



# County of Orange RACES NET CONTROL



October 2000

Newsletter of the County of Orange Radio Amateur Civil Emergency Service

## City/County Drill

by: Lt. Mike Krueger N6MIK  
OCRACES  
Training Officer

The City/County RACES Drill is coming up October 7th. This yearly exercise encourages each participating RACES group to activate their EOC for testing equipment and procedures. In addition to activating our RACES room at Loma Ridge to accept and disseminate traffic from other groups, OCRACES will also estab-

lish a "local" scenario and establish a "remote" site in the lower parking lot at Loma Ridge.

The drill runs from 0800 to 1100.

Our goal is to have every RACES group in Orange County participate, along with Northern Nevada Amateur Radio Service, State OES, HDSCS and RACES groups from surrounding counties. With this level of participation, we are sure to have plenty of radio traffic.

More Information is available on the OCRACES web page, at:

[www.ocraces.org](http://www.ocraces.org) .

Check it out!

## October Meeting

The Monday, October 2, 2000 OCRACES general meeting will be held at the usual 840 N. Eckhoff Street location. Our guest speaker is Scott Ward from Verizon Wireless. Scott will talk about the components of a cellular system and the special emergency response program that Verizon uses to support public safety during times of emergency or disaster.

This is an open meeting and anyone interested in learning more about how a cellular telephone system functions is encouraged to attend. The meeting starts at 1930 hours.

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## Upcoming Events

October 2	OCRACES General Meeting, 1930 hours, Eckhoff
October 7	City/County RACES Drill, 0800-1100 hours
October 21	Scouts on the air (JOTA), 0900-1600 hours
November 6	OCRACES General Meeting, 1930 hours, Eckhoff
November 9	Statewide EMS Disaster Exercise
December 4	OCRACES General Meeting, 1930 hours, Eckhoff
January 8	OCRACES General Meeting, 1930 hours, Eckhoff

## Captain's Corner

by: Ray Grimes, W6RYS, Chief Radio Officer, OCRACES

OCRACES has had a banner month, starting with training on the new 800 MHz CCCS (Countywide Coordinated Communications System) portable radios (or packsets). A special thanks to Robert Stoffel and Marten Miller for their considerable effort in preparing this "hands on" radio operations training class at our September meeting. Useful documentation was distributed to OCRACES personnel, which included the Fire Communications Handbook, the Law Enforcement Communications Handbook, the Sheriff-Coroner Law Enforcement Communications Handbook, and the handy Astro XTS3000 Portable Radio information quick guide. OCRACES has now had sufficient training and use of the 800 MHz radio equipment to be able to interact with most any agency in providing professional public safety communications using the most current equipment.

Operation Boysenberry III, the OCRACES and Orange County Sheriff's Reserve Search and Rescue Unit mutual aid exercise, was considered by most everyone as a great success. A very special thanks to Lt. Mike Krueger for his technical expertise, hard work, and creativity in helping to coordinate and produce one of the most extensive mutual aid training exercises OCRACES has ever participated in. Equal thanks to Lt. Steve Riches, N6SOG, of the OCSD Search and Rescue Reserve Unit for his participation and contribution in the creation and administration of this realistic multi-faceted field training exercise. Our appreciation extends to all who assisted in making this a fun and valuable learning exercise, from Sgt. Willy Moreno who responded Code 3 with dinner, to OCRACES member and KBF (Knott's Berry Farm) employee Roger Woodcock, KF6CJJ, and to all of our friends from various OCSD Reserve units and those individuals from several neighboring RACES groups who acted as "bad guys and gals", "confused and missing persons", and scenario evaluators. We of course, want to recognize and thank our gracious hosts at Knott's Berry Farm for repeated use of their wonderful theme park. OCRACES members are invited to submit their comments and critique to myself and Robert Stoffel, with any suggestions as to how Operation Boysenberry IV next year may be bigger and better (fries with the hamburgers, Boysenberry pie, etc.?).

