



WHEN ALL ELSE FAILS...



AMATEUR RADIO WORKS



# Emergency Radio

Getting the message through for your family and community

San Diego  
DX Club

Amateur Radio  
Emergency Service

## Amateur Radio Public Service Benefits to the City of San Diego

January, 2009

This document was prepared by officers and members of the San Diego DX Club, along with local San Diego members of the ARRL and Amateur Radio Emergency Service® volunteers in San Diego



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## Executive Summary

The officers and members of the San Diego DX Club, along with local San Diego members of the ARRL and Amateur Radio Emergency Service® volunteers in San Diego have compiled this description of the more than 28 important Public Safety stakeholders whose Public Service and Safety efforts would be seriously harmed by the City of San Diego's proposed restrictive Amateur Radio antenna regulations. It is believed that once the City understands the value that the 3,691 Amateur Radio Operators in San Diego bring to our City that the City will avoid major and unnecessary expense for itself and its citizens by not proceeding with this destructive and likely unlawful legislation.

The Federal Communications Commission Public Safety and Homeland Security Bureau <http://www.fcc.gov/pshs/services/amateur.html> established the amateur radio service as a voluntary non-commercial radio communications service that allows licensed operators to provide our nation with a pool of trained radio operators and technicians who can provide essential communications during civil and natural emergencies.

For almost a century, San Diego's Federally Licensed Amateur Radio Operators have helped protect San Diego by providing Emergency Communications "When All Else Fails." Time and time again the Amateur Radio Service has helped save lives and property in San Diego. Even in this modern age of instant communications, as we saw during Hurricane Katrina and the 2003 and 2007 San Diego firestorms, commercial and government communications systems failed while Amateur Radio continued to provide vital life-saving links.

If the proposed ordinance becomes law, the Amateur Radio Service in the City of San Diego will be effectively smothered due to restrictions on antenna installation. The legal discussion of the proposed legislation, covered in separate document by our Legal Counsel, will show that the courts will likely rule that the proposed San Diego legislation is unlawful under Federal PRB-1 and State AB1228 regulations. The proposed legislation will also seriously harm the Public Safety of San Diego and cause its Citizens unnecessary expenses to fight it in the courts.

San Diego's Amateur Radio Operators donate countless hours working on behalf of the residents of San Diego by spending their own money to install and maintain their equipment, and giving freely of their time to maintain their training and skills. This in turn contributes to the reliability of communication networks that cannot be matched by equipment that is merely installed but neglected until disaster strikes

The most important part of San Diego's Amateur Radio infrastructure is the considerable investment that has been made into home-based stations and critical antenna systems that provide the primary backbone of emergency communications. Without these stations and their high frequency (HF) antennas, San Diego's Public Safety would be harmed and severely limited in its ability to communicate outside of the San Diego region.

The proposed legislation will cause irreparable harm to the people of San Diego, and City officials are strongly urged to reject it.



## Amateur Radio Benefits to the City of San Diego

Amateur Radio has been in existence for almost a century and from its earliest days it has provided emergency communications "When All Else Fails". There are 650,000 licensed in the USA and over 100,000 in the State of California.

There are currently 3,691 Amateur Radio Operators licensed by the FCC in the City of San Diego and a total of 8,834 in San Diego County.

These civic-minded individuals voluntarily contribute vital communications for many City agencies, during both everyday events and disasters. They have provided critical communications during local emergencies such as the firestorms in 2003 and 2007 but they also provide ongoing communications services for the Red Cross, San Diego County Emergency Operations Center, San Diego County Sheriff, Hospital Emergency Services, CAL FIRE, US Marine Corps Base Miramar, State of California Office of Emergency Services, Miramar Air Show, the Thunder Boat Races in Mission Bay and the Mother Goose Parade to name a few...

- San Diego's Amateur Radio Operators have invested almost \$6,000,000 in capital equipment, and annually invest more than \$500,000 into new equipment and maintenance, with no adverse impact on the City budget
- San Diego's Amateur Radio Operators contribute more than 115,000 man hours of personal time while serving their community (See Table 1)
- San Diego's Amateur Radio Operators save the City of San Diego more than \$2,500,000 annually in Direct Avoided Costs of Labor (See Table 2)
- San Diego's Amateur Radio Operators spend more than \$2,000,000 annually at the local Ham Radio Outlet store in Kearny Mesa generating more than \$150,000 in Sales Tax Receipts
- San Diego's Amateur Radio Convention brings more than \$150,000 in Convention Business and 1,000 room-nights to San Diego
- Over the years, San Diego's Amateur Radio Operators have directly saved the City of San Diego millions of dollars by providing free of charge Emergency, Public Safety and Public Service Communications

**Table 1 -- Amateur Radio Benefits to San Diego**

	MEMBERS	ANNUAL VOLUNTEER HRS	AMATEUR RADIO CAPITAL EQUIPMENT INFRASTRUCTURE	
			AMATEUR OPERATOR OWNED	GOVERNMENT / AGENCY OWNED
1 AMERICAN RADIO RELAY LEAGUE (ARRL)	1620			
2 AMATEUR RADIO EMERGENCY SERVICE (ARES )	340	8,500	\$ 255,000	
3 RADIO AMATEUR CIVIL EMERGENCY SERVICE (RACES)	120	6,000	\$ 60,000	\$ 350,000
4 MILITARY AFFILIATE RADIO SERVICE (MARS)	115	11,500	\$ 575,000	
5 SKYWARN	315	1,575	\$ 157,500	
6 CAL FIRE VOLUNTEERS IN PREVENTION	200	1,600	\$ 100,000	\$ 25,000
7 COMMUNITY EMERGENCY RESPONSE TEAM (CERT)	110	2,200	\$ 38,500	
8 SAN DIEGO COUNTY EMERGENCY MEDICAL SERVICES	220	2,200	\$ 220,000	\$ 135,000
9 SAN DIEGO/IMPERIAL COUNTY CHAPTER OF THE AMERICAN RED CROSS	65	3,250	\$ 65,000	\$ 150,000
10 FIRENET – PALOMAR AMATEUR RADIO CLUB	380	5,700	\$ 740,000	
11 STATE OF CALIFORNIA OFFICE OF EMERGENCY SERVICES	135	13,500	\$ 270,000	\$ 75,000
12 SALVATION ARMY TEAM EMERGENCY RADIO NETWORK (SATERN)	56	6,160	\$ 280,000	
13 SAN DIEGO DX CLUB	81	810	\$ 405,000	
14 SAN DIEGO COUNTY AMATEUR RADIO COUNCIL (SANDARC)	2220	11,100		
15 ANIMAL RESCUE RESERVE	82	4,100	\$ 41,000	
16 ARRL OFFICIAL EMERGENCY STATIONS	14	2,100	\$ 140,000	
17 WINLINK 2000 SYSTEMS	350	7,000	\$ 350,000	
18 ARRL NTS NATIONAL TRAFFIC SYSTEM (SDCTN)	135	2,700	\$ 135,000	
19 SAN DIEGO REPEATER ASSOCIATION	880	8,800	\$ 1,320,000	
20 SAN DIEGO YACHT CLUB AMATEUR RADIO GROUP	120	1,200	\$ 180,000	
21 UNITED STATE COAST GUARD AIR AUXILIARY – FLOTILLA ONE	22	176	\$ 11,000	
22 CORONADO EMERGENCY RADIO OPERATORS INC.	60	3,000	\$ 30,000	\$ 45,000
23 CALIFORNIA AMATEUR RADIO EMERGENCY SERVICES NETWORK (CARES)	25	2,500	\$ 125,000	\$ 35,000
24 POINT LOMA AMATEUR RADIO CLUB	29	435	\$ 75,000	
25 BOY SCOUTS OF AMERICA – K6BSA	350	3,500	\$ 150,000	
26 MERCURY AMATEUR RADIO ASSOCIATION	200	3,000	\$ 40,000	
27 SOUTH BAY AMATEUR RADIO SOCIETY	55	275	\$ 55,000	\$ 125,000
28 COMMUNICATION OPERATIONS PERSONNEL EVACUATION (COPE)	35	70	\$ 17,500	
29 MARINE CORPS AIR STATION MIRAMAR	125	2,500	\$ 93,750	\$ 50,000
<b>TOTALS</b>		<b>115,451</b>	<b>\$ 5,929,250</b>	<b>\$ 990,000</b>

