTELLIGENCE—FOR OPERATIONS CENTER RADIO OPERATORS

Amateur radio will be the last line of defense when other communication systems are damaged or have become inoperable and may be the only direct link to LAFD and CERT command posts throughout the city. For these reasons, ACS will provide a critical link in the flow information. Additionally, although normal communications may initially be operational, in a larger scale incident it is possible that they could become damaged or inoperable. For this reason, Operations Center Radio Operators are to maintain situational awareness of the information coming from the battalion and bureau levels. Operations Center Radio Operators will, either electronically or by hand, mark incident locations and any other pertinent information on a map. When primary communications systems are damaged or inoperable, operators will already be prepared to provide the most current information available to them to EOC and FDOC commanders.

If Metro Dispatch fails or is overwhelmed, ACS may be asked to provide dispatch information to the Bureau and Battalion Chiefs directly, or by relay through the communications trailer, North Valley Station, Fire Station 5, Fire Station 109, and elsewhere. LAFD Form F-27A, the dispatch and operations form and worksheet used prior to the current computer-aided dispatch system, will be used. Radio Operators should have copies of this form with them and be familiar with its use. In larger scale incidents and worst-case scenarios, the ACS will provide additional functions when necessary. One of these functions may be contacting CERT Incident and Command Posts, relaying of reports from the battalion and bureau levels, and compiling all this information for the Situation Analysis Unit Leader within the Planning Section.

EXTERNAL COMMUNICATION AND ADDITIONAL RESOURCES

Additionally, Operations Center Radio Operators are unique from other ACS Radio Operators in terms of the resources they can contact. Operations Center Radio Operators will monitor all ACS and CERT communications but additionally will have the capability to communicate with many external entities and at all levels of government: city, county, and state. In a large-scale emergency, intercounty communications will be a valuable resource for the region.

COMMUNICATIONS PROCEDURES

Information and ICS-213 messages delivered to and gathered from the various ACS resources and entities will be organized, mapped, and delivered to the ACS Duty Officer, who will distribute them to the appropriate EOC or FDOC Coordinator. Appropriate ICS-214 and ICS-205a forms will also be generated. LAFD Form F27A will be used for LAFD Dispatch messages when required.

SET UP AND ACTIVATION:

All Kenwood TS-2000x radios in the EOC Amateur Radio Operating Center (AROC) and Fire Department Operations Center (FDOC) operate from computers running Kenwood Remote Command software connected to Kenwood TS-2000x radios in the server rooms of City Hall East and the Emergency Management Department.

Upon arrival and check in, Operations Center Radio Operators will activate and establish that communications are operational and will establish communications with appropriate external ACS positions per the ACS CERT Communications Plan. See Position checklists (p. 6-2) for specific set up instructions.

EOC RADIO BREAKOUT ROOM EQUIPMENT LIST:

AROC computers are located in a room marked “Amateur Radio” in the northwest corner of the EOC.

WORKSTATION 1—One computer for Radio 1, connected to the radio in the server room of City Hall East (CHE) and the vertical antenna on top of the nineteenth floor.

WORKSTATION 2—One computer for Radio 2, connected to the radio in the server room of the EMD and the vertical antenna on the EMD roof.

FDOC RADIO ROOM EQUIPMENT LIST:

The FDOC radio computers are located to the left just inside the door to the FDOC on the second floor.

WORKSTATION 1—One computer for Radio 1, connected to the radio in the server room of City Hall East (CHE) and the vertical antennas on top of the nineteenth floor.

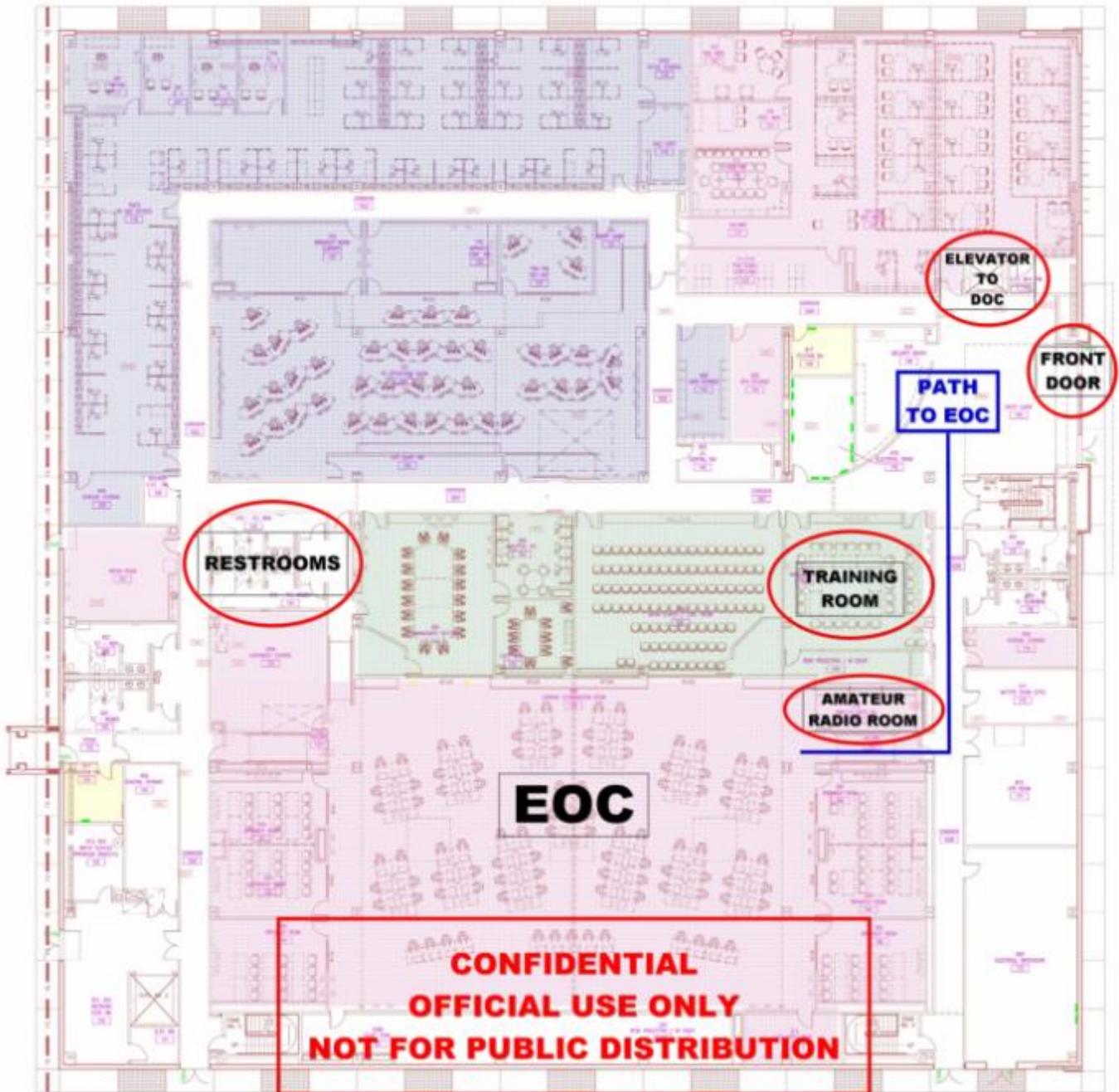
WORKSTATION 2—One computer for Radio 2, connected to the radio in the server room of the EMD and the vertical antennas on the EMD roof

Note: The antennas on CHE may give better propagation because of its location and additional height.

OPERATIONS CENTER RADIO OPERATORS POSITION CHECKLIST

- Check in with Logistics Deputy Section Coordinator (LAFD) upon arrival at EMD
- Check in with the ACS Duty Officer upon arrival at EMD
- Obtain briefing from Logistics Deputy Section Coordinator (LAFD) or Planning Section Chief
- Identify supervisor in organization
- Identify work location, resources available, expectations of incident organization concerning timelines, report format, etc.
- Proceed to ACS EOC or FDOC radio areas as appropriate
- Obtain copy of Incident Action Plan, if available
- Obtain copy of Incident Communications Plan (ICS Form 205), if available
- Verify functionality of all radio equipment
- Establish communications via LAFD ACS Communication Plan
- Establish communication with ACS Operations Officer and the ACS Program Manager as possible.
- Establish communications with ACS Radio Operators at the communications trailer, North Valley Station, and Fire Station 5 as possible.
- Establish communication with Bureau Supervisors
- Establish communications with CERT and other emergency communications organizations as appropriate
- Be prepared to receive, transmit, and relay information
- Ensure you have all appropriate forms and documentation
- Monitor ACS communications and CERT communications as possible
- Write down pertinent traffic to gain situational awareness
- Mark incidents on incident map either electronically or by hand
- Document all activity on the Unit Log (ICS Form 214)
- Assign duties to secondary Radio Operator as needed
- As it becomes closer to the end of the operational period, prepare an Incident Briefing (ICS Form 201) for relief personnel

EOC FIRST FLOOR LAYOUT



MOTOROLA CHANNEL NUMBERING CHART

While the FCC determines the frequencies and privacy tones used in the FRS and GMRS radio services, channel and tone numbering is left up to the manufacturer. The ACS-CERT Communications Plan uses the Motorola numbering standard. To avoid confusion, check your radio against a known Motorola standard radio and record your radio's channel and tone numbers in the chart below.

The twenty-two channels assigned to the FRS and GMRS radio services are all shared, meaning that FRS operators can talk to GMRS operators and vice versa on all twenty-two channels. Channels 15–22, however, offer GMRS users the highest power option, so these are preferred for tactical communications.

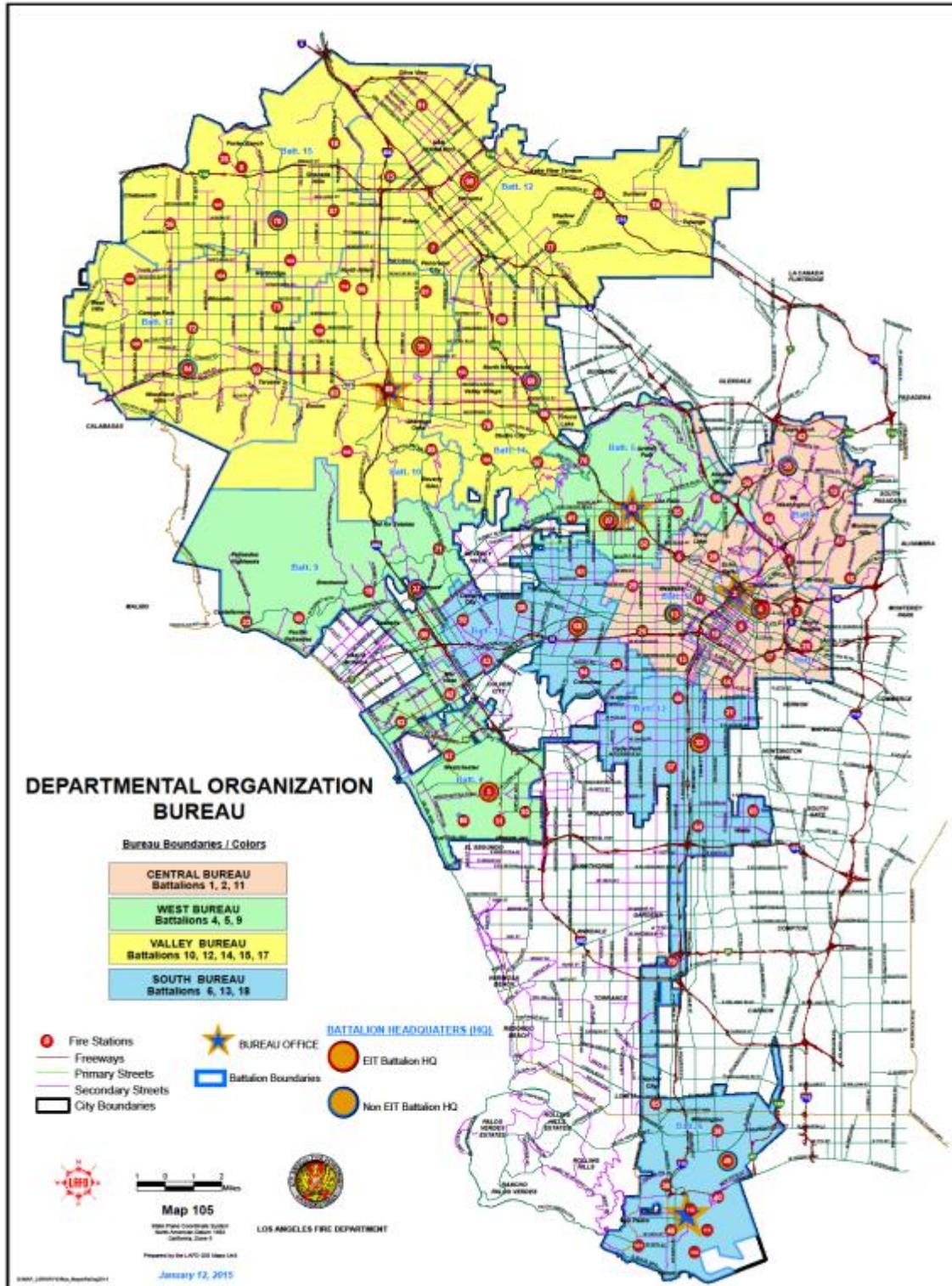
Use this chart and the manual that came with your radio to find the proper channel numbers. Make a cheat sheet and tape it to your FRS or GMRS radio if necessary.