I had the honor of being asked to participate in the design and specification of the Orange County Sheriff's Mobile Command and Communications tractor/trailer vehicles, with respect to OCRACES operations. The department is presently writing a RFQ (request for quotation) to purchase two 53 ft. tractor/trailer rigs which will be used together or separately for disaster and major emergency operations. OCRACES will have a presence in the Communications vehicle. This vehicle offers an emergency communications center substitute for Control One. OCRACES will have dispatch positions which will include public safety radios, amateur radios, and ATV. The Command vehicle will serve as a Sheriff's Department field headquarters and planning center for major incidents. There will be media hookups and TV sets within, and a large plasma television screen on one outside wall for media announcements, briefings, and public relations. These vehicles do not fulfill or replace the OCRACES mobile requisition, but assures our presence and purpose in the new Sheriff's emergency response plan.

## Emergency Services Web Sites

<a href="http://www.oes.ca.gov">http://www.oes.ca.gov</a>	Calif. Office of Emergency Services
<a href="http://www.simeon.org.CSTI_Home.html">http://www.simeon.org.CSTI_Home.html</a>	CSTI (Calif. Specialized Training Institute)
<a href="http://www.redcross.org/">http://www.redcross.org/</a>	American Red Cross - National
<a href="http://www.fema.gov/">http://www.fema.gov/</a>	FEMA great kids section! (Fed. Emerg. Mgt. Agency)
<a href="http://quake.usgs.gov/">http://quake.usgs.gov/</a>	US Geological Survey Earthquake Information
<a href="http://www-socal.wr.usgs.gov/">http://www-socal.wr.usgs.gov/</a>	US Geological Survey Pasadena
<a href="http://www.kfwb.com/">http://www.kfwb.com/</a>	Latest KFWB News
<a href="http://www.nwsla.noaa.gov/">http://www.nwsla.noaa.gov/</a>	LA Weather
<a href="http://www.disastercenter.com/">http://www.disastercenter.com/</a>	Commercial site with information
<a href="http://www.consrv.ca.gov/">http://www.consrv.ca.gov/</a>	Department of Conservation
<a href="http://www.disasterplan.com/">http://www.disasterplan.com/</a>	Contingency Planning & Recovery (commercial site)
<a href="http://www.lifelink.com/famplan.htm">http://www.lifelink.com/famplan.htm</a>	Commercial site with information
<a href="http://TheEpicenter.com/emerg.html">http://TheEpicenter.com/emerg.html</a>	Emergency Related Web Sites (commercial)
<a href="http://www.scecdc.scec.org/">http://www.scecdc.scec.org/</a>	Southern California Earthquake Center

**Meetings:**

General: First Monday of Month  
(open to public) @ 1930 hr

**Meeting Location:**

OCSD/Communications  
840 N. Eckhoff St. Suite 104  
Orange, CA 92868-1021

**County RACES Frequencies:**

6 m: 52.62 MHz output, 52.12  
MHz input, 103.5 Hz PL

2 m: 146.895 MHz output,  
146.295 MHz input, 136.5 PL;  
(primary net Mondays, 1900 hrs)

2 m: Packet: 145.07 MHz  
(1830 - 1900 hours)

1.25 m: 223.76 MHz output,  
222.16 MHz input, 110.9 Hz PL

70 cm: 449.180 MHz output,  
444.180 MHz input, 107.2 Hz  
PL (private)

**OCRACES Web Page:**

<http://www.ocraces.org>

**OCSD/Communications**

OCRACES Program Coordinator  
Robert Stoffel, KD6DAQ  
(714) 704-7919

Chief Telecomm. Engineer  
Gary Gray, W6DOE  
(714) 704-7911

OCRACES Chief Radio Officer  
Ray Grimes, W6RYS  
(562) 594-0065

Assistant Chief Radio Officer  
Ken Mirabella, KM6YH  
(714)990-6656

Assistant Radio Officers  
Jim Carter, WB6HAG  
Mike Krueger, N6MIK  
Joe Selikov, KB6EID  
Steve Sobodos, KN6UX

Sergeants  
Jack Barth, AB6VC  
David Boehm, N6DSB  
John Roberts, W6JOR  
David Wilson, KE6AFR

**NET CONTROL Editor:**

Robbe Gibson, K6RAG  
(714)637-3288  
[k6rag@ocraces.org](mailto:k6rag@ocraces.org)

## Did You Know?

### **ARRL Announces New Emergency Communications Web Site**

by: Capt. Ray Grimes, W6RYS  
OCRACES Chief Radio Officer

The ARRL has announced their new Emergency Communications web site which may be found at [www.arrl.org/field/emergency](http://www.arrl.org/field/emergency). This site has a number of useful links for obtaining emergency weather and news information, plus connections to other useful ham radio sites.