**Table 2 -- Direct Avoided Cost of Labor to San Diego**

**CITY OF SAN DIEGO DIRECT AVOIDED COSTS OF LABOR DUE TO AMATEUR RADIO VOLUNTEERS**

(Rate Source - SALARY TABLE 2008-SD Step 5)

(Assumes 20% Overtime Hours)

Total Hours 115,451

<b>% Labor Component</b>	<b>Labor Grade</b>	<b>Basic Rate</b>	<b>Hours</b>	<b>Overtime Rate</b>	<b>Hours</b>	<b>Avoided Costs</b>
30%	4	\$ 15.55	27,708	\$ 23.33	6,927	\$ 592,471
50%	6	\$ 19.40	46,180	\$ 29.10	11,545	\$ 1,231,862
10%	8	\$ 23.87	9,236	\$ 35.81	2,309	\$ 303,151
7%	10	\$ 29.03	6,465	\$ 38.43	1,616	\$ 249,801
3%	12	\$ 38.23	2,771	\$ 38.43	693	\$ 132,549

**Direct Annual Avoided Costs**

**\$2,509,835**



## American Radio Relay League (ARRL)

The American Radio Relay League (ARRL) [www.arrl.org](http://www.arrl.org) was founded in 1915 as a noncommercial membership association of radio amateurs, organized for the promotion of interest in amateur radio communication and experimentation.

ARRL is the principal representative of the Amateur Service and Amateur Satellite Services in the United States, and is the Secretariat for the International Amateur Radio Union, the worldwide association of national amateur radio societies. ARRL coordinates efforts with other emergency organizations including the police, [FEMA](#), [NOAA](#), [RACES](#), [ARES](#), [NVOAD](#), the [Salvation Army](#), and the [American Red Cross](#).

ARRL was organized for the establishment of networks to provide communications in the event of disasters or other emergencies, for the advancement of the radio art and of the public welfare, the fostering of education in the field of electronic communications; the promotion and conduct of research and development to further the development of electronic communication; the dissemination of technical, education, and scientific information relating to electronic communication; the printing and publishing of documents, books, electronic media, and publications necessary or incidental to any of the above purposes; for the representation of the radio amateur in regulatory matters; and to promote fraternalism and high standards of conduct among radio amateurs. It serves its members by protecting and enhancing spectrum access and providing a national resource to the public.

The 160,000 member ARRL regularly provides financial support and legal assistance to local amateurs to assist them with their legal battles.

In addition, the ARRL holds its annual South Western Regional Convention in San Diego every four years. This brings approximately 2,000 convention visitors, at least 1,000 hotel room-nights and a direct economic benefit of approximately \$150,000 in Convention-related business to the City of San Diego.



## **Amateur Radio Emergency Service® (ARES)**

In 1925, ARRL formed the Amateur Radio Emergency Service® (ARES), <http://www.arrl.org/FandES/field/pscm/sec1-ch1.html> that is specifically tasked to provide emergency public service communications.

ARES is organized in a similar fashion to the American Red Cross. ARES has local chapters called Sections, which provide local emergency communication services. San Diego Section ARES, also known as the San Diego Emergency Radio Operators Inc, a 501(c)3 non-profit corporation ([www.sdgares.net](http://www.sdgares.net)), provides emergency communications services to San Diego and Imperial Counties.

San Diego ARES is managed by a locally-elected Section Manager (SM) who resides in San Diego. Emergency communications are the responsibility of a Section Emergency Coordinator (SEC), who manages activities in five districts. Each of these five districts is managed by a District Emergency Coordinator (DEC) who may appoint several Emergency Coordinators (EC) with local area responsibilities.

This highly decentralized yet structured organization has enabled San Diego ARES to respond very rapidly to local emergencies for more than 80 years, and also bring to bear the resources of the national organization when needed during extreme, local disasters. For example, during the 2003 San Diego firestorm, at least 183 ARES Ham Communicators provided at times the only reliable communications for San Diego Fire, Emergency, Police and Red Cross.

Currently San Diego Section has at least 340 active members on its roster who regularly provide emergency communications. ARES provides primary backup communications for Marine Corp Miramar Air Base during the year and provides secondary backup communication for County Emergency Medical Services during the Miramar Air Show.

During the 2007 Fires, ARES was activated by County of San Diego Emergency Medical Services to staff the communications of all 6 major trauma centers and 16 local hospitals in the county as well as the Emergency Medical Operations Center in the City. ARES provided vital communications when some of these facilities had to be evacuated. ARES and other radio amateur organizations were activated by the Governor's Office of Emergency Services (OES) to provide telephone and data service in the East County where infrastructure was destroyed by the Harris Fire. These organizations manned the OASIS (Operational Area Satellite Information Service) trailers provided by the State, until service could be restored





## **Radio Amateur Civil Emergency Service (RACES)**

In 1953, to more effectively respond to international threats to Public Safety, Congress created the Radio Amateur Civil Emergency Service, (RACES) as a legal adjunct to the Civil Defense services as authorized by Part 97.407 of the FCC Rules and Regulations.

RACES' mission is to operate and maintain Amateur, Public Safety, and other communications systems, and to perform unique, accurate, and efficient communication services to assist government officials in the protection of life and property. In some areas of California, RACES organizations use the name ACS (Auxiliary Communications Service) instead of RACES.

San Diego County RACES is an organization of the San Diego Operational Area, Unified Disaster Council, County Office of Emergency Services (UDC/OES) and is administered by the Emergency Planning Detail, Emergency Services Division of the Sheriff's Department. RACES personnel are Ham Radio citizen volunteer employees of the County of San Diego who donate their time, personal Ham Radio equipment, training and capabilities for public service. RACES units are present at most major public events and provided vital communications at all disasters such as the 2003 San Diego Fires. RACES are one of the few Radio Communications Services empowered by the President of the United States under the War Powers Act to continue communications after a Declaration of War.

A "State of Emergency" does not have to exist or be declared to activate RACES. Every effort is made to use RACES resources as frequently as possible to maintain both personnel and equipment in a continuing state of readiness and proficiency. Any responsible government official may request RACES to assist in a special communication need. RACES and ARES provide communications during regularly scheduled events such as the Miramar Air Show in order to maintain public safety and enhance their own training. More than 100 RACES and ARES volunteers provide search and rescue communications for lost children at the Air Show. During a typical three-day show, they reunite in excess of 45 lost children, and handle communications for numerous medical and public safety emergencies.