FRS-GMRS FREQUENCY CHART (2018)

NEW FRS-GMRS CHANNELS (MOTOROLA STANDARD)										
<p>While the FCC determines the frequencies and privacy tones to be used in the FRS and GMRS Radio Services, channel numbering is left up to each manufacturer. The ACS-CERT Communications Plan uses the Motorola FRS Channel Numbering standard. To avoid confusion, compare your radio with a known Motorola standard radio then record your channel numbers in the chart below. Under the revised FCC Rules (October 2017) all 22-FRS and GMRS channels are shared, meaning that FRS users can communicate with GMRS users on all 22-channels. Channels 15-22, however, offer GMRS users the highest power option, making them preferred for tactical use. Use this chart and the manual that came with your radio to find the proper channel numbers. Make a cheat sheet and tape it to your FRS or GMRS radio if necessary.</p>										
STD.* #	MY RADIO #	FREQUENCY	FRS		GMRS [^]		COMMENTS USAGE**	PRIVACY TONES ^{^^}		
			FRS	FRS MAX POWER	GMRS	GMRS MAX POWER		STD. TONE #	MY TONE #	PL TONE
1		462.56250	X	2-watts	X	5-watts	H, B, M	1		67.0
2		462.58750	X	2-watts	X	5-watts	H, B, M	2		71.9
3		462.61250	X	2-watts	X	5-watts	H, B, M	3		74.4
4		462.63750	X	2-watts	X	5-watts	H, B, M	4		77.0
5		462.66250	X	2-watts	X	5-watts	H, B, M	5		79.7
6		462.68750	X	2-watts	X	5-watts	H, B, M	6		82.5
7		462.71250	X	2-watts	X	5-watts	H, B, M	7		85.4
8		467.56250	X	1/2-watt	X	1/2-watt	H	8		88.5
9		467.58750	X	1/2-watt	X	1/2-watt	H	9		91.5
10		467.61250	X	1/2-watt	X	1/2-watt	H	10		94.8
11		467.63750	X	1/2-watt	X	1/2-watt	H	11		97.4
12		467.66250	X	1/2-watt	X	1/2-watt	H	12		100.0
13		467.68750	X	1/2-watt	X	1/2-watt	H	13		103.5
14		467.71250	X	1/2-watt	X	1/2-watt	H	14		107.2
15		462.55000	X	2-watts	X	50-watts	H, B, M, RO	15		110.9
16		462.57500	X	2-watts	X	50-watts	H, B, M, RO	16		114.8
17		462.60000	X	2-watts	X	50-watts	H, B, M, RO	17		118.8
18		462.62500	X	2-watts	X	50-watts	H, B, M, RO	18		123.0
19		462.65000	X	2-watts	X	50-watts	H, B, M, RO	19		127.3
20		462.67500	X	2-watts	X	50-watts	H, B, M, RO	20		131.8
21		462.70000	X	2-watts	X	50-watts	H, B, M, RO	21		136.5
22		462.72500	X	2-watts	X	50-watts	H, B, M, RO	22		141.3
"550"		467.55000			X	50-watts	RI	23		146.2
"575"		467.57500			X	50-watts	RI	24		151.4
"600"		467.60000			X	50-watts	RI	25		156.7
"625"		467.62500			X	50-watts	RI	26		162.2
"650"		467.65000			X	50-watts	RI	27		167.9
"675"		467.67500			X	50-watts	RI	28		173.8
"700"		467.70000			X	50-watts	RI	29		179.9
"725"		467.72500			X	50-watts	RI	30		186.2
								31		192.8
								32		203.5
								33		210.7
								34		218.1
								35		225.7
								36		233.6
								37		241.8
								38		250.3

* Motorola Standard
 ** Handheld(H) Mobile(M) Base(B)GMRS Repeater Input(RI) Repeater Output (RO)
 ^ GMRS users required to have an FCC GMRS License
 ^^ Privacy tones should not be used in tactical situations unless absolutely necessary.

LAFD BATTALION MAP



LOS ANGELES CITY FIRE STATION DIRECTORY (9/12/2016)

Station	Telephone	Address	Community
1	213-485-6201	2230 Pasadena Avenue	Lincoln Heights
2	213-485-6202	1962 East Cesar Chavez Avenue	Boyle Heights
3	213-485-6203	108 North Fremont Avenue	Civic Center / Bunker Hill
4	213-485-6204	450 East Temple Street	Little Tokyo / Olvera Street/ Chinatown
5	213-485-6205	8900 South Emerson Avenue	Westchester / LAX Area
6	213-485-6206	326 North Virgil Avenue	Angeleno Heights
7	818-892-4807	14630 Plummer Street	Panorama City
8	818-756-8668	11351 Tampa Avenue	Porter Ranch
9	213-485-6209	430 East 7th Street	Central City
10	213-485-6210	1335 South Olive Street	Convention Center District
11	213-485-6211	1819 West 7th Street	Westlake / MacArthur Park
12	213-485-6212	5921 North Figueroa Street	Highland Park / Arroyo Seco
13	213-485-6213	2401 West Pico Boulevard	Pico-Union / Koreatown
14	213-485-6214	3401 South Central Avenue	Newton
15	213-485-6215	915 West Jefferson Boulevard	University Village / USC
16	213-485-6216	2011 North Eastern Avenue	South El Sereno
17	213-485-6217	1601 South Santa Fe Avenue	Industrial Eastside
18	818-756-8618	12050 Balboa Boulevard	Knollwood / Granada Hills
19	310-575-8519	12229 West Sunset Boulevard	Brentwood
20	213-485-6220	2144 West Sunset Boulevard	Echo Park
21	213-485-6221	1192 East 51st Street	South Los Angeles
23	310-575-8523	17281 Sunset Boulevard	Palisades Highlands
24	818-756-8624	9411 Wentworth Street	Shadow Hills / Sunland
25	213-485-6225	2927 Whittier Boulevard	South Boyle Heights
26	213-485-6226	2009 South Western Avenue	West Adams
27	213-485-6227	1327 North Cole Avenue	Hollywood
28	818-756-9728	11641 Corbin Avenue	Porter Ranch
29	213-485-6229	4029 West Wilshire Boulevard	Hancock Park
33	213-485-6233	6406 South Main Street	South Central
34	213-485-6234	3661 7th Avenue	Crenshaw
35	213-485-6235	1601 North Hillhurst Avenue	Los Feliz

36	310-548-2836	1005 North Gaffey Street	North San Pedro
37	310-575-8537	1090 Veteran Avenue	Westwood / UCLA
38	310-548-7538	124 East "I" Street	Wilmington
39	818-756-8639	14415 Sylvan Street	Van Nuys
40	310-548-7540	330 Ferry Street	Terminal Island
41	213-485-6241	1439 North Gardner Street	Hollywood (Hills & Northwest)
42	213-485-6242	2021 Colorado Boulevard	Eagle Rock
43	310-840-2143	3690 Motor Avenue	Palms
44	213-485-6244	1410 Cypress Avenue	Cypress Park
46	213-485-6246	4370 South Hoover Street	Coliseum Area
47	213-485-6247	4575 Huntington Drive South	El Sereno
48	310-548-7548	1601 South Grand Avenue	San Pedro
49	310-548-7549	400 Yacht Street, Berth 194	East Harbor Basin
50	213-485-6250	3036 Fletcher Drive	Glassell Park / Atwater Village
51	213-485-6251	10435 Sepulveda Boulevard	LAX / Terminal Area
52	213-485-6252	4957 Melrose Avenue	Hollywood (Southeast)
55	213-485-6255	4455 East York Boulevard	Eagle Rock
56	213-485-6256	2759 Rowena Avenue	Silver Lake
57	213-485-6257	7800 South Vermont Avenue	South Central
58	213-485-6258	1556 South Robertson Boulevard	Pico / Robertson
59	310-575-8559	11505 Olympic Boulevard	West Los Angeles
60	818-756-8660	5320 Tujunga Avenue	North Hollywood
61	213-485-6261	5821 West 3rd Street	Fairfax
62	310-397-2662	11970 Venice Avenue	Mar Vista
63	310-575-8563	1930 Shell Avenue	Venice
64	213-485-6264	10811 South Main Street	South Los Angeles
65	213-485-6265	1801 East Century Boulevard	Watts
66	213-485-6266	1909 West Slauson Boulevard	Southwest LA / Hyde Park
67	310-862-2844	5451 Playa Vista Drive	Playa Vista
68	213-485-6268	5023 Washington Boulevard	Mid-City
69	310-575-8569	15045 Sunset Boulevard	Pacific Palisades
70	818-756-7670	9861 Reseda Boulevard	Northridge
71	310-575-8571	107 South Beverly Glen Boulevard	Bel Air / Holmby Hills
72	818-756-8672	6811 De Soto Avenue	Canoga Park

73	818-756-8673	7419 Reseda Boulevard	Reseda
74	818-756-8674	7777 Foothill Boulevard	Tujunga / Sunland
75	818-756-8675	15345 San Fernando Mission	Mission Hills
76	213-485-6276	3111 North Cahuenga Boulevard	Cahuenga Pass
77	818-756-8677	9224 Sunland Boulevard	Sun Valley
78	818-756-8678	4041 Whitsett Avenue	Studio City / Valley Village
79	310-548-7579	18030 South Vermont Avenue	Harbor Gateway
80	213-485-6280	7250 World Way	LAX / Crash Rescue
81	818-756-8681	14355 Arminta Street	Panorama City
82	213-485-6282	5769 Hollywood Boulevard	Hollywood (Hills & Northeast)
83	818-756-8683	4960 Balboa Boulevard	Encino
84	818-756-8684	21050 Burbank Boulevard	Woodland Hills
85	310-548-7585	1331 West 253rd Street	Harbor City
86	818-756-8686	4305 Vineland Avenue	Toluca Lake
87	818-756-8687	10124 Balboa Boulevard	Granada Hills
88	818-756-8688	5101 North Sepulveda Boulevard	Sherman Oaks
89	818-756-8689	7063 Laurel Canyon Boulevard	North Hollywood
90	818-756-8690	7921 Woodley Avenue	Van Nuys Airport Area
91	818-756-8691	14430 Polk Street	Sylmar
92	310-840-2192	10556 West Pico Boulevard	Century City
93	818-756-8693	19059 Ventura Boulevard	Tarzana
94	213-485-6294	4470 Coliseum Street	Crenshaw District / Baldwin Hills
95	213-485-6295	10010 International Road	LAX Area / Hotel District
96	818-756-8696	21800 Marilla Street	Chatsworth
97	818-756-8697	8021 Mulholland Drive	Laurel Canyon / Mulholland
98	818-756-8698	13035 Van Nuys Boulevard	Pacoima
99	818-756-8699	14145 Mulholland Drive	Beverly Glen
100	818-756-8600	6751 Louise Avenue	West Van Nuys / Lake Balboa
101	310-548-7501	1414 25th Street	San Pedro South Shores
102	818-756-8602	13200 Burbank Boulevard	South Van Nuys / Valley Glen
103	818-756-8603	18143 Parthenia Street	Northridge / CSUN
104	818-756-8604	8349 Winnetka Avenue	Winnetka
105	818-756-8605	6345 Fallbrook Avenue	Woodland Hills
106	818-756-8606	23004 Roscoe Boulevard	West Hills

107	818-756-8607	20225 Devonshire Street	Chatsworth
108	818-756-8608	12520 Mulholland Drive	Franklin Canyon
109	818-756-8609	16500 Mulholland Drive	Encino Hills
110	310-548-7545	2945 Miner Street, Berth 44-A	Fort MacArthur Area
111	310-548-7541	954 South Seaside Avenue, Berth 260	Fish Harbor
112	310-548-7542	444 South Harbor Boulevard, Berth 86	Ports O' Call / Cruise Terminal
114	818-548-7542	16617 Arminta Street	Air Operations / Crash Rescue

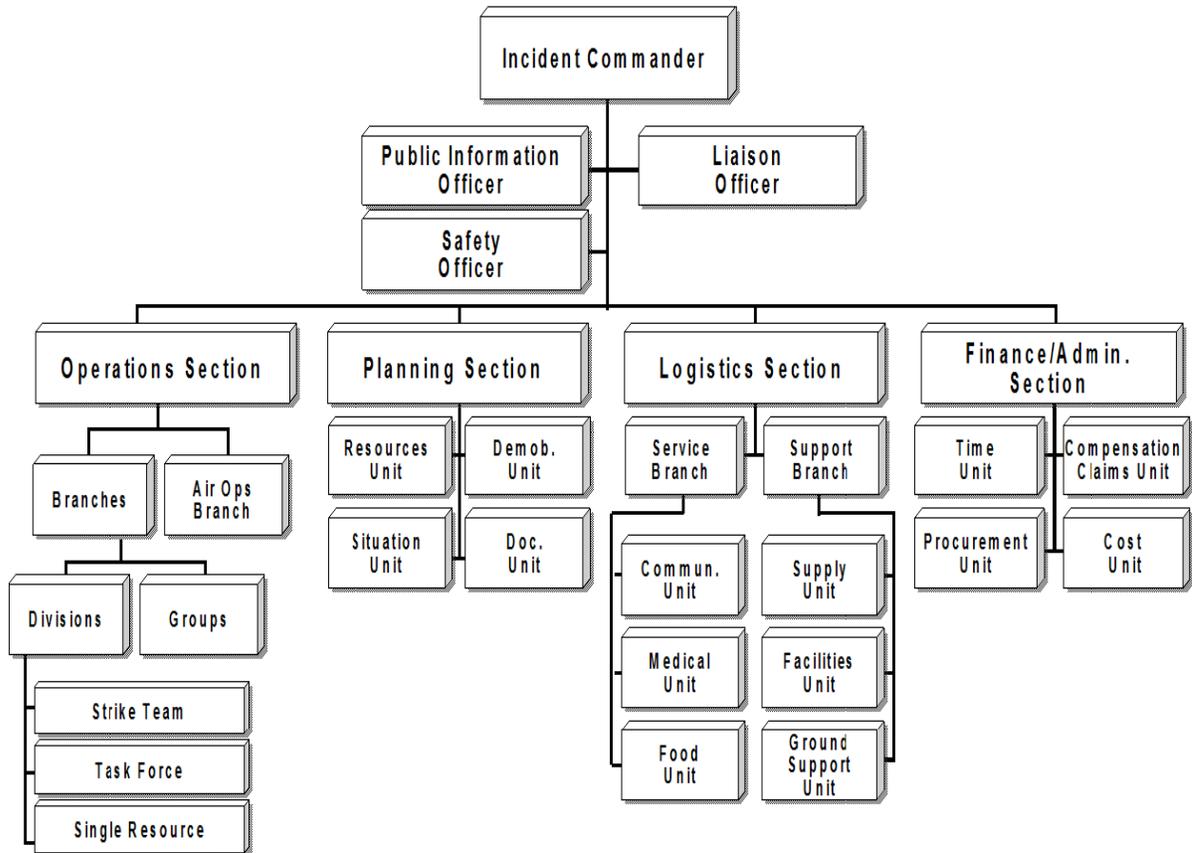
LAFD VOICE RADIO FREQUENCIES

USE	CHANNEL	FREQUENCY	CTCSS
Operations - LAFD Central Bureau **	1	860.9375	85.4
Operations - LAFD South Bureau **	2	859.9375	88.5
Operations - LAFD Valley Bureau **	3	858.9375	91.5
Control - EMS (LAFD South of Mulholland)	4	857.9375	94.8
Control - Admin + 'Brush Fire' and 'River Rescue' **	5	856.9375	97.4
Emergency Trigger	6	858.2375	131.8
Control - Fire (LAFD South of Mulholland)	7	859.4375	192.8
Control - Fire & EMS (LAFD North of Mulholland)	8	858.4375	103.5
Control - Alternate + 'Structure Only' Fire	9	857.2375	107.2
Operations - EMS	10	856.2375	123
Command	11	860.7625	127.3
Tactical	12	860.4375	186.2
Tactical	13	857.4375	141.3
Tactical	14	856.4375	146.2
Tactical	15	859.7625	151.4
Tactical	16	858.7625	162.2
Tactical	17	857.7625	167.9
Tactical	18	856.7625	173.8

