CHAPTER U

TABLE OF CONTENTS

U.1 Introduction

This Chapter contains information regarding the operations and maintenance of Caltrans' telecommunications systems, including: 2-way land mobile radio, satellite, fiber optic, wired, wireless, and amateur radio systems.

U.2 2-Way Land Mobile Radios

The Caltrans Office of Radio Communications, (ORC), plan, manage and maintain Caltrans' 2-way, land mobile, radio system. The State Administrative Manual, Section 4501, and Government Code, Section 14931, authorizes the Governor's Office of Emergency Services (OES), Public Safety Communications (PSC), to acquire, install, equip, maintain, and operate new or existing public safety communications systems and facilities for public safety agencies. The rules and regulations governing Caltrans' use of the radio spectrum are administered by the Federal Communications Commission (FCC), and are enumerated in the Code of Federal Regulations, Title 47, Parts 90 and 101. Caltrans must strictly observe and abide by the rules and regulations set forth by the FCC, Federal, State and local authorities.

Radio engineers within the ORC are responsible for the communications needs of a specific District or Districts; similarly, a Radio Coordinator is designated by the District, who is responsible for the District's communications needs, and works closely with the District Radio Engineer.

(A) The District Radio Coordinator's responsibilities include:

(1) Distributing radio equipment to the field crews
(2) Training radio users
(3) Maintaining the District's radio equipment inventory (SAM Section 8652 requires State agencies to complete its equipment inventory every 3 years)
(4) Dispatching the PSC technician(s) when equipment or system repairs are required
(5) Acting as the liaison between the ORC and the District

(B) The District Radio Engineer's responsibilities include:

(1) Working with the District Radio Coordinator to determine the District's communications needs
(2) Assisting the District Radio Coordinator with radio operation training and equipment inventory
(3) Ensuring that the Caltrans radio system operates in accordance with all Federal, State and local rules and regulations
(4) Working with PSC to design and implement radio communications systems that meet the District's communications needs.

When a need to repair communications equipment arises in the District, radio users must contact their respective District Radio Coordinator first; the District Radio Coordinator then contacts the PSC technician directly and requests their service.
When a "new" system, or problem arises requiring a PSC work order, the District Radio Coordinator contacts their respective Radio Engineer, and the Radio Engineer will develop the work order, and submit the work order to PSC. Pre-authorized work orders are initiated by the District Radio Coordinators and approved by the District Radio Engineer.

Radio Communications Sites

Caltrans owns, or is the master lease holder for, various radio communications sites throughout the state. These sites include radio vaults and towers, and may be located in mountain-tops, Traffic Management Centers, District Offices, Region Offices, and Maintenance Stations. In some Districts, Caltrans has also installed cabinets along the roadway housing its radio equipment. All requests for co-locating equipment in Caltrans owned, or leased radio communications sites must be submitted to the District Radio Engineer. The District Radio Engineer will perform a space and technical review and respond with the appropriate recommendation to the request.

All inquiries regarding Caltrans' 2-way land mobile radio system should be directed to the Chief, Office of Radio Communications, Division of Maintenance. More information about Caltrans' Office of Radio Communications can be found at:
http://onramp.dot.ca.gov/hq/maint/RadioComm/index.shtml

Note: Any and all work requiring the assistance of PSC requires ORC approval.

U.3 Satellite Communications Systems

The ORC is responsible for planning, managing and operating Caltrans' satellite communications systems. The systems include: fixed, portable and mobile satellite systems, and fixed satellite telephones.

Portable and Mobile Satellite Systems (CT SATCOM)

Caltrans owns and operates 4 mobile satellite communications trailers and 2 portable satellite systems, named CT SATCOM.

(A) Caltrans has established a Statewide CT SATCOM Coordinator whose responsibilities include:

(1) Deploying portable and mobile satellite equipment when requested;
(2) Completing monthly system testing;
(3) Maintaining equipment associated with the CT SATCOM system.

In Districts where mobile CT SATCOM equipment is located, the District will designate a crew who is primarily assigned to maintain and operate the CT SATCOM equipment during deployment and monthly testing.

Requests to deploy Caltrans' mobile CT SATCOM equipment, as outlined in the memorandum, "Requesting Caltrans Portable Satellite Communication Service", shall be submitted to *one* of the following people:

(A) Statewide CT SATCOM Coordinator;
(B) Chief, Office of Radio Communications;
(C) Chief, Division of Maintenance;
(D) Deputy Director, Maintenance & Operations.

Fixed Satellite telephone

Caltrans utilizes two types of fixed satellite telephone systems: CT SATCOM and Emergency Satellite System (ESAT). In Districts where a fixed CT SATCOM system is installed, a total of 24 satellite telephone extensions are available. The ESAT system provides one satellite phone extension.

NOTE: The Districts will have either the CT SATCOM, or ESAT fixed satellite telephone system installed, not both. It is the District's responsibility to select and assign appropriate staff to its complement of satellite telephone extensions.

All equipment and parts purchases for the CT SATCOM system must be reviewed and approved by the ORC.

All inquiries regarding the CT SATCOM system should be directed to the Statewide CT SATCOM Coordinator. More information about CT SATCOM, including contact information and deployment can be found at:

http://onramp.dot.ca.gov/hq/maint/RadioComm/index.shtml

U.4 Caltrans Auxiliary Radio System (CARS)

The CARS consists of volunteer Amateur Radio Operators throughout the state. The ORC plans, manages and provides technical support for the CARS.

(A) Caltrans has established a statewide CARS Coordinator, whose responsibilities include:
  (1) Coordinating system implementation and installation of the CARS equipment statewide;
  (2) Recruiting CARS volunteers;
  (3) Acting as the liaison between the ORC and the CARS volunteers.

All equipment and parts purchases for the CARS must be reviewed and approved by the ORC. All inquiries regarding CARS should be directed to the Statewide CARS Coordinator. More information about CARS can be found at:
http://onramp.dot.ca.gov/hq/maint/RadioComm/index.shtml

U.5 Wired, Wireless, Fiber Optic Communications Systems

The Traffic Operations Systems Network (TOSNET) consists of various field elements, (including: HARs, CCTVs, CMS, Ramp Meters and loop detectors) and employs wired, wireless, and fiber optic communications systems.

The ORC is responsible for the maintenance of the communications systems associated with the TOSNET system, and has assigned Regional TOSNET Coordinators responsible for specific Districts.

TOSNET system repairs are initiated by Traffic Operations through a Trouble Ticketing System. Once a trouble ticket is entered, the trouble ticket system automatically notifies the appropriate Maintenance staff. The Maintenance staff tracks the trouble ticket until the repairs are completed. In some instances Maintenance may have the option of utilizing contractors to complete the repairs.

The designated District TOSNET contract manager reviews and approves all work orders issued to the contractor.