The primary RACES station is located adjacent to the County EOC within the County Communications Center, Building 12, at 5555 Overland Drive in San Diego. It is from this facility that all incoming and outgoing information is processed for the county. The Secondary or Situational EOC is co-located at the OES on Ruffin Road. The RACES equipment there mirrors the primary EOC. A third County facility, the Bunker (Station E) in El Cajon is available for EOC operations should the need arise.

RACES operates over 30 stations throughout the County, located in various City EOC's, Fire and Police Stations, Sheriff Stations and private homes.

These stations provide communications to the County EOC and OES, Area EOC's, and between cities during a disaster. These stations are supervised by a RACES Station Manager, operating under a RACES Area Staff Officer.

In the field, RACES staff operates two official Sheriff's Department Mobile Command Communications Centers that are deployable on a 24/7 basis to any major incident site requiring communications. In addition, the RACES-1 vehicle manned by RACES Amateur Radio Volunteers provides the primary communications facility for Sheriff Operations at the annual Miramar Air Show.

RACES capability also includes a fast response communications Field Operations group, which is able to operate anywhere in the State at the request of the State Office of Emergency Services or local agencies. Based upon the California Department of Forestry's (CDF) concept of fire fighting strike teams, the RACES Field Teams are comprised of volunteer amateur radio operators who are individually capable of sustained, remote radio operations for at least 72 hours.

Within the county, this group provides communications for the Humane Society Animal Rescue Team during wildland fires, provides supplemental communications for CDF and USFS, and assists local agencies during flooding and other disaster conditions.

During the 2003 and 2007 Fires, more than 100 uniformed RACES Amateur Radio Operators voluntarily manned fixed and mobile communications centers for more than two weeks on a 24/7 basis.



## **Military Affiliated Radio System (MARS)**

Founded in 1925, the Military Affiliated Radio System (MARS) is a Department of Defense sponsored program, established as a separately managed and operated program by the Army, Navy, and Air Force.

The program consists of licensed amateur radio operators who are interested in military communications on a local, national, and international basis as an adjunct to normal communications. The Mission of MARS is:

- To provide Department of Defense sponsored emergency communications on a local, national, and international basis as an adjunct to normal communications.
- To provide auxiliary communications for military, civil, and/or disaster officials during periods of emergency.
- To assist in effecting normal communications under emergency conditions.

There are a number of MARS stations located at the homes of San Diego Hams. By the nature of the long distance communications requirement, these stations are normally equipped with larger antennas, installed at significant heights to achieve long distance communications.

In addition to Emergency Military Communications, MARS stations provide a vital Public Service Communications link for military families both locally and around the world. For example, during Hurricane Katrina and the 2003 and 2007 San Diego firestorms, MARS Stations in San Diego assisted servicemen in locating missing family members.



## **National Weather Service SKYWARN**

SKYWARN is a concept developed in the early 1970s that was intended to promote a cooperative effort between the National Weather Service and communities, by sharing information gathered using the eyes and ears of citizens. The emphasis of the effort is often focused on the storm spotter, an individual who takes a position near their community and reports wind gusts, hail size, rainfall, and cloud formations that could signal a developing tornado. Another part of SKYWARN is the receipt and effective distribution of National Weather Service information. Many amateur radio operators are active in SKYWARN in order to facilitate the exchange of critical data through reliable communications networks.

The organization of spotters and the distribution of warning information lies with the National Weather Service or with an emergency management agency within the community. This agency could be a police or fire department, or often is an emergency management/service group (what people might still think of as civil defense groups). This varies across the country, with the local National Weather Service office taking the lead in some locations, while emergency management groups may take the lead in other areas.

SKYWARN is typically not a club or discrete organization, but in some areas where Emergency Management programs do not perform the function, people have organized SKYWARN groups that work independently of a parent government agency. They feed valuable information to the National Weather Service. While this provides the radar meteorologist with much needed input, the circuit is not complete if the information does not reach those who can activate sirens or local broadcast systems. Amateur radio operators provide this link.

SKYWARN is part of a National Network of Amateur Radio Operators. Southwest California SKYWARN is an all-volunteer organization that supports the National Weather Service Forecast Office in San Diego, California. Its service area covers San Diego, Orange, Western Riverside and Southwest San Bernardino Counties. It has been active in providing warnings of flash floods and fires in San Diego. With several hundred active members, SKYWARN has been particularly active during December 2008 due to road closures and other issues from early winter storms.



## California Department of Forestry and Fire Protection

### Cal Fire Volunteers in Prevention

On July 1, 1980, CAL FIRE formally implemented, and supported with redirected funds, an innovative and creative fire prevention program called the Volunteers in Prevention (VIP) Program. A Budget Change Proposal (BCP) redirected nine fire captain specialists and 110.4 fire prevention assistant person-months, restored by Senate Bill 201 to the CAL FIRE budget for the permanent initiation of this groundbreaking fire prevention program. \$270,000 was budgeted to support the program annually.

The objectives of the VIP Program were to involve and utilize citizens and public service groups in non-salaried positions to reduce man-caused fires by ten percent within seven targeted areas: Lake-Napa, Shasta, Nevada-Yuba-Placer, Amador-El Dorado, Santa Clara, Riverside and San Diego.

Today, there are approximately 2500 VIP's statewide, in all 21 CAL FIRE Units, averaging over 60,000 hours of volunteer service to CAL FIRE. In exchange CAL FIRE pays meals and mileage for their expenses.

History has shown that when VIP teams provide fire prevention teaching in grades K-3, child-related fires in those areas have dropped by 50 percent. In addition, VIPs educate thousands of children and their parents about fire prevention by participating in fairs, displays, and parades each year. Volunteers are trained to make preliminary Wildland homeowner property inspections for fire safety as required by Public Resources Code 4291, and to discuss with homeowners ways to make their homes fire safe. These one-on-one contacts are an increasingly important education tool as the population in California's wildlands continues to grow.

VIPs are trained to assist CAL FIRE's efforts during wildland fires and other emergencies by providing information to the media and public. A specialized group of volunteers (Amateur radio operators) provide additional communication networks for CAL FIRE during emergencies including wildland fires, earthquakes, and floods.

Currently there are more than 200 Amateur Radio Operators in San Diego who have been trained by CAL FIRE. These hams provide unpaid eyes and ears on the ground by driving 'Red Flag Patrols' on every major Holiday and during Red Flag Santa Ana wind conditions. While using their personal cars, equipped with mobile ham radio gear, these San Diego Amateur Radio volunteers have been credited with spotting and reporting many local fires. In a demonstration of their dedication to public service, local Amateur Radio organizations have purchased and installed radio equipment and antenna support structures for the permanent Amateur Radio base installation at the Cal Fire Monte Vista Headquarters in San Diego.



## **Community Emergency Response Team (CERT)**

The Community Emergency Response Team (CERT) program helps train people to be better prepared to respond to emergency situations in their communities. When emergencies happen, CERT members can give critical support to first responders, provide immediate assistance to victims, and organize spontaneous volunteers at a disaster site. CERT members can also help with non-emergency projects that help improve the safety of the community.