ICS FORM USE

Standard Form Title	Description
Incident Action Plan Cover Page ICS 200	Indicates the incident name, plan operational period, date prepared, approvals, and attachments (resources, organization, Communications Plan, Medical Plan, and other appropriate information).
Incident Briefing ICS 201	Provides the Incident Command/Unified Command and General Staff with basic information regarding the incident situation and the resources allocated to the incident. This form also serves as a permanent record of the initial response to the incident.
Incident Objectives ICS 202	Describes the basic strategy and objectives for use during each operational period.
Organization Assignment List ICS 203	Provides information on the response organization and personnel staffing.
Field Assignment ICS 204	Used to inform personnel of assignments. After Incident Command/Unified Command approve the objectives, staff members receive the assignment information on this form.
Incident Communications Plan ICS 205	Provides, in one location, information on the assignments for all communications equipment for each operational period. The plan is a summary of information. Information from the Incident Communications Plan on frequency assignments can be placed on the appropriate Assignment form (ICS Form 204).
Medical Plan ICS 206	Provides information on incident medical aid stations, transportation services, hospitals, and medical emergency procedures.
Incident Status Summary ICS 209	Summarizes incident information for staff members and external parties and provides information to the Public Information Officer for preparation of media releases.
Check-In/Out List ICS 211	Used to check in personnel and equipment arriving at or departing from the incident. Check-in/out consists of reporting specific information that is recorded on the form.
General Message ICS 213	<p>Used by:</p> <ul style="list-style-type: none"> ▪ Incident dispatchers to record incoming messages that cannot be orally transmitted to the intended recipients. ▪ EOC and other incident personnel to transmit messages via radio or telephone to the addressee. ▪ Incident personnel to send any message or notification that requires hard-copy delivery to other incident personnel.

Standard Form Title	Description
ACS Unit Log ICS 214	Provides a record of unit activities. Unit Logs can provide a basic reference from which to extract information for inclusion in any after-action report.
Operational Planning Worksheet ICS 215	Documents decisions made concerning resource needs for the next operational period. The Planning Section uses this worksheet to complete assignment lists, and the Logistics Section uses it for ordering resources for the incident. This form may be used as a source document for updating resource information on other ICS forms such as the ICS 209.
Incident Action Plan Safety Analysis ICS 215A	Communicates to the Operations and Planning Section Chiefs safety and health issues identified by the Safety Officer.
Air Operations Summary ICS 220	Provides information on air operations including the number, type, location, and specific assignments of helicopters and fixed-wing aircraft.
General Plan ICS 226	Addresses long-term objectives approved by Incident Command/ Unified Command. These objectives are often expressed as milestones (i.e., timeframes for the completion of all and/or portions of incident response operations). A General Plan should identify the major tasks to be carried out through to the end of emergency response operations, the duration of the tasks, and the major equipment and personnel resources needed to accomplish the tasks within the specified duration.



ICS ORGANIZATION

COMMAND STAFF—The Command Staff consists of the Public Information Officer, Safety Officer, and Liaison Officer. They report directly to the Incident Commander.

SECTION—The General Staff organization level having functional responsibility for primary segments of incident management (Operations, Planning, Logistics, Finance/Administration). The section level is organizationally between Branch and Incident Commander.

BRANCH—That organizational level having functional, geographical, or jurisdictional responsibility for major parts of the incident operations. The branch level is organizationally between section and division/group in the Operations Section, and between section and units in the Logistics Section. Branches are identified by the use of roman numerals, by function, or by jurisdictional name.

DIVISION—That organizational level having responsibility for operations within a defined geographic area. The Division level is organizationally between the strike team and the branch.

GROUP—Groups are established to divide the incident into functional areas of operation. Groups are located between branches (when activated) and resources in the Operations Section.

UNIT—That organization element having functional responsibility for a specific incident planning, logistics, or finance/administration activity.

TASK FORCE—A group of resources with common communications and a leader that may be preestablished and sent to an incident, or formed at an incident.

STRIKE TEAM—Specified combinations of the same kind and type of resources, with common communications and a leader.

SINGLE RESOURCE—An individual piece of equipment and its personnel complement, or an established crew or team of individuals with an identified work supervisor that can be used on an incident.

ICS POSITION TITLES

At each level within the ICS organization, individuals with primary responsibility positions have distinct titles. Titles provide a common standard for all users. For example, if one agency uses the title Branch Chief, another Branch Manager, etc., this lack of consistency can cause confusion at the incident.

The use of distinct titles for ICS positions allows for filling ICS positions with the most qualified individuals rather than by seniority. Standardized position titles are useful when requesting qualified personnel. For example, in deploying personnel, it is important to know if the positions needed are Unit Leaders, clerks, etc.

Listed below are the standard ICS Titles

Organizational Level	Title	Support Position
Incident Commander	Incident Commander	Deputy
Command Staff	Officer	Assistant
General Staff (Section)	Chief	Deputy
Branch	Director	Deputy
Division / Group	Supervisor	N / A
Unit	Leader	Manager
Strike Team/Task Force	Leader	Single Resource Boss

INCIDENT COMPLEXITY

Incident Complexity

Incident and/or event complexity determines emergency and incident response personnel responsibilities as well as recommended audience for NIMS curriculum coursework delivery. The *NIMS Training Program* training recommendations reflect the following five levels of complexity:

Type 1	<ul style="list-style-type: none"> This type of incident is the most complex, requiring national resources for safe and effective management and operation. All command and general staff positions are filled. Operations personnel often exceed 500 per operational period and total personnel will usually exceed 1,000. Branches need to be established. A written incident action plan (IAP) is required for each operational period. The agency administrator will have briefings, and ensure that the complexity analysis and delegation of authority are updated. Use of resource advisors at the incident base is recommended. There is a high impact on the local jurisdiction, requiring additional staff for office administrative and support functions.
Type 2	<ul style="list-style-type: none"> This type of incident extends beyond the capabilities for local control and is expected to go into multiple operational periods. A Type 2 incident may require the response of resources out of area, including regional and/or national resources, to effectively manage the operations, command, and general staffing. Most or all of the command and general staff positions are filled. A written IAP is required for each operational period. Many of the functional units are needed and staffed. Operations personnel normally do not exceed 200 per operational period and total incident personnel do not exceed 500 (guidelines only). The agency administrator is responsible for the incident complexity analysis, agency administration briefings, and the written delegation of authority.
Type 3	<ul style="list-style-type: none"> When incident needs exceed capabilities, the appropriate ICS positions should be added to match the complexity of the incident. Some or all of the command and general staff positions may be activated, as well as division/group supervisor and/or unit leader level positions. A Type 3 IMT or incident command organization manages initial action incidents with a significant number of resources, an extended attack incident until containment/control is achieved, or an expanding incident until transition to a Type 1 or 2 IMT. The incident may extend into multiple operational periods. A written IAP may be required for each operational period.
Type 4	<ul style="list-style-type: none"> Command staff and general staff functions are activated only if needed. Several resources are required to mitigate the incident, including a task force or strike team. The incident is usually limited to one operational period in the control phase. The agency administrator may have briefings, and ensure the complexity analysis and delegation of authority is updated. No written IAP is required but a documented operational briefing will be completed for all incoming resources. The role of the agency administrator includes operational plans including objectives and priorities.
Type 5	<ul style="list-style-type: none"> The incident can be handled with one or two single resources with up to six personnel. Command and general staff positions (other than the incident commander) are not activated. No written IAP is required. The incident is contained within the first operational period and often within an hour to a few hours after resources arrive on scene. Examples include a vehicle fire, an injured person, or a police traffic stop.

ACS FORMS

The forms on the following pages are to be used for ACS activations, drills, and events. These forms can be found on the LAFDACS website:

<http://www.lafdacs.org/>

Additional ICS forms can be found at:

<https://training.fema.gov/icsresource/icsforms.aspx>

LAFD ACS
Los Angeles Fire Department
Auxiliary Communication Service

HAM RADIO
COMMUNICATIONS
MESSAGE LOG

Message Number	Precedence	Sending Operator	Place of Origin	Date Created	Time Created
To _____			Position _____		
From _____			Position _____		
Subject _____					
Message _____					
If message continues on back of page, check box.					
<input type="checkbox"/> YES					
Approver _____			Position _____		
Received By _____					
Date Received _____		Time Received _____			
Message Delivered To _____			Date _____		Time _____
=====					
Reply Date _____		Reply Time _____			
Reply _____					
If reply continues on back of page, check box.					
<input type="checkbox"/> YES					
Reply Approver _____			Position _____		
Reply Sent By _____					
Reply Received By _____					
Date Reply Recieved _____		Time Reply Received _____			
Reply Message Delivered To _____			Date _____		Time _____

PRECEDENCE: Flash, Emergency, Operations, Priority, Health/Welfare, Routine or "Fill-in-the-blank"

ACS ICS 211

ACS INCIDENT SIGN-IN SHEET		INCIDENT NAME	CHECK-IN LOCATION	DATE
Check-In Information				
TIME	NAME	CALL SIGN	VEHICLE	EQUIPMENT
In:		FCC:	Make:	
Out:		Member #:	Plate:	
In:		FCC:	Make:	
Out:		Member #:	Plate:	
In:		FCC:	Make:	
Out:		Member #:	Plate:	
In:		FCC:	Make:	
Out:		Member #:	Plate:	
In:		FCC:	Make:	
Out:		Member #:	Plate:	
In:		FCC:	Make:	
Out:		Member #:	Plate:	
In:		FCC:	Make:	
Out:		Member #:	Plate:	
In:		FCC:	Make:	
Out:		Member #:	Plate:	
In:		FCC:	Make:	
Out:		Member #:	Plate:	
In:		FCC:	Make:	
Out:		Member #:	Plate:	
In:		FCC:	Make:	
Out:		Member #:	Plate:	
In:		FCC:	Make:	
Out:		Member #:	Plate:	
In:		FCC:	Make:	
Out:		Member #:	Plate:	
In:		FCC:	Make:	
Out:		Member #:	Plate:	
In:		FCC:	Make:	
Out:		Member #:	Plate:	
In:		FCC:	Make:	
Out:		Member #:	Plate:	
In:		FCC:	Make:	
Out:		Member #:	Plate:	

Page ____ of ____

Prepared by (Name and position). Use back for remarks.

RADIO OPERATOR INFORMATION CARD

ACS RADIO OPERATOR INFORMATION CARD	OPERATOR NAME	FCC CALL SIGN	MEMBER #	DATE

Cell Phone:

CHECKLIST

VEHICLE:	YES	NO
RADIO:	YES	NO
EQUIPMENT:	YES	NO

Vehicle Make:

License Plate:

Equipment:

Assignment(s):

	LOCATION	TACTICAL CALL	TIME IN	TIME OUT	PARTNER
1					
2					
3					
4					
5					

LAFD ACS Field Report on Infrastructure Status (For drills, say "This is a drill" at start) v2018 03

	Reporting Location	Report Date	Report Time	Nearest LAFD Station
1	Electricity	<input type="checkbox"/> No report <input type="checkbox"/> Normal	<input type="checkbox"/> Outage	<input type="checkbox"/> Line down (give exact location)
2	Water	<input type="checkbox"/> No report <input type="checkbox"/> Normal	<input type="checkbox"/> Outage	<input type="checkbox"/> Burst (give exact location)
3	Natural Gas	<input type="checkbox"/> No report <input type="checkbox"/> Normal	<input type="checkbox"/> Outage	<input type="checkbox"/> Leakage (give exact location)
4	Sewer	<input type="checkbox"/> No report <input type="checkbox"/> Normal	<input type="checkbox"/> Blocked	<input type="checkbox"/> Seepage (give exact location)
5	Phone (wired)	<input type="checkbox"/> No report <input type="checkbox"/> Normal	<input type="checkbox"/> Outage	<input type="checkbox"/> No 9-1-1 (give area, if known)
6	Phone (cellular)	<input type="checkbox"/> No report <input type="checkbox"/> Normal	<input type="checkbox"/> Outage	<input type="checkbox"/> No 9-1-1 (give area, if known)
7	Roads	<input type="checkbox"/> No report <input type="checkbox"/> Normal	<input type="checkbox"/> Slow	<input type="checkbox"/> Impassable (give exact location)
8	Traffic signals	<input type="checkbox"/> No report <input type="checkbox"/> Normal	<input type="checkbox"/> Blinking red	<input type="checkbox"/> Not lit (give intersection detail)

Reported by (Name)	Sent By (Name/Call)	Sent to / Rcvd by	Delivered / Fwd to	Time Received	Time Sent/Delivered

GEOGRAPHIC DIVISIONS

GEOGRAPHIC DIVISIONS “ONE STORY STRUCTURE”



GEOGRAPHIC DIVISIONS “MULTI-STORY STRUCTURE”



OVERVIEW—Complex emergency situations often exceed the capability of one officer to effectively manage the entire operation. Therefore, the Incident Commander will group companies to work in divisions/groups.