### **Gary Gray, W6DOE Honored**

by: Robert Stoffel

The Association of Public-Safety Communications Officials (APCO) International presented its prestigious Art McDole Award to Gary Gray, W6DOE, Chief Telecommunications Engineer with OCSD/Communications. APCO is the world's oldest and largest public safety communications association. Its more than 15,000 members represent every type of public safety organization, including law, fire, 9-1-1- centers, emergency medical services, forestry, military and government agencies. The award was presented August 17th at the International APCO Conference & Exposition in Boston. The Art McDole Award is given to those who excel in the technical areas of the profession.

*Gary Gray cont'd on pg. 5*

## Visual Communications

*Coordinator:* Jim Carter WB6HAG

*Web Page:* <http://www.qsl.net/wb6hag/>

**SSTV NET** – This net is scheduled on the second Monday of each month at 1920 hours on our OCRACES 449.180 repeater. To date, this net has provided training in using Kenwood's VC-H1 Communicator and other PC software to receive SSTV signals. This past month we experimented with different SSTV formats and identified which ones provide best picture quality, VC-H1 equipment limitations, and we reviewed Kenwood's newly designed visual communicator specifications. We invite anyone interested in learning about SSTV to join us on the second Monday of each month.

**Anaheim Drill** – ATV/SSTV is to be used during the September 28<sup>th</sup> Mass Casualty Drill in Anaheim. This is our first event in using both SSTV and ATV simultaneously. This exercise will prove beneficial in understating which mode is better received by public safety personnel. Next month we will share our experiences learned.

**Palm Springs** – The City of Palm Springs has requested an SSTV presentation in their city. Presently, we are trying to confirm a date in November.

## **800 MHz Propagation Wonders**

by: Ray Grimes, W6RYS  
Chief Radio Officer, OCRACES

Most of us are quite familiar with how our favorite HF and VHF radio bands behave and how far we can reliably talk. As we venture into 800 MHz as with the new Orange County CCCS system, a discussion of upper region UHF propagation may be helpful, and to some, surprising. As we go higher into the VHF and UHF regions, radio waves act more and more like light waves, bending, reflecting, absorbing, and scattering. For the most part, line-of-sight free-space transmission at these frequencies is very reliable and repeatable. Long-haul transmission is another story however, with 800 MHz acting much like the HF bands, complete with DX propagation.

For distances of 30 to 40 miles, 800 MHz acts about the same day to day, producing similar coverage over a defined area of operation. 800 MHz exhibits very short multipath fade periods which sounds like a crackling noise in the audio background as opposed to the slow fades experienced at lower bands. 800 MHz signals are greatly attenuated or stopped by obstructions such as dense buildings; thick, moist foliage; or metallized window coverings. Most of the 800 MHz coverage we enjoy is by virtue of multipath, with signals bouncing off most any reflective surface. 800 MHz in-building paging or portable coverage can be quite good thanks to considerable multipath throughout rooms and hallways. In-building coverage can also be enhanced through reradiation on building wiring such as telephone and electrical circuits.

Long-haul propagation at 800 MHz can occur over distances of 500 miles or more. The most common 800 MHz DX phenomenon is by virtue of tropospheric scatter. At altitudes upwards of 6000 ft. there is often a boundary layer where air density and temperature abruptly changes. This condition is most pronounced over large bodies of water and across long valleys or desert floors where the surface is uniform. Where the air temperature and density changes, there is a difference in dielectric constant of the transmission medium. Radio waves at UHF and microwave frequencies are reflected or refracted back toward the earth, traveling long distances along these radio skyways. There are a number of similar DX effects at 800 MHz and microwave frequencies caused by somewhat different conditions. Smoke can also produce an inversion layer as it rises. This could explain occasional difficulties with 800 MHz communication in remote forest fire areas.

Most of these propagation conditions vary with time of day and temperature. As the earth cools off at night across a uniform earth surface, thermal ducting occurs with amazing regularity (these conditions will only occur on clear nights with relatively low humidity and no cloud cover). Radio sites on tall mountains experience these propagation anomalies much more frequently than surface located sites. Inversion conditions can occur below the site from stratus cloud cover, causing signals directed at the ground to reflect or refract along the cloud deck top for hundreds of miles.