The CERT course is taught in the community by a trained team of first responders who have completed a CERT Train-the-Trainer course conducted by their state training office for emergency management, or FEMA's Emergency Management Institute (EMI). CERT training includes disaster preparedness, disaster fire suppression, basic disaster medical operations, and light search and rescue operations.

Amateur Radio plays a vital communications role in CERT. Communication systems available to unlicensed CERT members do not have the range needed to communicate effectively beyond their limited neighborhoods, while Amateur Radio CERT members are capable of communicating virtually anywhere.

Recognizing the need for better communications, CERT San Diego has been actively encouraging its members to obtain Amateur Radio licenses, purchase radio equipment and install Antenna Support Structures at their homes. [This policy seems to be in stark contrast with the proposed restrictive antenna support structure legislation, which if passed will reduce the number of life saving antennas.]

CERT San Diego is one of the newest and fastest growing Amateur Radio emergency communications groups, officially encouraged by the City. Since its inception in San Diego in 2004, more than 800 Citizen Volunteers have been trained in CERT. More than 100 San Diego CERT members have earned their Amateur Radio licenses, and stand ready to volunteer for their fellow citizens.

<http://www.sandiego.gov/fireandems/cert/pdf/procedures.pdf>



## **San Diego County Emergency Medical Services**

Emergency Medical Services (EMS) is a Division of the Health and Human Services Agency's Public Health Services. It is the 'local EMS agency' as defined in California law. Its purpose is to ensure that the quality of emergency medical services, which includes 9-1-1 ambulance services, trauma care services, and non-emergency ambulance services, is of the highest quality. As the regulatory agency for emergency medical services, EMS certifies/accredits pre-hospital personnel and approves training programs for pre-hospital personnel; designates participants in the countywide EMS system (base hospitals, advanced life support providers, trauma centers, etc.); monitors system activity with a large data collection network; develops policies and protocols governing the delivery of emergency medical services in the county; and provides the framework for medical quality improvement activities. Additionally, it provides services within two ambulance districts (County Service Areas 17 & 69) and implements numerous community education, prevention and research projects.

Emergency Medical Operations Center (MOC) is located at 6255 Mission Gorge Road, San Diego CA 92120. The County has purchased and installed Amateur Radio equipment for the permanent Amateur Radio station at MOC. During the 2007 Fires, Amateurs from ARES staffed the MOC during the entire time it was operational and provided at times the only links to area hospitals. The MOC has purchased and is installing a large high frequency yagi antenna so that the MOC can maintain wider area communications with hospitals outside of San Diego and with the State of California Office of Emergency Service. Approximately 60 Amateurs worked with the MOC during the fires and upwards of 150 participated in regular training exercises such as "Golden Guardian". Due to the requirement to maintain communications over varied terrain and during non-optimum propagation conditions, the antenna will be installed at a reasonable height to achieve the goal.

As a result of Katrina, under the Federal Government Emergency Preparedness Regulations, all trauma centers and hospitals are required to be equipped for Amateur Radio communications in the event of catastrophic failure of normal communications channels. ARES has worked closely with MOC and area hospitals to ensure that the required Amateur Radio stations are installed, and ensure that there are enough trained Amateur Radio operators available during emergencies.

The proposed San Diego antenna restrictions would likely make it difficult if not impossible for local area hospitals to comply with Federal Emergency Regulations.



San Diego/Imperial Counties

## **San Diego/Imperial Chapter of the American Red Cross**

The vision of the American Red Cross - San Diego/Imperial Counties (SDARC) is to become America's most prepared community. We serve to relieve human suffering by preventing, preparing for, and responding to emergencies.

The Red Cross is not a governmental agency, and relies on community donations of time and money to do its work. The San Diego/Imperial Counties chapter, founded in 1898, responds to an emergency nearly every 24 hours.

The American Red Cross is guided by seven fundamental principles: humanity, impartiality, neutrality, independence, voluntary service, unity, and universality.

This chapter serves more than 3 million people in San Diego County, covering 4,255 square miles, and 150,000 people in Imperial County, covering 4,597 square miles.

The San Diego/Imperial County Chapter of the American Red Cross Amateur Radio Group has a communications group and a permanent Amateur Radio Control Room located at 3950 Calle Fortunada, San Diego, CA 92123. It is equipped with 4 VHF radios, High Frequency (HF) radio with amplifier, a packet station, a scanner for emergency information and the appropriate antennas. They have a full time connect for Automatic Position Reporting Systems and are expanding their High Frequency national radio usage with additional radios and new larger radio towers. They are in the planning stage of UHF and HF links for backcountry coverage.

SDARC now have over 50 active Radio Amateurs in the group. Of course, the Red Cross has the most extensive life saving training of any second responder group. It gives the individual a full panorama of ways to serve the community: Sheltering, Logistics, Damage Assessment, Communications, Liaison to first responders and other government agencies, spiritual care, mental health services, WIC (women infant care) and Blood Services to name a few. Citizens can become qualified to respond to disasters all over the United States and beyond. During the 2007 San Diego Fires, radio hams provided critical communications between headquarters and the 14 shelters operated by the Red Cross.

SDARC is involved almost daily in personal crises such as local house fires, finding shelter for victims and helping families deal with tragedies. A Disaster Action Team is dispatched to the scene and normally an Amateur Radio operator is one of the members of the team.





## **FIRENET – Palomar Amateur Radio Club**

Founded in 1936, PARC endeavors to serve the Amateur Radio community in San Diego County through various events and assets. Events are monthly club meetings, weekly on-air nets, and annual events such as Field Day. PARC is a very large club with county-wide impact. Our nets include the traditional NTS traffic net, emergency service nets such as Palomar, MARA, SATERN, and the Red Cross, and a number of special interest nets, such as Handi-Hams, Microwave, Off-Road, Ham Help, and the Hikers nets.

With support structures and repeaters high upon Palomar Mountain, we are able to serve the local community under almost any condition, and particularly in times of need. PARC has more than 380 current members of which a significant number are residents of the City of San Diego.

***PARC FIRENET*** – Perhaps the most effective use of Amateur Radio in San Diego during the firestorms of 2003 and 2007, was carried out by the FIRENET on the PARC Repeater systems. FIRENET was an ad hoc radio information network that came together to provide “eyes and ears on the ground” information to San Diego County residents. FIRENET was managed by Net Control Operators who operated as Official Emergency Stations of the ARRL.

In 2003 more than 300 Amateurs participated. In 2007 more than 500 Amateurs participated. FIRENET performed many vital tasks. It provided real time information of the paths of the fires, guided victims through flame and around road diversions, rescued firemen from burning trucks, guided victims to shelters, provided evacuation information, evacuated shelters and hospitals, interfaced with law enforcement to prevent looting, provided food and water to shelters, and the list goes on. Because of FIRENET’s distributed communication system, it was able to continue operations even when portions of it were destroyed by fire. Because it was so widely distributed FIRENET usually was able to obtain more timely and correct information than was available through government sources. In fact, the Hospital EMS systems stated they found the FIRENET information to be far more accurate and up to the minute than any other source.

FIRENET saved lives and property in San Diego because amateur radios and antennas were available and widely distributed.

Under separate cover, there is a written account from one of the logs of one of the Net Control Stations from FIRENET during the firestorm of 2007.



## **Governor's Office of Emergency Services**

The OES mission is to ensure the state is ready and able to mitigate against, prepare for, respond to, and recover from the effects of emergencies that threaten lives, property, and the environment.