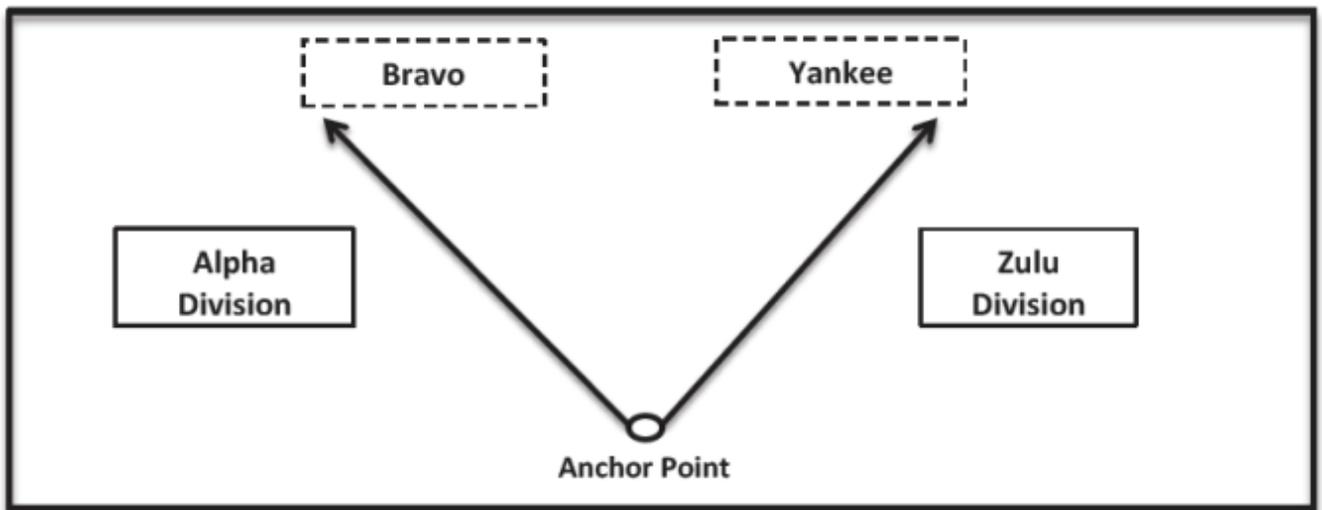
1. When do they get set up? Whenever two or more resources are assigned to the same geographic area or function at an incident, one of the officers is placed in command of that geographic area or function. We call her/him a Division/Group Supervisor. Generally, division/group responsibilities are assigned early in the incident.
2. What does this really accomplish? Divisions/groups reduce the span of control to more manageable, smaller sized components, and it allows the Incident Commander to communicate principally with those Division/Group Supervisors (on a separate Tactical Channel 11) rather than multiple, individual company officers, thus providing an effective Incident Command structure and organization. Plus, as divisions/groups are implemented, Incident Command continues to operate at the strategic level, determining the overall strategy to deal with the incident.
3. What is the preferred span of control? Three to seven with five being optimal. In fast moving complex operations, a span of control of no more than five division/groups is preferred. In incidents with minimal activity (slow moving and less complex operations), the Incident Commander may effectively manage six or more division/groups.
4. What happens when the number of divisions/groups exceeds the span of control that the Incident Commander can effectively manage? Then the incident organization should be divided into branches. Each branch is responsible for several divisions/groups and should be assigned its own communications.
5. Who is assigned as a Division/Group Supervisor? Typically, these initial assignments will go to the first company assigned to a division (geographic area) or group (functional). This early establishment of

divisions/groups provides an effective Incident Command organization on which the operation can be built and expanded.

CONCLUSION—The Los Angeles Fire Department responds to a wide range of emergency incidents. In order to effectively manage personnel and resources and to provide for the safety and welfare of personnel, the department will always operate within the Incident Command System at the incident scene. This allows us to provide the best service possible to those we proudly serve.

WILDLAND FIRE DESIGNATION SYSTEM

Divisions in wildland fires are usually designated as follows. The anchor point is often the state of the fire.



LOS ANGELES COUNTY EMERGENCY MEDICAL FACILITIES

A current list of emergency medical facilities in Los Angeles County appear on the following pages and also can be found at:

http://lafdacs.org/pdf_files/Emer_Medical_Facility_List.doc .

DEPARTMENT OF HEALTH SERVICES
COUNTY OF LOS ANGELES

SUBJECT: 9-1-1 RECEIVING HOSPITAL DIRECTORY REFERENCE NO. 501

HOSPITAL NAME ADDRESS PHONE	HOSPITAL NUMBER	HOSPITAL CODE	BASE HOSPITAL	TRAUMA LEVEL	BURN	HELIPAD
Alhambra Hospital 100 South Raymond Avenue Alhambra, CA 91801 (626) 570-1606	132	ACH				
Antelope Valley Hospital 1600 West Avenue J Lancaster, CA 93534 (661) 949-5000		AVH	X	Level II		X
Beverly Hospital 309 West Beverly Boulevard Montebello, CA 90640 (323) 726-1222	135	BEV				
California Hospital Medical Center 1401 South Grand Avenue Los Angeles, CA 90015 (213) 748-2411	133	CAL	X	Level II		X
Catalina Island Medical Center 100 Falls Canyon Road Avalon, CA 90704 (310) 510-0700		AHM				
Cedars Sinai Medical Center 8700 Beverly Boulevard Los Angeles, CA 90048 (310) 855-5000	139	CSM	X	Level I Pediatric Level II		X
Centinela Hospital Medical Center 555 East Hardy Street Inglewood, CA 90301 (310) 673-4660	141	CNT				
Children's Hospital Los Angeles 4650 Sunset Boulevard Los Angeles, CA 90027 (323) 660-2450	145	CHH		Pediatric Level I ONLY		X
Citrus Valley Medical Center Inter-Community Campus 210 West San Bernardino Road Covina, CA 91723 (626) 331-7331		ICH				

DEPARTMENT OF HEALTH SERVICES
COUNTY OF LOS ANGELES

SUBJECT: 9-1-1 RECEIVING HOSPITAL DIRECTORY REFERENCE NO. 501

HOSPITAL NAME ADDRESS PHONE	HOSPITAL NUMBER	HOSPITAL CODE	BASE HOSPITAL	TRAUMA LEVEL	BURN	HELIPAD
Citrus Valley Medical Center Queen of the Valley Campus 1115 South Sunset Avenue West Covina, CA 91790 (626) 962-4011		QVH	X			
Coast Plaza Doctors Hospital 13100 Studebaker Road Norwalk, CA 90650 (562) 868-3751	150	CPM				
College Medical Center 2776 Pacific Avenue Long Beach, CA 90806 (562) 595-1911		PLB				
Community Hospital of Huntington Park 2623 E. Slauson Ave. Huntington Park, CA 90023 (323) 583-1931	330	CHP				
Community Hospital of Long Beach 1720 Terrino Avenue Long Beach, CA 90804 (562) 498-1000		LBC				
East Los Angeles Doctors Hospital 4060 East Whittier Boulevard Los Angeles, CA 90023 (323) 268-5514	157	ELA				
Encino Hospital Medical Center 16237 Ventura Boulevard Encino, CA 91436 (818) 995-5000	191	ENH				
Foothill Presbyterian Hospital 250 South Grand Avenue Glendora, CA 91749 (626) 963-8411		FPH				X
Garfield Medical Center 525 North Garfield Avenue Monterey Park, CA 91754 (626) 573-2222	216	GAR				
Gardens Regional Hospital & Medical Center 21530 South Pioneer Boulevard Hawaiian Gardens, CA 90716 (562) 860-0401		TRI				

SUBJECT: 9-1-1 RECEIVING HOSPITAL DIRECTORY DEPARTMENT OF HEALTH SERVICES
 COUNTY OF LOS ANGELES

REFERENCE NO. 501

HOSPITAL NAME ADDRESS PHONE	HOSPITAL NUMBER	HOSPITAL CODE	BASE HOSPITAL	TRAUMA LEVEL	BURN	HELIPAD
Glendale Adventist Medical Center 1509 East Wilson Terrace Glendale, CA 91206 (818) 409-8000	210	GWT	X			X
Glendale Memorial Hospital and Health Center 1420 South Central Avenue Glendale, CA 91204 (818) 502-1900	514	GMH				
Glendora Community Hospital 150 W. Route 66 Glendora, CA 91740 (626) 335-0231		HEV				
Good Samaritan Hospital 1225 Wilshire Blvd. Los Angeles, CA 90017 (213) 977-2121	220	GSH				X
Greater El Monte Community Hospital 1701 Santa Anita Avenue South El Monte, CA 91733 (626) 579-7777		GEM				
Henry Mayo Newhall Hospital 23845 West McBean Parkway Valencia, CA 91355 (661) 253-8000	270	HMN	X	Level II		X
Hollywood Presbyterian Medical Center 1300 North Vermont Avenue Los Angeles, CA 90027 (323) 413-3000	286	QOA				X
Huntington Hospital 100 West California Boulevard Pasadena, CA 91105 (626) 397-5000	324	HMH	X	Level II		X
Kaiser Foundation - Baldwin Park 1011 Baldwin Boulevard Baldwin Park, CA 91706 (626) 851-1011	311	KFA				
Kaiser Downey Medical Center 9333 Imperial Highway Downey, CA 90242 (562) 920-3023	341	KFB				

DEPARTMENT OF HEALTH SERVICES
COUNTY OF LOS ANGELES

REFERENCE NO. 501

SUBJECT: 9-1-1 RECEIVING HOSPITAL DIRECTORY

HOSPITAL NAME ADDRESS PHONE	HOSPITAL NUMBER	HOSPITAL CODE	BASE HOSPITAL	TRAUMA LEVEL	BURN	HELIPAD
Kaiser Foundation - Los Angeles 4867 Sunset Boulevard Los Angeles, CA 90027 (323) 783-4011	343	KFL				
Kaiser Foundation - Panorama City 13652 Cantara Street Panorama City, CA 91402 (818) 375-2000	381	KFP				
Kaiser Foundation - South Bay 25825 South Vermont Avenue Harbor City, CA 90710 (310) 325-5111	400	KFH				
Kaiser Foundation - West Los Angeles 6041 Cadillac Avenue Los Angeles, CA 90034 (323) 857-2000	362	KFW				
Kaiser Foundation - Woodland Hills 5601 De Soto Avenue Woodland Hills, CA 91367 (818) 719-2000	370	KFO				
LAC Harbor-UCLA Medical Center 1000 West Carson Street Torrance, CA 90502 (310) 222-2345	248	HGH	X			X
LAC Olive View Medical Center 14445 Olive View Drive Sylmar, CA 91342 (818) 364-1555	575	OVM				X
LAC + USC Medical Center 1200 North State Street Los Angeles, CA 90033 (323) 226-2622	438	USC	X		X	X
Lakewood Regional Medical Center 3700 S. Street Lakewood, CA 90712 (562) 531-2550	410	DHL				
Los Angeles Community Hospital at Norwalk 13222 Bloomfield Avenue Norwalk, CA 90650 (562) 863-4763		NOR				

DEPARTMENT OF HEALTH SERVICES
COUNTY OF LOS ANGELES

REFERENCE NO. 501

SUBJECT: 9-1-1 RECEIVING HOSPITAL DIRECTORY

HOSPITAL NAME ADDRESS PHONE	HOSPITAL NUMBER	HOSPITAL CODE	BASE HOSPITAL	TRAUMA LEVEL	BURN	HELIPAD
Long Beach Memorial Medical Center 2801 Atlantic Avenue Long Beach, CA 90806 (562) 933-2000	533	LBM	X	Level I Pediatric Level II		X
Marina Del Rey Hospital 4650 Lincoln Boulevard Marina Del Rey, CA 90291 (310) 823-8911	457	DFM				
Martin Luther King, Jr. Community Hospital 1680 East 120th Street Los Angeles, CA 90059 (424) 388-8181	476	MLK				
Memorial Hospital of Gardena 1145 West Redondo Beach Boulevard Gardena, CA 90247 (310) 532-4200		MHG				
Methodist Hospital of Southern California 300 West Huntington Drive Arcadia, CA 91007 (626) 445-4441		AMH	X			
Mission Community Hospital 14850 Roscoe Boulevard Panorama City, CA 91402 (818) 787-2222	540	MCP				
Monterey Park Hospital 900 South Atlantic Boulevard Monterey Park, CA 91754 (626) 570-9000	552	MPH				
Northridge Hospital Medical Center 18300 Roscoe Boulevard Northridge, CA 91328 (818) 885-8500	571	NRH	X	Level II Pediatric Level II		X
Olympia Medical Center 5900 West Olympic Boulevard Los Angeles, CA 90036 (310) 657-5900	537	MID				
Pacifica Hospital of the Valley 9449 San Fernando Road Sun Valley, CA 91352 (818) 767-3310	761	PAC				

DEPARTMENT OF HEALTH SERVICES
COUNTY OF LOS ANGELES

REFERENCE NO. 501

HOSPITAL NAME ADDRESS PHONE	HOSPITAL NUMBER	HOSPITAL CODE	BASE HOSPITAL	TRAUMA LEVEL	BURN	HELIPAD
Palmdale Regional Medical Center 38600 Medical Center Drive Palmdale, CA 93551 (661) 940-1498		LCH				
Pomona Valley Hosp. Medical Center 1798 North Garey Avenue Pomona, CA 91767 (909) 623-8715		PVC	X			
PIH Health Hospital-Downey 11500 Brookshire Avenue Downey, CA 90241 (562) 904-5000	155	DCH				
PIH Health Hospital - Whittier 12401 East Washington Boulevard Whittier, CA 90602 (562) 698-0811		PIH	X			X
Providence Holy Cross Medical Center 15031 Rinaldi Street Mission Hills, CA 91345 (818) 365-8051	305	HCH	X	Level II		X
Providence Little Company of Mary Medical Center San Pedro 1300 West Seventh Street San Pedro, CA 90732 (310) 832-3311	723	SPP				
Providence Little Company of Mary - Torrance 4101 Torrance Boulevard Torrance, CA 90503 (310) 540-7676	440	LCM	X			
Providence Saint John's Health Center 2121 Santa Monica Blvd. Santa Monica, CA 90404 (310) 829-5511	680	SIH				
Providence Saint Joseph Medical Center 501 South Buena Vista Street Burbank, CA 91505 (818) 843-5111	685	SJS	X			X
Providence Tarzana Medical Center 18321 Clark Street Tarzana, CA 91356 (818) 881-0800	799	TRM				