Antenna behavior at 800 MHz and above is unique also. The good news is that physically small antennas can offer relatively high gain. A surprising result of a test made some years ago suggested that mobile gain antennas on vehicles within a few miles of a tall mountain-top site didn't work as well as a simple quarter wave whip antenna. Upon thinking further about this, it makes sense in that high gain antennas on mountain tops may overshoot the surface immediately around a site, illuminating the surrounding hills. Multipath is the effect of reflected signals, which arrive at the mobile antenna at all angles. The gain antenna compresses the signal toward the horizon and doesn't make good use of high angles of signal arrival.

When using a 800 MHz portable, consider the position of the antenna (keep it vertical) and notice the location you are operating in (reflectors and attenuators?). You will be amazed at the locations where solid 800 MHz communications can be maintained.

**SHERIFF MARSHAL MERGER**

As permitted by SB 1196 and adopted by the Board of Supervisors on June 20, 2000 the Orange County Marshal's Department merged with the Orange County Sheriff-Coroner Department effective July 1, 2000. As of that date, management authority and operational responsibility for all matters related to Court Security, Civil Process, Warrants and other related court services operations previously assigned to the Marshal's Department were transferred to the Office of the Sheriff. Former Marshal's Department employees are now proud members of the Sheriff's Department.

In 1953, the first Orange County Marshal's Office was established. The Orange County Marshal's Department was formed through the consolidation of five separate offices that existed within the county prior to December 1970. Reorganization provided the department with the challenge of developing a professional organization and, at the same time, reducing the cost of providing mandated services.

In 1982, the passage of Assembly Bill 57 set the stage for another department milestone by providing the mechanism for a Marshal/Sheriff consolidation of duplicated functions. In March 1984, the department assumed total responsibility for previously duplicated functions that the Sheriff had provided to the courts. Those functions include bailiffing for the Superior Court, service and enforcement of all civil processes, enforcement of all warrants and the transportation of mental health conservatees to the Superior Court for hearings. With 463 authorized employees, the Orange County Marshal's Department became the largest law enforcement agency of its kind in the state and the fourth largest law enforcement agency in the county.

The majority of Marshal employees were assigned to bailiffs in the courtrooms. Augmenting that group were the deputies responsible for the movement and guarding of prisoners, operating court holding facilities, booking defendants ordered into custody and maintaining security during high-risk trials.

Deputy Marshals, civilian technicians and professional support personnel all contributed to the important duty of the service of civil process including delivery of subpoenas, orders, notices and summonses. Civil field deputies enforced all court-ordered special enforcement civil actions, such as evictions, till-taps, and vehicle levies.

The Field Services Division Warrant Section was responsible for the service of warrants of arrest, investigation of crimes reported in the justice centers and the transportation of conservatees. Designated as the primary service agency for 95 percent of all warrants issued in Orange County, the department receives over 69,000 warrants a year.

The Marshal also employed Court Services Officers (CSOs). Each officer must complete a 72 hour course of specialized training in Laws of Arrest and Weapons Handling in addition to receiving extensive on-the-job training. As authorized by Section 830.36 of the Penal Code, Court Services Officers have full peace officer power only while on duty.

***Gary Gray cont'd from pg. 3***

Gary is a senior life member and a past president of APCO. His contributions to public safety communications spans the last 27 years. Gary has served as CPRA president, APCO Executive Council member, chaired the APCO Engineering & Research Committee and sat on the National APCO Regulatory Review & Docket Committee. Gary has also chaired the National Plan Steering Committee and Frequency Advisory Committee. He is the current local frequency coordination advisor for the southern California area.

In Gary's professional career, he has served in both agency and consulting capacities. Projects for Orange County include coordinating UHF law enforcement communications systems, upgrading and expanding VHF radio systems for police and local government, and implementation of a multi-user 800 MHz trunked radio system. As consultant, Gary has helped develop radio systems for the cities of Stockton, San Diego and Los Angeles.

Gary has always provided technical support for our RACES operation, and is responsible for the installation and maintenance of all our RACES repeaters. On behalf of the OCRACES membership, congratulations Gary on this prestigious award!