OES coordinates the activities of all state agencies relating to preparation and implementation of the State Emergency Plan. OES also coordinates the response efforts of state and local agencies to ensure maximum effect with minimum overlap and confusion. Additionally, OES coordinates the integration of federal resources into state and local response and recovery operations.

OES accomplishes this mission through programs and outreach efforts that assist local and state government in their emergency management efforts.

Amateur Radio plays a major role at OES. Due to the fact that Amateur Radio is the most reliable communications "When All Else Fails", OES maintains a network of Amateur Radio Stations at its facilities across the State. Primary communications are normally carried on the 40 Meter (7 MHz) and 80 Meter (3.5 MHz) Amateur Radio Bands because these bands have been found to have the most reliable performance to cover the distances between San Diego and Sacramento. By the laws of physics, these bands require larger antennas and support structures.

During the firestorms of 2007, OES coordinated and provided support for telecommunications to the County of San Diego. OES officials swore numerous radio amateurs from the San Diego area as Disaster Service Workers to provide telephone and data service in the East County where the infrastructure was destroyed by the Harris Fire.

These San Diego amateur radio volunteers manned the OASIS (Operational Area Satellite Information Service) trailers, provided by the State, until the normal flow of telephone and data communications could be restored.



## **Salvation Army Team Emergency Radio Network (SATERN)**

Founded in 1988, Salvation Army Team Emergency Radio (SATERN) volunteers are amateur radio operators communicating locally or worldwide to assist in times of disaster. SATERN has about 80 members in San Diego.

The Salvation Army, for more than a century, has fought to ease human suffering wherever it is found. Perhaps none suffer more than the innocent victims of natural and manmade disasters such as earthquakes, tornados, fires or floods. The Salvation Army's capability, experience and effectiveness as a major disaster assistance agency has been recognized in the Federal Disaster Relief Act of 1974 (PL 93-288).

The Salvation Army is a partner with the Federal Emergency Management Agency (FEMA), participate in NVOAD -- the National Voluntary Organizations Active in Disaster, and with volunteer organizations (VOADS) on state and local levels.

In addition, the Salvation Army has cooperative agreements with many other agencies to support and provide relief efforts during emergencies and disasters.

SATERN members in San Diego played a vital role during Katrina by participating in Search and Rescue operations, and operating as Net Control Stations due to favorable propagation characteristics between San Diego and New Orleans on the 40 Meter Amateur Radio band.

During the 2007 firestorm, SATERN ham radio members assisted the Salvation Army in serving meals to almost 120,000 people from 9 mobile disaster canteens, and giving out \$442,150 in gift cards and vouchers to help residents replace some of what was lost in the fires. To assist residents attempting to sort through the ashes of their homes, the communicators assisted with distribution of shovels, rakes and sifters. One Salvation Army mobile canteen vehicle was destroyed in the fires.



## San Diego DX Club

The San Diego DX Club was organized more than 50 years ago for the purpose of facilitating exchange of information and general cooperation between members, to promote radio knowledge and fraternalism, to promote development of highly skilled operating techniques and individual operating efficiency, to take appropriate action on legislative matters pertaining to Amateur Radio and to conduct club programs and activities so as to advance the general interest and welfare of Amateur Radio and the radio art. There are currently approximately 80 full members of the club in San Diego. To become a full member of the club, an Amateur Radio Operator must have confirmed contacts with at least 100 different countries over the air. By the nature of the practice and message-handling skills that Club members achieve during on-the-air contests and daily activities, Club members are invariably called upon to assume the role of Net Control during emergency conditions. Club members have played life saving roles during the Mexico Earthquake, the Indian Ocean Tsunami, Hurricanes Ivan, Katrina and Rita, and of course, the 2003 and 2007 firestorms.

Every year on the fourth full weekend in June, the American Radio Relay League, the National Association for Amateur Radio, holds its annual Emergency Preparedness Drill Weekend – known as Field Day. Using only emergency power supplies, Amateur Radio Operators construct emergency stations in parks, shopping malls, schools and back yards all over the USA. Their slogan, "When all else fails..." is more than just words to the hams as they prove they can send messages in many forms without the use of phone systems, internet or any other infrastructure that can be compromised in a crisis. More than 34,000 amateur radio operators across the country participated and trained in last year's event.

Of particular note, the San Diego DX club has over the past decade "scored" the highest numbers of on-air contacts in its category during the Field Day simulated emergency, over the 27 hours of the event, according to ARRL official records. In real emergency circumstances skilled Club members likely can handle more message traffic than any other amateur radio groups, due to their intense training. The Club is proud of the fact that they have the technical and operator resources here in San Diego, equal to or better than others in the rest of the country. This contributes significantly to the overall emergency preparedness of San Diego.



## **San Diego County Amateur Radio Council (SANDARC)**

Incorporated on August 11, 1958, the San Diego County Amateur Radio Council (SANDARC) is a confederacy of 14 different amateur radio clubs. It exists to serve the needs of the San Diego ham radio community. SANDARC is comprised of member clubs dedicated to the advancement of amateur radio throughout San Diego County. SANDARC Membership includes more than 2,220 radio Amateurs. The needs of amateurs are served by many activities supported by SANDARC, including:

- Volunteer Examiner Program support, through SANDARC-VEC, which hosts licensing examinations nearly every weekend of the year, in cooperation with the Federal Communications Commission. The exam fee is only \$5 to cover materials and at most sites walk-ins are welcome.
- Various local events which include an "Amateur Radio Booth" at the Del Mar Fair, and the "ARRL Ham Radio Roundup," an event that is held at Hillside Park in Rancho Penasquitos with the public in mind.
- Supports the local community by the purchase of Radio Amateur Licensing and Training Books, donated said books to ALL San Diego Public Libraries.
- Support for CAL FIRE through the purchase of Radio Equipment and Towers for Monte Vista Headquarters.
- In conjunction with ARRL, SANDARC sponsors a convention every fourth year. SANDARC sponsored the 2006 convention and will be sponsoring the 2010 convention bringing Hotel and Convention Revenues to San Diego from the more than 2,000 expected attendees.
- The Convention visitors require at least 1,000 hotel room-nights and yield direct economic benefit of approximately \$150,000 in Convention related business to the City of San Diego.

One of SANDARC's primary missions is to protect amateur radio community interests where governments may become involved in adopting overly restrictive ordinances which could affect antenna installations. In 2005, SANDARC established a Legislative Oversight Committee to detect and review potentially harmful legislation, and has established a Legislative Oversight Fund. With its large membership of active Radio Amateurs, SANDARC is an important player in protecting amateur radio (and Emergency Response agencies) from potentially harmful ordinances that may affect antenna support structures.



## **Animal Rescue Reserve**

The ARR is a volunteer-based program of the San Diego Humane Society and SPCA's Investigations Department. The ARR's team of trained experts is dedicated to assisting people during disasters and emergency situations by safely evacuating their horses, livestock, and domestic pets.

The ARR is recognized as part of San Diego County's official Disaster Team and they work in conjunction with the Department of Animal Services during county emergencies.

More than 30 Amateur Radio Operators provide primary communications for the program. During the 2003 and 2007 firestorms, ARR volunteers rescued animals from all over the county.