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DEPARTMENT OF HEALTH SERVICES
COUNTY OF LOS ANGELES

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HOSPITAL NAME ADDRESS PHONE	HOSPITAL NUMBER	HOSPITAL CODE	BASE HOSPITAL	TRAUMA LEVEL	BURN	HELIPAD
Ronald Reagan UCLA Medical Center 757 Westwood Plaza Los Angeles, CA 90095 (310) 825-9111		UCL	X	Level I Pediatric Level I		X
Saint Francis Medical Center 3630 East Imperial Highway Lynwood, CA 90262 (310) 900-7301		SFM	X	Level II		X
Saint Mary Medical Center 1050 Linden Avenue Long Beach, CA 90813 (562) 491-9000		SMM	X	Level III		X
Saint Vincent Medical Center 2131 West 3rd Street Los Angeles, CA 90057 (213) 484-7010		SVH				
San Dimas Community Hospital 1350 West Covina Boulevard San Dimas, CA 91773 (909) 599-6811		SDC				
San Gabriel Valley Medical Center 438 West La Tunas Drive San Gabriel, CA 91776 (626) 289-5454		SGC				
Santa Monica-UCLA Medical Center 1250 16th Street Santa Monica, CA 90404 (310) 319-4000		SMH				
Sherman Oaks Hospital 4929 Van Nuys Boulevard Sherman Oaks, CA 91403 (818) 981-7111		SOC				X
Southern Calif. Hospital at Culver City 3828 Delmar Terrace Culver City, CA 90231 (310) 836-7000		BMC				
Torrance Memorial Medical Center 3330 West Lomita Boulevard Torrance, CA 90505 (310) 325-9110		TOR	X		X	

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DEPARTMENT OF HEALTH SERVICES
 COUNTY OF LOS ANGELES
 SUBJECT: 9-1-1 RECEIVING HOSPITAL DIRECTORY REFERENCE NO. 501

HOSPITAL NAME ADDRESS PHONE	HOSPITAL NUMBER	HOSPITAL CODE	BASE HOSPITAL	TRAUMA LEVEL	BURN	HELIPAD
USC Verdugo Hills Hospital 1812 Verdugo Boulevard Glendale, CA 91208 (818) 790-7100	875	VHH				X
Valley Presbyterian Hospital 15107 Van Owen Street Van Nuys, CA 91405 (818) 782-6600	856	VPH				
West Hills Hospital and Medical Center 7300 Medical Center Drive West Hills, CA 91307 (818) 676-4000	913	HWH			X	
White Memorial Medical Center 1720 Caesar Chavez Avenue Los Angeles, CA 90033 (323) 268-5000	970	WMH				
Whittier Hospital Medical Center 9080 Colima Road Whittier, CA 90605 (562) 945-3561		WHH				

* OUT OF COUNTY RECEIVING HOSPITALS *

Chino Valley Medical Center (San Bernardino County) 5451 Walnut Avenue Chino, CA 91710 (909) 464-8600						
La Palma Intercommunity Hospital (Orange County) 7901 Walker Street La Palma, CA 90623 (714) 670-7400						
Los Robles Hospital & Medical Center (Ventura County) 215 West Janss Road Thousand Oaks, CA 91360 (805) 497-2727						

SUBJECT: 9-1-1 RECEIVING HOSPITAL DIRECTORY **DEPARTMENT OF HEALTH SERVICES**
COUNTY OF LOS ANGELES

REFERENCE NO. 501

HOSPITAL NAME ADDRESS PHONE	HOSPITAL NUMBER	HOSPITAL CODE	BASE HOSPITAL	TRAUMA LEVEL	BURN	HELIPAD
Los Alamitos Medical Center (Orange County) 3751 Katella Avenue Los Alamitos, CA 90720 (562) 598-1311		LAG				
Ridgecrest Community Hospital (Kern County) 1081 North China Lake Boulevard Ridgecrest, CA 93555 (760) 446-3551		RCC				X
San Antonio Community Hospital (San Bernardino County) 999 San Bernardino Road Upland, CA 91786 (909) 985-2811		SAC				
Saint John Regional Medical Center (Ventura County) 1600 North Rose Avenue Oxnard, CA 93030 (805) 988-2500		SJO				X
Saint Jude Medical Center (Orange County) 101 East Valencia Mesa Drive Fullerton, CA 92635 (714) 871-3280		SJD				
UC Irvine Medical Center (Orange County) 101 The City Drive, R007E62 Orange, CA 92868 (714) 456-6011		UCI				X

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LAFD RADIO USE

ACS Radio Operators may be issued LAFD hand-held 800-MHz radios for use during activations. These radios are used to monitor LAFD activities on tactical channels and to communicate directly with the Incident Commander or to contact Metro Fire Control in an emergency or when otherwise directed.

Do **NOT** use the LAFD radio to transmit routing information. Do not use the LAFD radio to transmit any information that can be handled by ACS Net Control. Do not use LAFD radios if another form of communication, such as calling 911 or calling the LAFD Metro Fire Control Floor Captain directly, may be more appropriate.

Metro Fire Control is often called Metro or MFC.

In true emergencies, the LAFD department radio can be used as follows:

1. Using the tactical channel to contact the Incident Commander directly.
2. Using one of the Command Channels appropriate for the incident to talk to Metro Fire Control.
3. Pushing the orange button on the radio to activate the emergency trigger and send an emergency distress call directly to Metro Fire Control.

If the emergency trigger is activated, the radio will switch to Channel 6, a direct link to Metro Fire Control. The entire system freezes until Metro determines who is in danger and the nature of their emergency. Do **NOT** push the orange button unless you are in immediate physical danger.

If the emergency trigger is activated by mistake, immediately use the activated radio to contact Metro Fire Control, give them the serial number engraved on the front of the radio, and tell them it was an “accidental activation.” For example, “Metro, radio #####, accidental activation.” The Metro Floor Captain will respond on Channel 6 and probably want to know who you are, why you have the radio, and what you are doing with it. Be prepared to tell Metro your name, your ACS member number, the radio’s serial number, and the incident you are working.

If it is a real emergency and you have no other better options, push the orange button and give Metro the details.

LAFD RADIO DISTRIBUTION

You may be issued an LAFD radio directly by the LAFD. LAFD radios are often distributed to those participating in CERT Hydration Units, Community Fire Patrols, and at other incidents where the LAFD wants volunteer responders to have direct radio contact. If issued a radio by the LAFD, note the name of the person who gave you the radio and make sure that person knows when you return the radio. It is a good idea to ask for a spare battery, but see the note below before replacing the battery.

ACS LAFD CACHE RADIOS

The ACS currently maintains a cache of LAFD radios which may be distributed at ACS supported incidents. With the approval of the City Radio Officer, ACS Program Manager, or ACS Operations Officer and the LAFD Incident Commander, the cache radios will be distributed by ACS Bureau or Battalion COMLs. Should the City Radio Officer, ACS Program Manager, or ACS Operations Officer be unavailable, the LAFD Incident Commander may approve the use of LAFD radios by ACS personnel.

CACHE RADIO DISTRIBUTION

The cache radios come in a case with the antennas and batteries removed. Batteries are usually in a separate box. Battery chargers for the LAFD radios are located at North Valley Station and may be brought to the incident with the radios.

To distribute the radios, first count the number of radios, antennas, and batteries, then determine the number of radios needed, attach the antennas, and insert the batteries. Insure that the radio is turned off before inserting the battery.

Note: If the radio power switch is in the on position when the battery is inserted, the emergency trigger may be activated.

The Bureau COMLs or BCOMLs issuing LAFD radios will generate a distribution list containing the serial number engraved on the radio, the name of the Radio Operator receiving the radio, and the Radio Operator's mobile phone number. Use the LAFD Radio Check-Out sheet as shown in the Appendix (p. 7-22). This information must be given to the Metro Floor Captain by email to lafd.floorcaptain@lacity.org, by fax to 213-626-0062, or by telephone at 213-576-8920. Email or fax are preferred. This information is important should a push-to-talk switch be stuck in the on position, or should the emergency trigger be activated.

The Floor Captain may be extremely busy, so if you call, identify yourself, your incident, and your ACS position, and ask if they have the time to take your radio list. If not, call back when they may have the time to do so. It's best to email or fax the radio list.

CACHE RADIO DEMOBILIZATION

Upon completion of the event, gather all LAFD radios, antennas, and batteries from the Radio Operators and make sure nothing is missing. If any equipment is missing, contact the Radio Operator directly or by phone to recover the equipment. If the recovery is not possible, notify ACS Net Control and make sure the missing equipment, including radio serial numbers and the Radio Operator(s) responsible for the equipment, are noted in the Incident ICS-214 Activity Log. Also notify the Radio Operator's Bureau COML, BCOML, and the ACS Operations Officer. When the LAFD radios are returned, the Bureau COML or BCOML responsible for the radios will notify the Metro Floor Captain that the radios are no longer in assigned use

The following is adapted from the: **LAFD Radio Communications Manual, January 2011**

USE OF TACTICAL CHANNELS

The purpose of tactical channels (tac channels) is to reduce the overall radio traffic on any one channel. This feature permits all units on a specific incident to communicate between themselves without interference from other field operations. Metro Fire Control does not normally monitor tac channels. Therefore, tac channels are ideally suited to handle any form of communications not affecting Metro.

Messages should be concise—limited to essential information—in order to maintain a manageable level of radio traffic.

Emergency operations shall be handled to the extent possible on the assigned tac channel. Conversations on these channels can be less formal and structured but are still required to remain businesslike.

SELECTED LAFD CODE WORDS

- **ROGER** means that a radio message is received and understood. Do not roger a message that should be answered with a yes or a no.
- **COVERED** means a stronger signal has interfered with and overpowered another signal, making the weaker signal unreadable.
- **BRAVO TANGO** is used at incidents involving bomb threats. Do not use the phrase “bomb threat” on the air.

HUMAN FACTORS

When we talk on the radio, each of us subconsciously performs a process before we speak. Managing this process will provide more effective communications.

- **ORGANIZATION**—Before speaking, formulate what information is being communicated and put the information in a standardized reporting template. For instance, a standard situational report might contain unit ID, location, conditions, actions, and needs. This method forces users to fill in the blanks, answer all the necessary questions, and filter out unneeded information.
- **DISCIPLINE**—Often, Incident Commanders are overwhelmed by excess information on the radio. Radio discipline on the fire ground will help to determine if information needs to be transmitted on the radio. If face-to-face communications are possible between members of a crew and the information is not needed by the Incident Commander, don't get on the radio.
- **MICROPHONE LOCATION**—Placing a microphone too close to the mouth or exposing the microphone to other fire ground noise may result in unintelligible communications. When transmitting in a high-noise environment, shield the microphone from the noise source and hold the microphone a couple of inches from the mouth.
- **VOICE LEVEL**—When speaking into a microphone use a loud, clear, and controlled voice. When users are excited, the speech often is louder and faster. These transmissions often are unintelligible and require the

Incident Commander to ask for a rebroadcast of the information, resulting in more radio traffic on the channel.

Managing these human factors will have a positive impact on fire ground communications. Reporting should be complete, necessary, and in a controlled, clear voice. These actions will reduce the amount of repeat transmissions on the fire ground, reducing air time.

Members are reminded when making radio transmission, there are four considerations:

1. Think about what you are going to say.
2. Ask yourself if the message is necessary.
3. Keep it brief.
4. When you key the mike, be prepared to speak.

DOS AND DON'TS

DO:

1. Hold the press-to-talk button down momentarily **BEFORE** transmitting. This keeps the first word in the message from being clipped. Likewise, releasing the button prematurely will clip the end of the transmission.
2. Keep the microphone **CLOSE** to your mouth—about one inch.
3. Speak into the microphone.
4. Speak in a normal, firm voice and speak clearly.
5. Give the complete message with the understanding that it will be heard. It is unnecessary and time consuming to call Metro Fire Control first, wait for a go-ahead, and then give the message.
6. Listen before talking.
7. Listen for acknowledgement of radio messages to be certain the message is received and understood. Radio messages not acknowledged are assumed to be not received.
8. Evaluate the importance of your message compared to others who are using the radio at the same time.
9. Relay for other units when they have repeated their message and it is apparent that those intended to receive the message are not hearing it.
10. Answer for other units at the scene if someone is trying to reach them and they do not answer. However, insure that the appropriate unit receives the message.
11. Contact other mobile units directly (when possible) instead of relaying through MFC. Monitor your designated MFC Channel while on the radio.
12. Wait for other units that are talking to acknowledge their messages before you begin your radio message.
13. Transmit only necessary messages. Keep messages clear, concise and to the point.

DON'T:

1. Transmit personal messages or messages of a non-business nature.

2. Allow the press-to-talk button to be left engaged, commonly called an “open mike.” Inappropriate messages have been accidentally transmitted in this manner.
3. Transmit when located too closely to another mobile or hand-held unit. This causes feedback and garbles your message.
4. Use profanity, exchange pleasantries, or offer personal greetings.
5. Transmit an injured person’s name on the radio.

CONTINUING DIALOGUE

Once a continuing dialogue is established with the dispatcher or a field unit, it is not necessary to continue repeating your unit identification and other obvious information each time you key the transmitter.

Note: This only works in situations where a radio operator, such as a MFC radio operator, is continuously monitoring the channel.

MESSAGES DURING HIGH ACTIVITY

All members shall be aware that during periods of high activity, careful thought must be given to all necessary messages for clarity and brevity.

THE LAFD RADIO SYSTEM

The LAFD has two different wireless communications systems: the voice radio system and the data radio system. The voice radio system is the system commonly recognized because it is the system in which we receive dispatches and talk from unit to unit every day. The voice radio system is an analog conventional simulcast system. Conventional simulcast means that the system is not a trunked system and utilizes more than one repeater (send and receive site) to receive and transmit radio messages.

The data system carries our mobile display terminal (MDT) communications. It is not recognized as a separate system because the user interface is by pushing a button on the MDT. Because our interaction is limited, it is commonly not thought of as a radio system. However, the data and voice systems are separate and distinctly different systems. The LAFD voice system operates in the 800-MHz range, and the data system operates in the 500-MHz range.

Each of the department's radio systems are a combination of several distinct components. The most important of those components, the operator, was discussed in previous portions. The other components that act to support the operator will be discussed here.