Of particular note is that during the 2007 firestorm, an Amateur Radio Operator driving his own rescue vehicle was able to save the last remaining 24 of 27 of a rare bird species.

ARR provides rescue not only during major incidents but all through the year. As recently as December 18, 2008, Animal Rescue Reserve helped to save the lives of approximately 50-60 horses. Animal Rescue Reserve continues to be on-call 24-hours a day, 7-days a week to assist animals and their owners in emergency situations. The Amateur Radio communicators who supply the network links for coordination of these activities are among the most dedicated of radio volunteers.



## ARRL Official Emergency Stations

Amateur operators may be appointed as an Official Emergency Station (OES). The OES appointee must be an ARRL member and set high standards of emergency preparedness and operating. The OES appointee makes a deeper commitment to the ARES program in terms of functionality than does the rank-and-file ARES registrant.

The requirements and qualifications for the position include the following: Full ARRL membership; experience as an ARES registrant; regular participation in the local ARES organization including drills and tests; participation in emergency nets and actual emergency situations; regular reporting of activities.

The OES appointee is appointed to carry out specific functions and assignments such as managing Emergency Networks as Net Controls. During drills and actual emergency situations, the OES appointee will be expected to implement his/her function with professionalism and minimal supervision.

Functions assigned may include, but are not limited to, the following four major areas of responsibility:

**OPERATIONS** – Responsible for specific, pre-determined operational assignments during drills or actual emergency situations. Examples include: Net Control Station or Net Liaison for a specific ARES net; Manage operation of a specified ARES VHF or HF digital BBS or MBO, or point-to-point link; Operate station at a specified emergency management office, Red Cross shelter or other served agency operations point.

**ADMINISTRATION** – Responsible for specific, pre-determined administrative tasks as assigned in the initial appointment commitment by the presiding ARES official. Examples include: Recruitment of ARES members; liaison with Public Information Officer to coordinate public information for the media; ARES registration data base management; victim/refugee data base management; equipment inventory; training; reporting; and post-event analysis.

**LIAISON** – Responsible for specific, pre-determined liaison responsibilities as assigned by the presiding EC or DEC. Examples include: Maintaining contact with assigned served agencies; Maintaining liaison with specified NTS nets; Maintaining liaison with ARES officials in adjacent jurisdictions; Liaison with mutual assistance or "jump" teams.

**LOGISTICS** – Responsible for specific, pre-determined logistical functions as assigned. Examples include: Transportation; Supplies management and procurement (food, fuel, water, etc.); Equipment maintenance and procurement-- radios, computers, generators, batteries, antennas.

**MANAGEMENT ASSISTANT** – Responsible for serving as an assistant manager to the EC, DEC or SEC based on specific functional assignments or geographic areas of jurisdiction.

**CONSULTING** – Responsible for consulting to ARES officials in specific area of expertise.

OES appointees may be assigned to pre-disaster, post-disaster, and recovery functions. These functions must be specified in the OES's appointment commitment plan.

The OES appointee is expected to participate in planning meetings, and post-event evaluations. Following each drill or actual event, the EC/DEC and the OES appointee should review and update the OES assignment as required. The OES appointee must keep a detailed log of events during drills and actual events in his/her sphere of responsibility to facilitate this review.

Because of both the expected time commitment and the rather large capital expenditures required to construct an OES station capable of reliable High Frequency Long Distance Communications, there are only 14 OES appointees in San Diego. However in spite of their small numbers, these OES appointees acted as the primary Net Controls for most of the Radio Networks during the 2003 and 2007 firestorms. During Katrina, San Diego OES stations remotely helped direct the rescue of a trapped policeman in New Orleans.





## Winlink 2000 Systems

Winlink 2000 (WL2K) is a worldwide system of volunteer resources supporting e-mail by radio, with non-commercial links to Internet e-mail. These resources come from Amateur Radio, the Military Affiliate Radio Systems (MARS), and other volunteer organizations. The system provides valuable service to emergency communicators, and to licensed operators without access to the Internet. The Winlink Development Team (WDT) is committed to continuous improvement using the most efficient and effective radio modes and protocols for local, regional and long-distance applications, together with modern computer and networking technology.

To use the Winlink 2000 system, you must hold an Amateur Radio license or be a member of a supported organization or agency. Use of the system and all software is free of charge for those who qualify.

Winlink 2000 is an all-volunteer, non-profit project of the Amateur Radio Safety Foundation, Inc. It functions only through donations and the unselfish efforts of hundreds of Amateur Radio operators around the world.

San Diego has played a major role in the development of Winlink. Currently, one of the four hardened, worldwide Central Message Servers is located in San Diego at Qualcomm. The San Diego Yacht Club supports the major West Coast High Frequency Winlink Base Station system with a Secondary system located in Rancho Santa Fe.

Winlink is actively available as a backup Email system at all 6 major local trauma centers, 16 local hospitals, County Medical Operations Center, County Emergency Operations Center, State OES and MCAS Miramar.

Winlink has been used extensively for search and rescue operations that typically find 45 or more lost children at Miramar Air Show each year.



## National Traffic System (NTS)

The National Traffic System was developed by ARRL and is almost as old as radio itself. The plan, updated through technological improvements, is a standardized framework for systematizing amateur radio message traffic handling. This provides a network (net) structure for integrated message traffic facilities designed to achieve two principal objectives: rapid movement of traffic from origin to destination; and training amateur operators to handle written traffic and participate in directed nets. These two objectives, while maintaining speed and accuracy, are the underlying foundations of the National Traffic System. NTS operates daily, even continuously with the advent of the advanced digital links of today.

The personnel consist of operators who participate for one or two periods a week and some who are active daily. The National Traffic System is an organized effort to handle traffic in accordance with a plan that is easily understood, is basically sound, and which employs modern methods of network traffic handling in general acceptance today.

NTS is not intended as a deterrent or competition for the many independently-organized traffic networks. When necessitated by overload or lack of outlet for traffic, the facilities of such networks can function as alternate traffic routings where this is indicated in the best interest of efficient message relay and/or delivery.

One of the most important features of NTS is the "system concept." No NTS net is an independent entity that can conduct its activities without concern for or consideration of other NTS nets. Each net performs its function and only its function in the overall organization. Nets may sometimes find it necessary to adopt temporary expedients to ensure the movement of traffic, and this is considered improper operation only when no attempt is made to return to the normal schedule. Nevertheless, improper operation of any NTS net is the concern of all NTS nets, because coordination and timing between nets is critical. Every effort is made to assist in returning any non-functioning or improperly functioning net to its normal operation.

Over 100 Amateur Radio stations in San Diego participate regularly in the NTS. This service is particularly popular with San Diego's physically challenged Amateur Radio Operators who see the system as a way to give back to the community. The long distance nature of this service typically requires the use of larger High Frequency antenna systems.



## **REACT International**

Radio Emergency Associated Communications Teams (REACT) is a non-profit, public service organization providing communications to civic events and to local authorities during times of emergency. Founded in 1962, the local REACT has more than 110 members in San Diego.

### **REACT OBJECTIVES**

1. To assist in any emergency by furnishing radio communications in cooperation with authorities and other volunteer organizations.
2. To practice and encourage operating excellence through skilled communications techniques.
3. To maintain equipment at peak efficiency and operate in accordance with all government regulations.