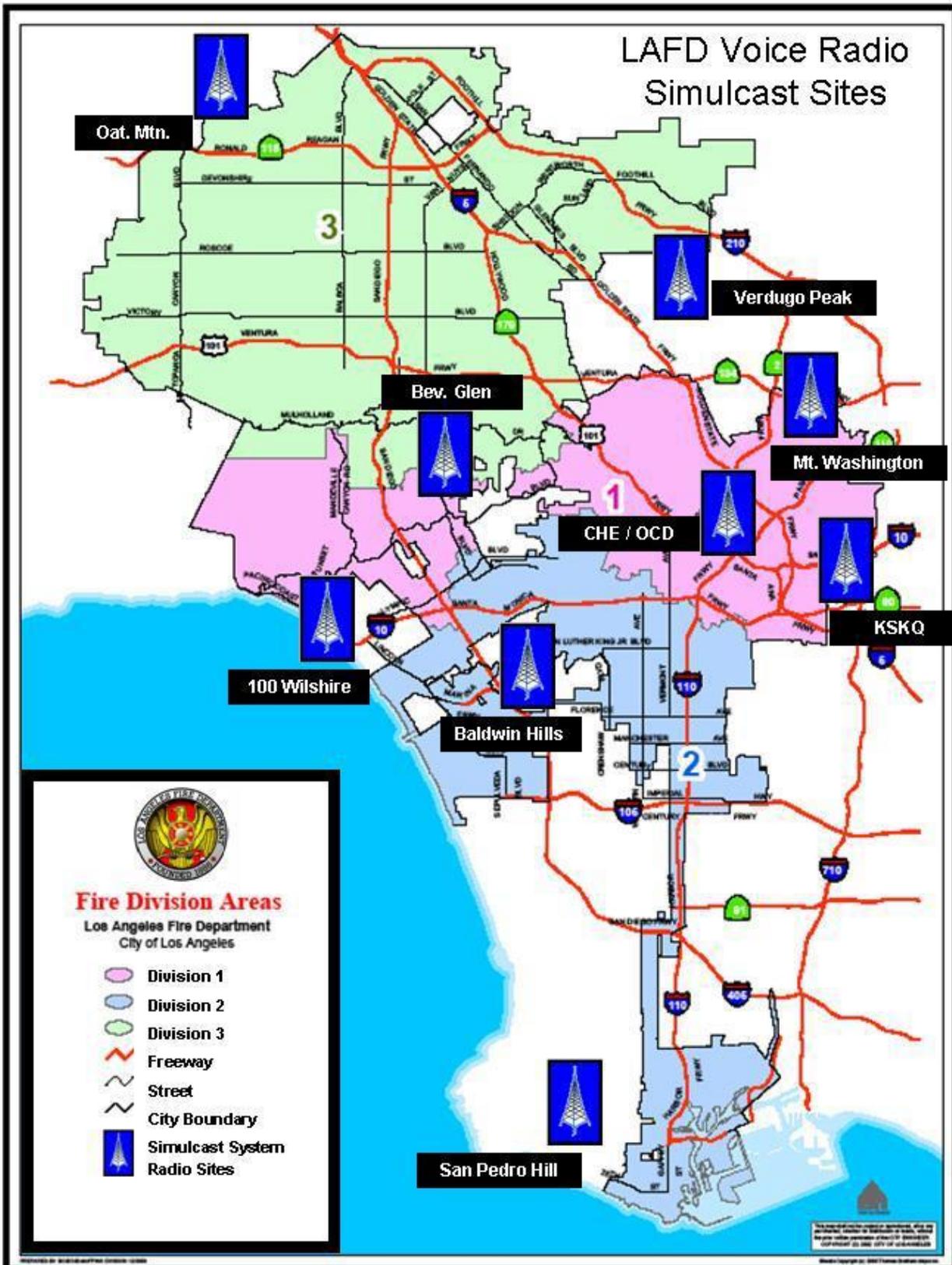
In addition to the systems described above, the department has additional simplex or direct digital channels in the 700-MHz band programmed in the XTS 5000 portable radios carried by all members, and the XTL 5000 mobile radios installed in late model apparatus. These channels are available for use only in simplex or direct mode at this time. There are three 700-MHz digital channels licensed to the LAFD located at the end of Zones 7, 8, and 9, accessed via the front panel key pad identified as channels 7TAC19D, 7TAC20D, and 7TAC21D. 7 identifies it as a 700-MHz channel, TAC19 identifies the channel number, and D identifies the channel as a digital channel. There are additional 700-MHz National Emergency Response Interoperability channels in Zone 7 beginning with 7TAC51D available as required

BASE STATION TRANSMIT/RECEIVE SITES

There are ten strategically located remote transmit/receive sites serving the LAFD voice radio system (p. 7-44). While each of these sites appears different to the eye, their basic functions are still the same. These sites include the following:

1. Oat Mountain
2. Beverly Glen
3. Verdugo Peak
4. Mount Washington
5. KSKQ
6. 100 Wilshire
7. Baldwin Hills
8. San Pedro Hill
9. City Hall East
10. Mount Lukens (Citywide voice back-up system)

LAFD Voice Radio Simulcast Sites

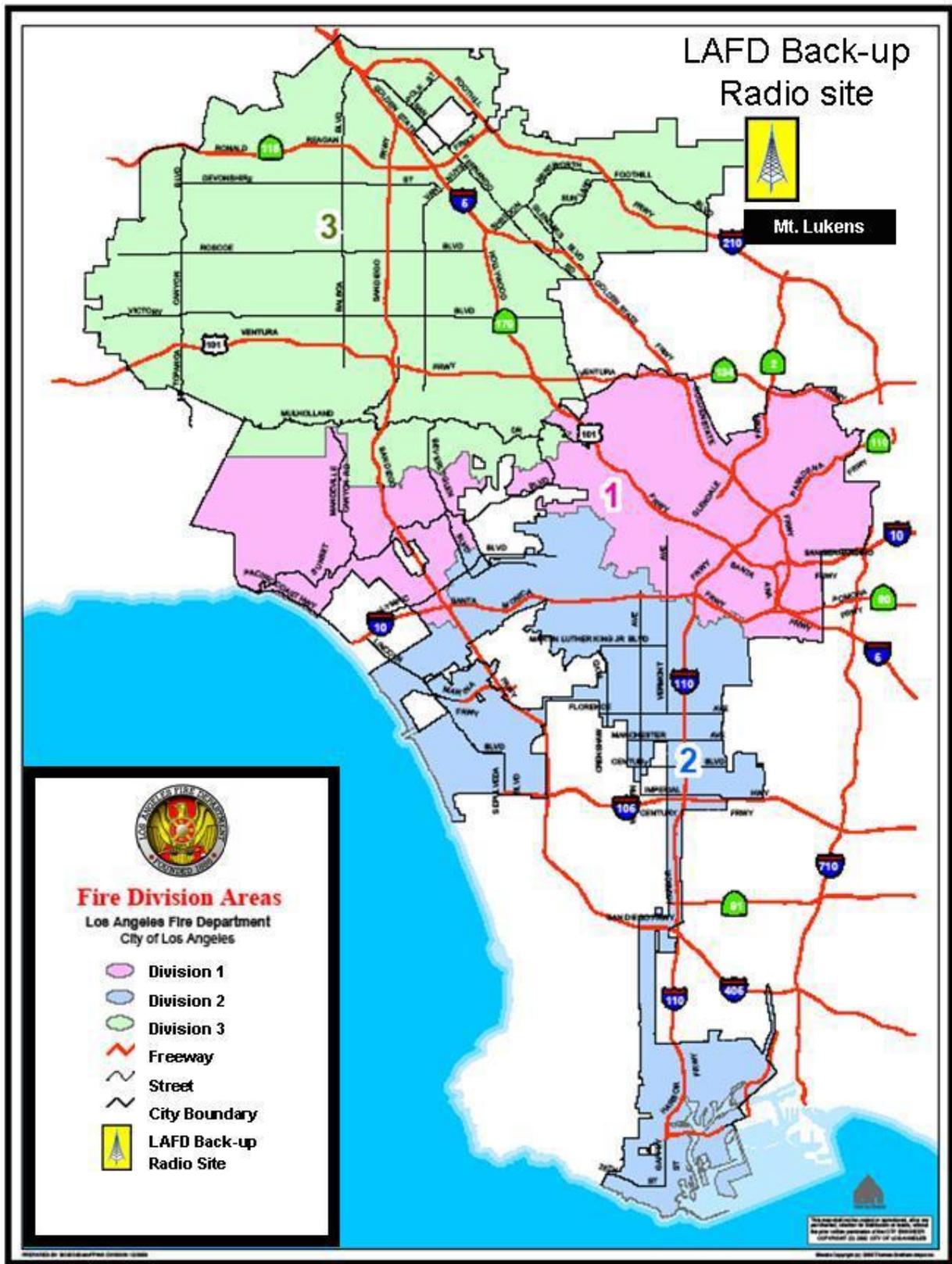


Fire Division Areas

Los Angeles Fire Department
City of Los Angeles

- Division 1
- Division 2
- Division 3
- Freeway
- Street
- City Boundary
- ▲ Simulcast System Radio Sites

This map is a simplified representation of the actual radio coverage areas. It is not intended to be used as a legal document. For more information, please contact the City of Los Angeles Department of Public Works.



MOUNT LUKENS BACK-UP SITE

The fixed site transmit/receive site located at Mount Lukens is the department's back-up radio system. It offers full eighteen-channel capability to repeat radio transmissions, but it does **NOT** offer full coverage or access to the simulcast system. Even though Mount Lukens is considered a back-up radio system, there are important points to bear in mind.

1. The Mount Lukens system is truly independent of the simulcast system. It is not connected to the nine-site simulcast system for transmit purposes until it is turned on. When it is turned on, the simulcast system for the selected channels must be disabled.
2. The Mount Lukens site is located on a very prominent point overlooking the area around Battalion 12. It provides highly expanded system capability in the city and surrounding areas of the valley, especially in the area of Battalion 12 (for example, Vogel Flats).
3. Even though Mount Lukens is not transmitting with the simulcast system, it is listening in base station mode at all times. For example, if a member were working in a shadowed deep canyon or drainage in the hills above Battalion 12, it is very likely that Metro would hear radio transmissions received from Mount Lukens as if they were coming over the simulcast sites. However, the dispatcher has no way of knowing which site is receiving radio traffic. Responses from the dispatcher to the field unit may be extremely poor or nonexistent, but the dispatcher will hear the field unit fine. This is because of the full-time listening mode and its geographic location looking down into the valley. If this were the case, the Incident Commander might ask the dispatcher to change over to the Mount Lukens system on the selected channel. In this instance, Metro Fire Control would turn off the selected channel on the simulcast system and turn on the channel at Mount Lukens, thus providing Metro the capability to talk back to the field unit.
4. Mount Lukens is a repeater site. Field units can only connect to it in repeat mode. When Mount Lukens receives a voice radio message on the up leg (input) frequency; it repeats it on the down leg (output) frequency. This provides the capability for field units to communicate even though they may be on different sides of a ridge line that defy normal communications.

LAFD FREQUENCIES

Currently the LAFD uses four different frequency bands. The bands are defined as follows:

1. **800 MHZ**—The primary radio used for LAFD operations. Portable radios are indicated with red engravings and a red antenna band.
2. **700 MHZ**—Digital simplex channels that can be used for drills and for emergency operations for non-critical messaging. The 700-MHz band is programmed into the “red” 700/800-MHz band radios.
3. **ULTRA-HIGH FREQUENCY (UHF/500 MHZ)**—Used for mutual aid incidents with surrounding fire and police agencies. Also used for hospital base station contact. UHF portable radios are indicated with blue engravings and a blue antenna band.
4. **VERY HIGH FREQUENCY (VHF/100 MHZ)**—Used by surrounding fire agencies for tactical and routine operations. Also used as the Hospital Emergency Administrative Radio (HEAR). VHF portable radios are indicated with white engravings and a white antenna band.

The LAFD is licensed to use only the 700-MHz and 800-MHz bands. The Los Angeles City repeaters for the LAFD system operate only on 800 MHz. Use of an LAFD UHF or VHF radio is prohibited unless used in a mutual aid scenario. Furthermore, the repeaters used when operating the UHF and VHF radios are not property of the LAFD.

There are mutual aid channels in the 800-MHz band that are identified as statewide fire and law enforcement mutual aid channels, which the LAFD does support. These channels include:

1. FIREMARS (Fire Mutual Aid Radio System)
2. CLEMARS (California Law Enforcement Mutual Aid Radio System)

INTERFERENCE

Radio frequency interference can be either natural or manmade. Interference from internal noise occurs naturally in all electronic equipment due to the nature of the electronic circuit itself. Manufacturers take this into account during equipment design, and obtaining a low-noise design is not particularly difficult. In addition, natural noise is produced by sunspot activity, cosmic activity, and lightning storms. This noise usually is of small magnitude and not significant for most land mobile-radio communications. However, the VHF low band is affected significantly by severe sunspot activity, sometimes to the point of completely prohibiting communications.

More significant to radio communications systems is the interference produced by manmade sources. Vehicle ignitions, alternators, electric motors, high-voltage transmission lines, computers, and other equipment with microprocessors also emit radio signals that can interfere with department radios.

In general, manmade interference decreases with an increase in frequency. The UHF band and, initially, the 800-MHz band are much less susceptible to manmade interference than the VHF low and high bands. When systems are not subject to significant interference, they are said to be “noise limited” in contrast to “interference limited.”

ANTENNAS

When a portable radio is worn at waist level, such as with a belt clip or holster, the user’s body absorbs some of the signal transmitted or received by the radio. In addition, the antenna is at a lower level than if the user were holding the radio to his or her face for transmitting. If a user is in a situation where they need to enhance radio performance, if safe to do so, raise the radio up above head level then attempt communications again.

There are several reasons multiple transmit/receive repeater sites are located throughout the City of Los Angeles.

1. **SIGNAL STRENGTH**—The FCC limits transmitter power to a level that would not adequately cover the entire city even if it were flat. LAFD radio transmitters amplify signals to a maximum of 155 watts. Contrast that to KMPC-AM, for example, which transmits with 50,000 watts of broadcast power. Yet even with this powerful broadcast, there are areas up canyons, behind building or mountains, etc. that do not receive a signal. Therefore, in order to cover the city as well as is reasonably possible, the LAFD radio system is built around multiple transmit/receive sites.
2. **GEOGRAPHIC AND TOPOGRAPHIC**—Mountains, valleys, and distances limit the effectiveness of radio wave behavior. They effectively are physical barriers.
3. **RADIO WAVE BEHAVIOR**—The 800-MHz frequency band used by the LAFD is a more compact and powerful wave when compared to VHF (100-MHz) or UHF (500-MHz) bands. VHF signals tend to “crawl” over hills and up canyons, while the 800-MHz signal tends to be more limited to line of sight.