### **REACT COOPERATION**

Teams participate in their communities' disaster preparedness plans through cooperative agreements with the [American National Red Cross](#), the [Salvation Army](#), and the [National Weather Service](#). Full text of these agreements is available for reading, by clicking on the appropriate link for each agency.

In addition, REACT International is a participating member of [National VOAD](#) (Volunteer Organizations Active in Disasters). Many of our State Council organizations and local Teams are also members of their State or sub-state chapters of VOAD.

Of particular note is that REACT provides the Primary Communications for the Mission Bay Thunder Boat Races every year. This world-renowned event brings thousands of spectators to San Diego every year.



## San Diego Repeater Association WB6WLV W6GIC

Providing Service to San Diego Hams since 1968



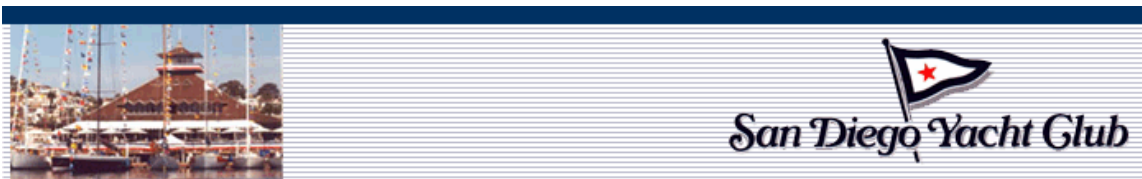
### **San Diego Repeater Association**

Founded in 1968, The San Diego Repeater Association (SANDRA) provides free-of-charge Amateur Radio repeater coverage to all hams in San Diego and Imperial Counties as well as portions of Baja, California.

SANDRA maintains radio repeater sites in the City of San Diego, and on four different local mountain peaks. Over the past 40 years, SANDRA has built up several hundred thousands of dollars of radio infrastructure, paid for by its volunteer users and maintained for the public good, as critical emergency communications system backup in time of public need.

SANDRA is dedicated to providing reliable, open repeaters for the Amateur Radio community. SANDRA has approximately 800 members in San Diego County. SANDRA uses its annual membership revenue to build, construct and maintain one of the widest area coverage radio repeater systems in the USA. These systems are entirely membership supported and receive no financial support from any government agency.

During the firestorms of 2003 and 2007, in spite of the fact that several SANDRA mountaintop repeater sites were destroyed by fire, other SANDRA repeaters continued to provide vital communications support to Fire, CAL FIRE, CAL OES, Red Cross and Salvation Army. SANDRA has subsequently rebuilt the destroyed stations using its own funds at no cost to the City of San Diego.



## San Diego Yacht Club Amateur Radio Group

In 1886 a group of local boating enthusiasts joined together to found what has become a cornerstone yacht club in the annals of American yachting. San Diego Yacht Club's facilities had humble beginnings in a number of locations, including an old ferry boat. SDYC has been at its present location on Point Loma since 1924. Its facilities operate year round and include 576 boat slips, dry storage for 161 boats, tennis courts, a swimming pool, picnic areas, a full service dining room, bar, banquet facilities, snack bar (summer only), gift shop, and an internationally renowned year-round Junior Program. Two-thirds of the members own boats. One hundred employees maintain the Club facilities to serve the membership and their guests.

Amateur Radio plays a vital role for long distance reliable communications on modern sea going yachts. As a result many members of the SDYC have obtained their Amateur Radio Licenses and have equipped their vessels with long distance High Frequency Amateur Radio Equipment. The SDYC Amateur Radio Group has over 130 members.

In recent years, through technical innovations pioneered in San Diego under a system know as Winlink (described earlier in this document), it has become possible to use sea-going Amateur Radio to send and receive Email, weather maps, weather reports, and vessel position reports over very long distances. This is accomplished by establishing larger, High Frequency base stations ashore, which can communicate by radio with the yachts or ships at sea, providing interface for them to and from the Internet.

SDYC is proud of the fact that its station, W6IM, is the primary West Coast link for the Winlink Network and handles much of the Eastern and Southern Pacific Radio Communications for the system. SDYC's Winlink systems provided much of the Email over Amateur Radio Communications during the Indian Ocean Tsunami as well as for Hurricanes Ivan, Rita and Katrina. Time and time again, SDYC's Winlink systems have been used in Sea Rescues and the tracking of lost vessels. Many lives have been saved because of this system, maintained and operated by volunteer ham operators, at no expense to the government.



## **United States Coast Guard Air Auxiliary – Flotilla One**

Flotilla one, Division one has twenty members at this writing and is always looking to expand membership with people who will volunteer some time for training, and qualify to participate in one or more of the United States Coast Guard Auxiliary's missions. Amateur Radio is an important part of this group.

The USCG Auxiliary actively promotes maritime, and other, activities for the good of its members and the Public at large.

The San Diego group's members are currently active in teaching classes, performing vessel safety checks, participating in surface and air patrols, helping high school students apply to the Coast Guard Academy, working at events such as the Miramar Air Show, public affairs, manning emergency radio networks, Homeland Security tasks, training to qualify in new jobs and running the day-to-day business of the Flotilla and the Auxiliary.

The Flotilla conducts Amateur Radio Classes for its members and encourages all members to become license Amateur Radio Operators so that they can communicate most effectively during emergencies.

# Coronado Emergency Radio Operators (CERO) Inc.

## **Coronado Emergency Radio Operators Inc.**

Incorporated in 2004, Coronado Emergency Radio Operators Inc (CERO) is a 501(c)(3) Public Benefit Corporation that provides communications support to the City of Coronado Fire Department and their Coronado CERT Teams. CERO has 60 CERT trained members.

In addition to public donations, CERO is funded annually directly from the City of Coronado Budget to support the purchase, repair and maintenance of a sophisticated Amateur Radio Repeater System located on the top of the Coronado Shores Apartment Towers. These systems are used by CERO public safety efforts on behalf of the people of Coronado such as Mutual Aid Assistance to the Lifeguards during major holiday weekends, parades, and civic events, and are Primary Emergency Communications systems for CERT Teams.

During the firestorms of 2003 and 2007 several major Amateur Radio Repeater Systems either burned in the fire, or became overwhelmed with emergency traffic. Using Mutual Aid Agreements with San Diego ARES, the Coronado Repeater Systems were dedicated to supporting Emergency Medical Communications with the Medical Operations Center, Balboa Naval Hospital, Sharps Hillcrest, UCSD Hillcrest, Sharps and Children's Hospitals.

CERO also supplied Amateur Radio Operators to the State of California OES for two weeks after the fires so that the State could restore temporary phone services in Southern San Diego.



## **California Amateur Radio Emergency Services Network (CARES)**

The CARES Radio Network is composed of a network of High Frequency Amateur Radio Stations with dedicated operators that support the State Health and Welfare Agency disaster response program. The system started with the SHARES (State Health Amateur Radio Emergency Services) stations in Los Angeles and Berkeley when the State Department of Health headquarters was located in Berkeley. The Department of Social Services started the CARES (California Amateur Radio Emergency Services) Amateur Radio station in Sacramento in cooperation with the Department of Health Services, and in 1989, the CARES-SHARES stations were combined under the umbrella name of CARES.