However, an 800-MHz wave tends to be more penetrating, working better inside buildings and underground.

4. **TECHNICAL LIMITATIONS**—Along with power limitations, the FCC limits the LAFD to certain frequencies. The LAFD system must operate under these FCC confines.
5. **SYSTEM REDUNDANCY**—Multiple repeater sites with overlapping area of coverage allow the system to provide complete or near complete coverage even if one repeater site were to become non-operational. It is this overlap that enhances the coverage in canyons, valleys, and buildings.

Each transmitter site has a companion receiver site. In some cases, such as Mount Lee, the two are closely located. At other locations, such as Oat Mountain, the transmitter and receiver sites are some distance apart. For technical reasons, transmitters and receivers must be separated to reduce interference between them. There are two basic means of achieving the required separation; vertical, as at Mount Lee, and horizontal, as at Oat Mountain.

In extreme circumstances, to provide maximum coverage for selected geographic areas, it may be necessary for commanders to locate in an area that provides maximum coverage for these areas. In such circumstances, commanders should consider locating at the following locations.

Battalion 1	Dodger Stadium South East Parking Lot
Battalion 2	Mount Washington Glenalbyn
Battalion 3	Baldwin Hills
Battalion 4	Baldwin Hills
Battalion 5	Mount Lee
Battalion 6	San Pedro Hill
Battalion 7	KSKQ RFS47
Battalion 9	Roof of 100 Wilshire/SP as B/U
Battalion 10	Beverly Glen / FS99
Battalion 11	Mount Lee
Battalion 12	Verdugo Peak
Battalion 13	Baldwin Hills
Battalion 14	Verdugo Peak
Battalion 15	Oat Mountain (east end of ridge)
Battalion 17	Oat Mountain (west end of the ridge)
Battalion 18	Baldwin Hills

PORTABLE RADIOS OR “HANDI-TALKIES”



Portable radios have the same basic features as the mobile units and base stations but are more limited in ability, especially in the transmit phase. LAFD portable radios transmit two or four watts of power (depending on model) and have a transmit range of up to about two–three miles in simplex or direct mode under the best of conditions. Portability rather than transmit power is the primary value of portable radios.

LAFD portable radios are provided to the field in three different bands: 700/800 MHz, UHF, and VHF. Although these radios appear the same, they are, in fact, quite different. The best way to differentiate between the radios is as follows:

- The 700/800-MHz radio has a red band on the antenna and red lettering.
- The UHF radio has a blue band on the antenna, has a blue face, and has blue lettering.
- The VHF radio has a white band on the antenna, has a white face, and has white lettering.

800 = Red; UHF = Blue; VHF = White

Additional special-purpose radios are provided for specific applications such as marine and aviation communications.

MODES OF OPERATION

There are three basic modes of operation for a radio system: simplex, duplex, and simulcast.

SIMPLEX

In simplex, one frequency is used, the transmitting radio is in direct mode, and all receivers and transmitters are tuned to the same transmit and receive frequency. When one unit is transmitting, all other units in the area are able to receive. Units are able to communicate effectively as long as they are within range.

The receiving radios will receive the transmitting unit message regardless of whether they are in simplex or duplex mode. However, to transmit back to the originating unit, the receiving unit must also be in the simplex mode.

In simplex or direct mode, the signal transmitted by the broadcasting unit is transmitted on the down-leg (output) frequency of the duplex or repeater channel.

DUPLEX

In duplex mode, two frequencies are used. The up-leg (input) frequency is defined as mobile to base. The down-leg frequency (output) is defined as base to mobile.

The duplex system is used when communicating with Metro Fire Control or accessing the simulcast system by having the radio in repeat mode. In repeat mode, the transmitting unit is transmitting on one frequency (the up leg or input frequency), it is received by the repeater site, and is retransmitted on a second frequency (the down leg or output frequency), where it received by receiving units.

Note: In Amateur Radio, the up leg is called the repeater input, or input frequency, and the down leg is called the repeater output, or output frequency.

SIMULCAST

When a radio system must cover a large area but the number of available frequencies is limited, a simulcast transmitter system may be the solution. With this system, multiple transmitters simultaneously transmit on the same frequency.

The transmitters must be precisely synchronized so that the signals they transmit do not interfere with each other. In addition, the audio source sent to the transmitters must be synchronized so that the radio user hears the same signal from each transmitter. The system consists of a simulcast controller and two or more simulcast transmitters. In the case of the LAFD, nine LAFD sites are synchronized. The advantages of a simulcast system are the coverage of a large area, with high signal levels throughout the area, while using only a single frequency.

The simulcast mode is used when transmitting mobile to mobile in the repeat mode. With this system, a mobile or portable radio, or Metro Fire Control, can be heard throughout the city. In the simulcast mode, the up- and down-leg frequencies are used. The up leg is known as the transmitting (input) frequency and the down leg is known as the receiving (output) frequency.

In the simulcast system, a radio message transmitted in repeat mode is sent out on the up-leg frequency; this weaker signal is received by the transmit/receive site and is then rebroadcast at a much higher output power on the down-leg frequency.

The difference in duplex and simulcast systems is that the simulcast system sends out the down leg at all transmit sites, thereby maximizing coverage to units in the field.

When Metro Fire Control broadcasts a voice message over the radio, it is going out on the simulcast system, thus ensuring the maximum coverage possible at all times.

It is important to understand the concept of simplex and duplex radio operations. There are distinct applications for each mode. For example, if a member were working inside on a structure fire and was unable to establish communications with other units on the scene in duplex mode, a switch to simplex mode would be appropriate and may well resolve the communications problem. It is possible that the radio waves are blocked from reaching a repeater site. Bear in mind that when switching to simplex mode, the member is transmitting on the down-leg (output) frequency and will be heard by other units on scene.

RECEIVER VOTERS—IMPROVE FIELD UNIT-TO-DISPATCHER COMMUNICATIONS

Metro Fire Control is connected to nine high-powered transmitters to provide the dispatch center with a high level of talk-out capability. The transmitters are elevated to achieve better line-of-sight communications with the service area. High-powered transmitters ensure that MFC's transmissions are heard throughout the city and provide some level of in-building coverage.

Portable radios have limited power and cannot always transmit a signal strong enough to reach all of the transmitter sites. To provide a more balanced system, receivers are networked together throughout the city in a receiver voter system (RVS). When a voice radio signal is received, a comparison of the received audio signal takes place in a receiver voter. The receiver voter and its network of receivers are referred to as the RVS. The RVS usually is located at Tech Control at Metro Fire Control. The receiver voter compares the audio from all receivers and routes the audio from the receiver with the best audio quality to the dispatcher. This type of system provides very reliable fire ground communications.

VOICE LOGGERS

All eighteen LAFD 800-MHZ channels are recorded twenty-four hours a day, seven days a week. This recording, however, is only done when the radios are operated in the duplex mode. Voice radio recording only occurs on messages that are transmitted on the up-leg frequency and are recorded as they are received at the repeater site selected by the receiver voter system.

BIDIRECTIONAL AMPLIFIERS

Another solution to improving communication between field units inside buildings or tunnels, dispatch, and other on-scene units, is the bidirectional amplifier (BDA). BDAs can be used with duplex and simulcast radio systems to extend coverage from inside the structure to the outside of the structure and vice-versa, but BDAs do not operate with simplex radio systems.

To overcome radio system in-building coverage difficulties, BDAs often are used to rebroadcast the system within buildings. There are many types of BDAs; all require electrical power and some type of antenna system. Often the antenna systems are installed in the plenum spaces of commercial structures. These antenna systems are generally nothing more than plastic-coated coax cable that runs to the amplifier. The amplifier is generally located in a communications or alarm system room. Most BDA systems include battery backup power to keep them operational if a loss of commercial power occurs.

BDAs work well for incidents such as EMS calls and law enforcement incidents where there is no fire involvement in the building or building systems. In a structure with active fire, the building and building systems may be affected directly.

Buildings in Los Angeles with BDAs to enhance LAFD communication include the following.

1. Nokia Theatre
2. Getty Center
3. City Hall East
4. Staples Center
5. MTA Tunnels

INCIDENT COMMAND SUPPORT

DEPARTMENT CAPABILITIES

Separate from our standard radio equipment, the Fire Communications and Dispatch Support Section and Metro Fire Control have access to tools and apparatus that will aid in the advent of a large-scale incident to assist with and resolve communications shortfalls. This ancillary equipment includes the following:

1. Portable 800-MHz repeater systems.
2. Portable cross-band link systems.
3. Interoperability vehicles.
4. Broadband (Internet) connectivity.
5. Cellular phone amplifiers and repeater systems.
6. Radio, battery and charger caches (VHF, UHF, 700/800 MHz)
7. Mobile repeater vehicles with cross-band capability.

PORTABLE REPEATERS

The Department has a supply of portable 800-MHz repeaters which can be placed by trained and qualified members to resolve radio coverage in areas which may have compromised coverage. The Kirkwood Bowl area in

Battalion 5 is a classic problem area for the LAFD. Fire Communications personnel have preplanned sites for known problem areas in the city.



PORTABLE CROSS-BANK LINKS

Portable cross-bank links enable the linking of different radio bands into a common system. For example, a voice radio message transmitted on 800 MHz can be received by the cross-bank link and then retransmitted on UHF or VHF as desired and vice versa: a UHF or VHF voice radio message would be linked and retransmitted on 800 MHz to provide for a common communication link with outside agencies. Portable links look exactly like a portable repeater, but the internal workings vary.

RADIO, BATTERY, AND CHARGER CACHES (VHF, UHF, AND 700/800 MHZ)

The Department currently uses the Motorola IMPRES batteries and charger systems for its portable radios. This smart energy system automatically reconditions IMPRES batteries based on actual usage, keeping them in peak condition. Talk time and cycle life are optimized and the need for manual maintenance programs is eliminated. IMPRES batteries, when used with an IMPRES charger, provide automatic, adaptive reconditioning, end-of-life display, and other advanced features. Data is stored in the battery and communicated to the charger via a unique IMPRES communication protocol, which is designed to maximize talk time and optimize battery cycle life—all automatically. In addition, batteries left in the charger are kept fully charged so they are always ready when needed. This rapid-rate, tri-chemistry charging system will also charge compatible non-IMPRES batteries.



Most conventional chargers transition to a maintenance charge mode at the completion of a charge cycle. Maintenance charge is constant power applied to a battery in an effort to keep it charged over time. This results in long-term heating that can damage a battery, resulting in lost capacity. IMPRES chargers automatically turn off at the end of a charge cycle yet continue to electronically monitor IMPRES batteries every five minutes to determine when more energy should be applied to the battery. This process assures that the battery maintains a very high state of charge without sustaining heat damage due to the charger.

IMPRES chargers have additional LED indication capability to supply even more information during a charge cycle.

The alternating red/green LED indicates batteries have fallen below a certain capacity threshold (typically less than 60 percent of rated minimum capacity). An IMPRES battery exhibiting a red/green indication is not defective—it has simply reached a capacity level that may limit its usage.

IMPRES technology provides a communication interface between radios, batteries, and chargers, which automates battery maintenance and enhances the capabilities of two-way radio systems. Batteries that are charged and maintained at their optimal levels benefit from longer life, ensuring the reliability of the radio and meet the safety requirements of the mission.

Optimizing battery performance requires an intelligent approach to battery maintenance. Inadequate maintenance and overcharging are two of the leading reasons for premature battery failure. Most apparent in Nickel-Cadmium (NiCad) batteries, but also relevant to Nickel-Metal-Hydride (NiMH) batteries, memory effect occurs when batteries are repeatedly charged without allowing the battery to fully discharge prior to subsequent charge cycles. Memory effect manifests itself as a condition wherein the battery loses its ability to accept a full charge. This results in shorter usage time and the need to recharge more frequently. To minimize this problem, NiCad and NiMH batteries require periodic reconditioning for optimal performance. Users of conventional batteries, chargers, and reconditioners must guess at the correct reconditioning intervals, which vary due to usage patterns and may be unknown. Reconditioning too frequently wastes battery cycles, while reconditioning not often enough results in diminished battery performance and shorter lifespan—driving up equipment costs.

Each IMPRES battery contains memory to store battery historical charge and recondition/recalibration data. IMPRES chargers contain a microcontroller that manages communication between the battery and charger. Placing an IMPRES battery into an IMPRES charger triggers the charger to write data into the battery's memory listing the charge event details.

IMPRES charging, periodic automatic reconditioning, and recalibration serve three purposes:

- Recalibrates the battery
- Helps to minimize the memory effect
- Utilizes battery data to optimally charge the battery

IMPRES chargers evaluate the actual usage pattern of each IMPRES battery. This allows the charger to adapt to that individual battery's usage pattern and establish the optimal reconditioning and recalibration interval for that battery. IMPRES uses an adaptive algorithm, which relies on several factors to evaluate the need for reconditioning/recalibration.

The system then automatically reconditions/recalibrates the battery as required. The intelligence within the IMPRES system automates the process, removing guesswork from determining the optimal reconditioning/recalibration interval.

At time of manufacture, every battery contains a fixed amount of energy, all of which remains available for use when the battery is fully charged. Fully charging a battery generally means that the battery has completed both the Rapid Charge and Trickle charge phases of the charge process and now contains all of the energy that the battery is capable of producing. As a battery cycles through repeated charge and discharge phases, the amount of available energy decreases. The battery remains fully charged but will ultimately contain less energy over time. For example, a new battery when fully charged contains 100 percent of its initial available capacity, whereas an old battery when fully charged contains only 60 percent of the original capacity.