CARES in San Diego uses complete HF field radio stations, VHF- UHF field stations, all with both voice and digital capability, and a supply of Ham Radio Hand-Held Radio Units. CARES is fully supported by the participating State medical and health departments listed below, and integrated into their response plans. CARES is part of the initial deployment of State resources to a disaster area, and will be present at all major medical and health response locations.

While the CARES Amateur Radio system is organizationally a sub-set of the State ACS (Auxiliary Communications System) system and is covered as an appendix to the State's Emergency Communications Plan, direct management of CARES is exercised by the Emergency Coordinators in the State Health and Welfare Agency departments through the CARES Radio Officer. In addition to the OES Headquarters and Regional Amateur Radio stations, State Agencies such as Caltrans and General Services (Communications, State Police) have developed similar Amateur Radio backup communications systems.

During the 2003 and 2007 San Diego Fires, High Frequency CARES Amateur Radio stations in San Diego coordinated communications between Sacramento and San Diego for the California Emergency Medical Services Authority.





## Point Loma Amateur Radio Club

The Point Loma Amateur Radio Club (PLARC) was organized in 1957 by members of the U.S. Navy Electronics Laboratory (NEL). The club is based in San Diego, and throughout its history it has primarily been comprised of amateur radio enthusiasts from U.S. Navy organizations in Point Loma -- mostly civilian Department of Defense employees.

The club operates on a wide variety of amateur radio (ham) bands, from HF through VHF and UHF. Over the years, club activities have included contests, disaster preparedness drills, and plenty of simply social radio contacts. The FCC assigned call sign for the club is W6RDF. This call sign is used for all transmitters operating at the club's station or "shack".

Of particular note is the fact that PLARC has made a significant capital expenditure by installing an extensive Amateur TV repeater system on the peak of Point Loma Site, at no cost to San Diego or the general public.

This TV repeater system allows Amateur Radio Operators to transmit real time television signals from any disaster area in San Diego to local Fire, Medical and Police Authorities. The system has been used in FEMA drills and public safety demonstrations by local fire and rescue authorities, and is expected to become a significant tool in the Emergency Communications arsenal.



## Boy Scouts of America – K6BSA

For the past 51 years, San Diego Amateur Radio Operators have played a significant role in the Boy Scouts of America Jamboree. The Jamboree-on-the-Air, (JOTA), is an annual Scouting and amateur radio event sponsored by the World Scout Bureau of the World Organization of the Scout Movement. Thousands of amateur radio stations around the world participate.

Every year approximately 500,000 Scouts and Guides around the world in more than 150 countries participate. If the conditions are right, it is quite common for the on-site ham radio station to contact a hundred different Scouting countries during the Jamboree weekend.

In the United States, Cub Scout dens and Boy Scout patrols may visit a local Amateur Radio Operators “Shack” during JOTA. Many districts and councils hold events that coincide with JOTA, where amateurs set up temporary stations at places such as Scout campgrounds, giving Scouts and leaders a chance to exchange greetings with Scouts from other areas. No doubt, many Scouts first exposed to Amateur Radio technology during JOTA have become licensed and gone on to careers in the communications field, to the benefit of themselves and the Public.

This event has been sponsored by the World Organization of the Scout Movement for 48 hours on the third full weekend of October, for the last 51 years. That is more than a half-century of goodwill greetings by Scouts over ham radio.

In San Diego, Boy and Girl Scouts (age 11-18), Cub and Brownie Scouts (age 7-10), and Venturers (age 16-20) visit the homes of Amateur Radio Operators and use those Operator’s radio stations to contact and converse with other Scouts (youth) and Scouters (adult leaders) over shortwave radio. This promotes goodwill and understanding, and gives an appreciation for the “magic” of wireless communication.

Any proposed restriction detrimental to antenna efficiency or performance would severely hamper the ability of local Scouts to contact other Scouts around the world, by diminishing the number of successful Amateur Radio stations available.



## **Mercury Amateur Radio Association**

The Mercury Amateur Radio Association (MARA) was previously associated with the Church of Jesus Christ of the Latter-Day Saints to provide communications for their members in time of emergency.

MARA is now made up of independent groups of amateur radio operators across North America who happen to be members of the LDS Church, along with others sharing a common interest.

There are over 200 MARA members in San Diego. During the firestorms MARA members provided important communications assistance to the public at various shelters and at LDS facilities, at no cost to the City or County governments.

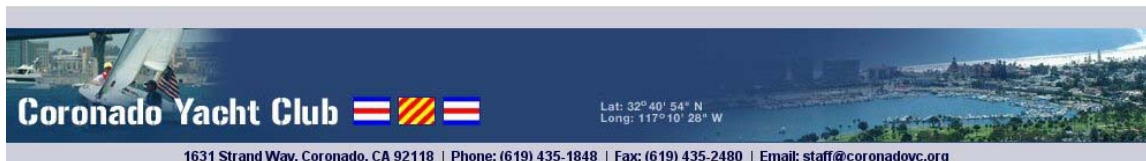


## South Bay Amateur Radio Society

SOBARS is an active ham radio club with about 60 members from San Diego, National City, La Mesa, Chula Vista, Imperial Beach, Bonita and San Ysidro, California.

Of particular note is the fact that SOBARS members assisted in the financing, design and construction of a Emergency Communications Mobile Command Trailer for the City of Chula Vista and regularly provide most of the manpower to staff the vehicle.

This Amateur Radio operator-staffed vehicle was used extensively as a Command Center during the San Diego 2007 firestorms by public authorities to provide needed communications when cellular and telephone networks were damaged by the fires.



## Communication Operations Personnel Evacuation (COPE)

Coronado Yacht Club was founded initially in 1913, but was short-lived due to World War I. The second beginning took place April 23, 1932, when six Coronado yachtsmen leased a wing of the Hotel del Coronado Boat House and invited new members to join.

Communications Operations Personnel Evacuation (COPE) is comprised of more than 50 Amateur Radio members of the Coronado Yacht Club who have signed up to transport people on their boats if a disaster should occur. COPE participates twice yearly in drills with San Diego and Coronado Fire Departments to practice evacuations from Coronado Island.



## **Marine Corps Air Station Miramar**

Every year the Marine Corp Air Station (MCAS) Miramar sponsors the Miramar Air Show with more than 750,000 people in attendance over the three-day show. Amateur Radio Operators working as RACES and ARES play a major public safety role at the Show, in close coordination with Show organizers.

RACES provides the entire manpower for the San Diego County Sheriff's Department RACES-1 Mobile Command Center located at the Base, and staffs the County Emergency Operations Center. RACES has primary responsibility for Search and Rescue for missing children at the Air Show. RACES and ARES Search Teams typically find about 45 missing children every year.

In addition, ARES mans its own Mobile Command Center to provide primary backup communication with the County Emergency Medical Operations Center and 9 local area hospitals and trauma centers. Each year, the ARES team has assisted with a number of medical emergencies at the show.

In addition, ARES has been designated Emergency Medical Services backup communications for MCAS Miramar and regularly participates in the annually required Navy Mass Casualty Disaster Preparedness Drill on Base.

ARES performance during the disaster drills has been rated so highly by the Marines that in 2006, the Marines purchased and installed a full set of permanent amateur radio station equipment and antennas for their control tower and Emergency Operations Center.

While San Diego antenna restrictions may not be applicable on MCAS Miramar, they will severely harm the ability of the Marines and their volunteers to communicate with the required emergency agencies whose antennas would be restricted.