Motorola chargers used by the Department report the following information in a two-line display:

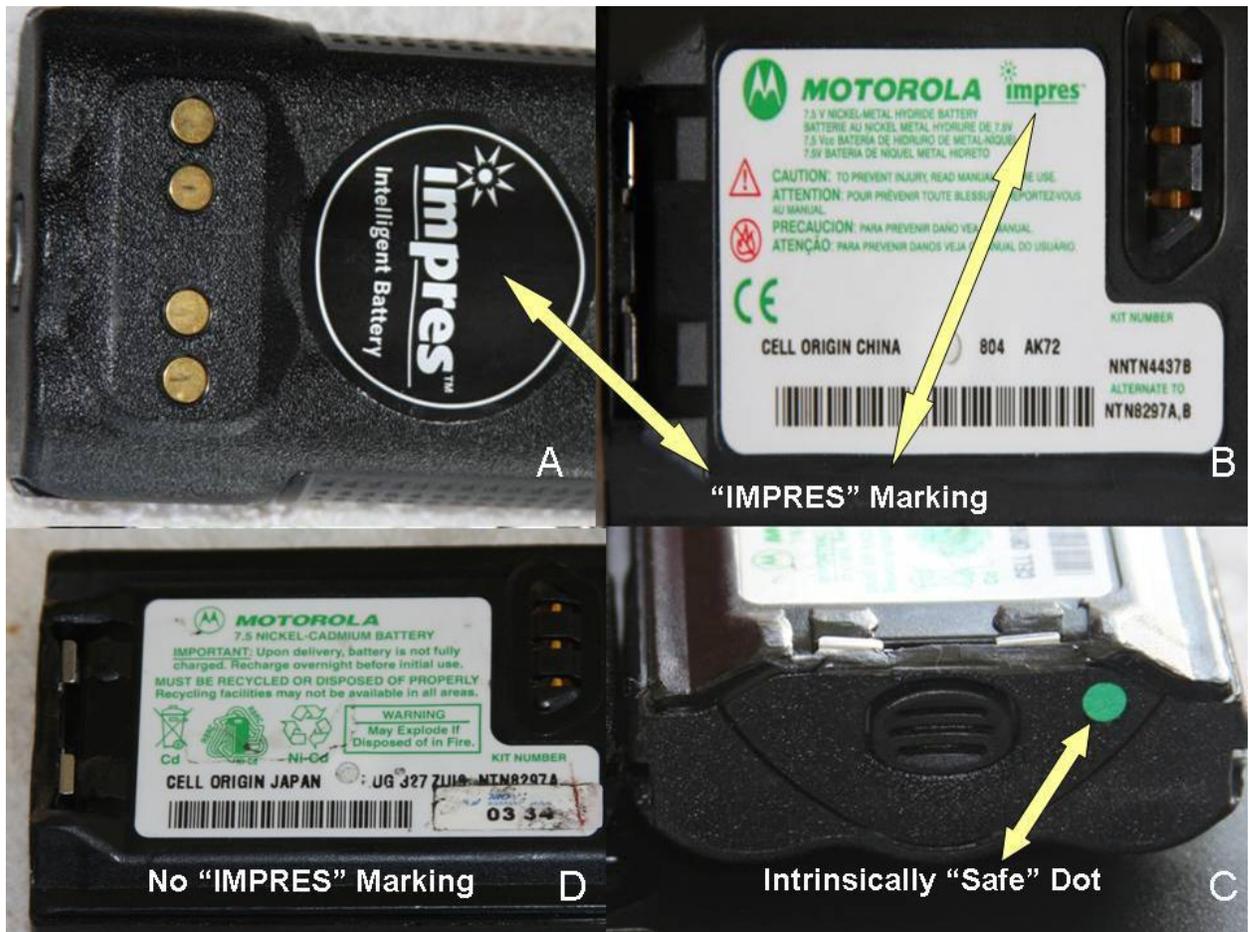
- Battery serial number, kit number, and chemistry
- Battery charge capacity in milliamp hours (mAh)
- Battery charge capacity as a percentage of rated capacity
- Battery voltage
- Estimated battery capacity at end of charge in mAh
- Time remaining to complete rapid charge cycle (NiCad and NiMH only)
- Notification when a battery is approaching reconditioning

Battery charger systems and batteries are available at each work location and a cache of chargers and batteries is available through the Fire Communications Section to support large scale or extended incidents.

Charge Indicator	Description
Steady Red	Battery is in rapid charge mode.
Flashing Green	Battery is in trickle charge.
Steady Green	Battery is fully charged.
Flashing Yellow	Charger is waiting to charge (temperature of battery too hot or too low).
Flashing Red	Battery not making proper contact.
Steady Yellow	Battery is in recondition mode.
Flashing Red/Green	Battery is fully charged but is nearing the end of its rated service life.

OUTSIDE AGENCY OR "NON-IMPRES" BATTERIES

Members are advised that other City Departments such as LAPD use the same brand and model radio as the LAFD (Motorola XTS5000), but the radios are not intrinsically rated, nor do they use the intrinsically rated IMPRES battery. IMPRES batteries can be identified by the "IMPRES" marking and the intrinsically rated "green dot" as depicted below.



Portable radio batteries that do not bear the IMPRES marking and the intrinsically rated green dot, shall not be used with LAFD portable radios. *Note:* it is possible for a battery to have the IMPRES marking and NOT have the intrinsically safe green dot.

Do not use or charge LAFD batteries without the intrinsically safe dot.

CONCLUSION

Communications systems for public safety use the same basic communication technologies as other industries, but the needs of the fire service are often unique. These unique requirements, primarily the frequent use in Immediately Dangerous to Life and Health (IDLH) environments, require different solutions than those of other radio system users.

It is important that fire service members understand the systems they have in service and use their knowledge to ensure effective communications.

The fire service has unique communications needs related to operating in hazardous atmospheres with protective equipment. Although the general communications needs of the fire service often are represented, it is important that these needs are presented clearly to the manufacturers, standards-making bodies, and regulatory agencies. The only way to achieve a favorable outcome is to participate and inform.

CITY OF LOS ANGELES EOC & LAFD DOC

The City of Los Angeles EOC and LAFD DOC are equipped with a total of four Kenwood TS-2000X amateur radios. These radios are capable of operating from the HF (low frequencies) up to UHF frequencies and the 1.2 GHz Mhz bands. This type of radio is referred to as an “all band” radio allowing local, state, national, and international communications.



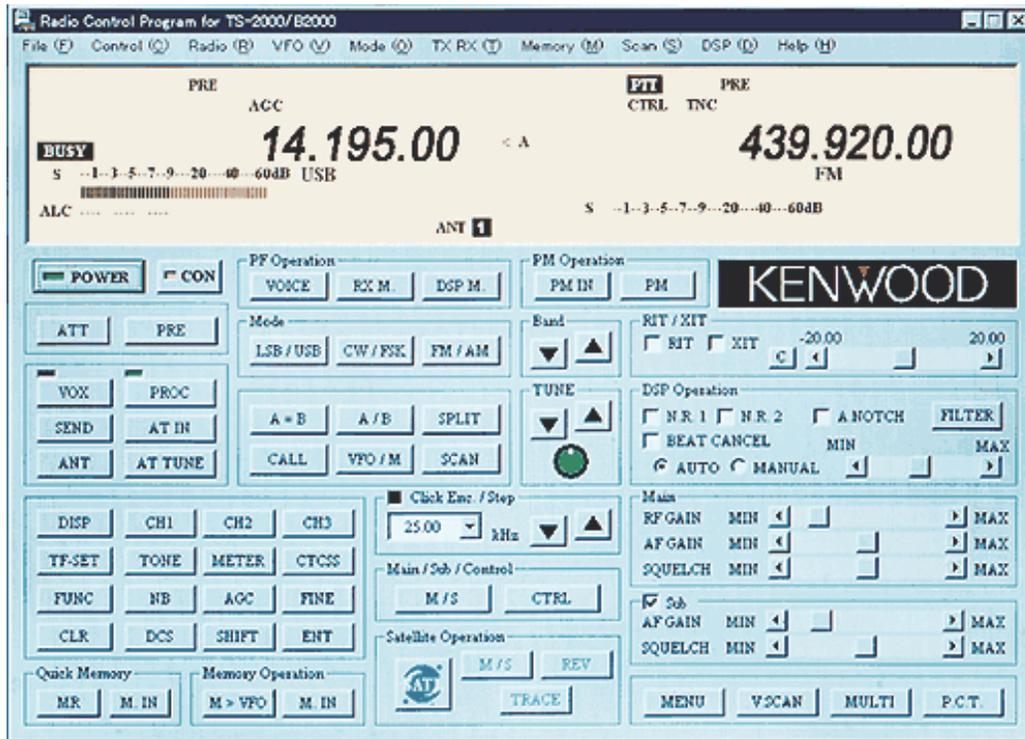
Figure 10: Kenwood TS-2000x

The EOC and DOC each have a “left” and “right” operating position. The left-hand positions are remoted via city intranet to the nineteenth floor of City Hall East where the actual radio is mounted in a nineteen-inch equipment rack. The radios have separate antennas that are mounted to the nineteenth floor parapet. A fifth radio is located at North Valley Station and is connected to a PC running the ARCP-2000 remote software for training purposes.

The right-hand positions are remoted via CAT-5 cable to the equipment room on the second floor of Metro Fire where the actual radio is mounted in a nineteen-inch equipment rack. The radios have separate antennas that are mounted to the roof of the EOC.

REMOTE CONTROL SOFTWARE

All four radios are controlled by Windows based computers via the ARCP-2000 remote control software as shown below. All of the functionality of the radio can be controlled by the software. Each computer has a microphone, speaker, and headphones. Currently, only the EOC radios are on the main EOC UPS system. Two UPS units need to be procured for the DOC to avoid power surges during generator tests.



DOC SEATING CONFIGURATION

Two seats are provided for the TS-2000X computerized workstations. One TS2000X connects via modem to City Hall East 1900. One TS2000X connects directly via CAT5 cable to the equipment room adjacent to the MFC Floor and Tech Control.



EOC SEATING CONFIGURATION

Two seats are provided for the TS-2000 computerized workstations. One TS-2000X connects via modem to City Hall East 1900. One TS200 connects directly via CAT5 cable to the equipment room adjacent to the MFC Floor and Tech. Control.



EOC & DOC ANTENNA SYSTEMS

Both radios in the EOC and DOC are connected to Cushcraft R-8 antennas that cover 6-40 meters. Both radios in the EOC and DOC are also connected to Comet V/U/1.2 GHz tri-band antennas. The State of California ACS program through Cal OES now runs their Wednesday Net on 40 meters. The Monday night net is conducted on 80 meters. Currently there is no 80-meter capability at the EOC or DOC.

The left station in the EOC is connected to an R-8 and is switchable to an inverted “V” Antenna. The inverted “V” antenna takes up more roof space but is more effective transmitting to Sacramento than the R-8, which is designed for longer distances.



FIRE STATION 88 40' COMMAND TRAILER

SHOP 58036



The ACS Command Trailer at Fire Station 88 is the original amateur radio station that was established in 1992. The forty-foot fifth wheel trailer was surplus as the old LAFD Command 2 trailer.

The original 1970's Command 1 trailer was salvaged several years ago. This trailer is supplied with 120 VAC and backed up with the military surplus generator. Mark Willardson from Supply & Maintenance restored the generator in approximately 2006. Numerous antennas are mounted on two separate forty-foot towers.

Additional antennas are mounted on cross-members on the roof of the trailer. There are two 2-meter VHF, one 222-MHz, one 440 MHz, one 6-meter and one 440/1.2 GHz radios. In addition, a HF radio capable of operating on 160 meters through 10 meters.



The far right station handles state, national and international High Frequency (HF) radio traffic.



The five workstations represented in this photograph handle state, county and local radio traffic on the VHF,UHF, and 1.2 GHz radio bands.

A 800-MHz Department Syntor is available at the far left and reliable direct simplex comms can be achieved to North Valley Station.

All of the radios in Trailer 88 are backed up by multiple deep-cycle batteries and operate off of two fifty-amp power supplies. Mark Willardson from LAFD Supply and Maintenance made all of the cabinetry by hand.



A Surplus Military 50-kw diesel generator was rebuilt and painted by the staff from LAFD Supply and Maintenance and is maintained and started on a monthly basis to power the ACS trailer in case of a long-term power outage. The generator is powered by a Caterpillar 3126 diesel engine. A 125-gallon diesel fuel tank will run the generator for approximately seventy-two hours.

NORTH VALLEY STATION - PENROSE @ GLENOAKS - SUN VALLEY

(OLD FIRE STATION 77)



Old Fire Station 77 was decommissioned in 2006 and reassigned to the LAFD ACS Program upon the opening of new fire station 77. The station operates international, national, state, and local radio equipment. The station is maintained by the volunteer corps. No budget is currently assigned to the facility.

The facility has a radio room, kitchen, office, and two working class rooms.

A large meeting room is adjacent to the kitchen and used for monthly staff and planning meetings. This room is also used for training in various Amateur Radio operations.





The classrooms are used for volunteer training. The facility was also used to start the AVL project by converting one classroom into a research and development lab.

The thirty-five foot tower installed at the rear of the station was donated by CalTrans and was removed prior to the demolition of the old CalTrans building in downtown L.A.

An inverted "V" antenna is used for "High Frequency" (HF) communications with OES in Sacramento and other regional offices throughout the state.

The hose tower currently holds the HF directional antenna with rotator.

Other antennas are used for county and local communications.

Direct simplex comms are easily done with the EOC/DOC on VHF, UHF, and 1.2 GHz.



The radio room at North Valley Station has operating positions. The left position is equipped with an 800-MHz department radio followed by a HF radio.

The TS 2000X radio shown in the photo is the same radio as located in the EOC/DOC and City Hall East radio sites. This radio is remotored into the meeting room for training. Battery back-up and solar charging have been installed.



The right section of the radio room has a 2-meter VHF followed by a 222-MHz, 440-MHz and an additional 2-meter radio.

800-MHZ XTS3000 RADIO CACHE

ACS is assigned twenty of the older XTS3000 portable radios. These radios do not have 700 Mhz or trunking capabilities. Eventually, these radios will have to be upgraded to operate on the 800 STRS system as well as 700-Mhz mutual aid frequencies.



FIRE STATION 5 AND BATTALION 4 OPERATION CENTER



The Fire Station 5 Community Room and Battalion 4 Operations Center is equipped with one Kenwood TS-2000X, which is the same radio installed at the EOC, DOC, and North Valley Station. The radio is capable of HF through 1.2Ghz operations.





HF, 2-meter, 440, and 1.2 GHz amateur antennas are installed on the roof as well as an 800-MHz dipole antenna for operations on LAFD and mutual aid frequencies.

FIRE STATION 109—16500 MULHOLLAND DRIVE



A Kenwood TM-V71 dual band mobile on a 12VDC Power Supply connected to a VHF/UHF Fiberglass Gain Antenna.