July 2012

Newsletter of the County of Orange Radio Amateur Civil Emergency Service

Inside this issue:

The Next OCRACES Meeting is

July 2, 2012
1930 Hours

840 N. Eckhoff Street, Suite 104, Orange

Guest Speaker: Joe Moell, KØOV Direction-Finding Techniques

Orange County Sheriff's Department
Communications & Technology Division

Captain's Corner

by RACES Captain Ken Bourne, W6HK, Chief Radio Officer

Extended Power Outage

At the June 25th City/County RACES & MOU meeting, we decided that the scenario for the October 6th City/County RACES & MOU drill will be a massive power outage lasting for several days, if not weeks. This could be the result of many possible causes—a break in the power grid coming in from another state that could set a chain reaction of shutdowns (as happened recently in San Diego County and South Orange County), strategically placed explosives along the power grid, cyberwarfare against the power infrastructure (along with simultaneous cyberattacks on military, public-safety, and industrial computers), or a massive earthquake. Perhaps cyberterrorism or warfare is a bit far-fetched, but there are plenty of warnings about that from high-level sources, including the Department of Homeland Security.

The U.S. federal government says the electric power transmission grid is susceptible to cyberwarfare. The Department of Homeland Security cooperates with industry to identify vulnerabilities and enhance the security of control system networks. The government is also trying to ensure that security is built into the next generation of "smart grid" networks.

Computer security firm McAfee and the Center for Strategy and International Studies in Washington issued a study in April 2012 stating that utility industry executives from 14 nations found that deliberate cyberattacks are getting worse. "One of the more startling results of our research is the discovery of the constant probing and assault faced by these crucial utility networks. Some electric companies report thousands of probes every month. Our survey data lend support to anecdotal reporting that militaries in several countries have done reconnaissance and planning for cyberattacks on other nations' power grids, mapping the underlying network infrastructure and locating vulnerabilities for future attack," the report stated.

Reports in 2009 indicated that China and Russia had infiltrated the U.S. electrical grid and inserted software programs that could disrupt the system. The North American Electric Reliability Corporation (NERC) issued a public notice warning that the electrical grid is not adequately protected from cyberattack.

Defense contractors with years of experience in protecting Pentagon and other military computer networks are now focusing on civilian infrastructure such as the power grid.

The power grid is not dependent on the Internet. Switch gear mounted electromechanical relays provide overload and short-circuit protection. An outage would more likely be caused by transformer failure, fire along a transmission line, earthquake, or terrorism at a substation or power towers.

Whatever the cause, we need to list the potential results of extended power failure (such as gasoline pumps, cold storage of food, cable telephone systems, etc.), and prepare our plans for emergency communications to deal with these problems. That will be the focus of our October 6th drill.

RACES and MOU Members Support Election

OCSD Emergency Communications Manager Marten Miller, KF6ZLQ, has conveyed his appreciation to City and County RACES and MOU members for their efforts in supporting OCSD's Ballot Transportation Plan for the June 5, 2012, Primary Election. OCSD's team included drivers, Deputies, precinct verification, data entry, dispatchers, logistics, reception, documentation, charting, amateur radio operators, traffic control, and timekeeping. Marten said there was a lot going on throughout the evening and "although it may have appeared somewhat effortless to the casual observer, we know it required a great deal of effort from each of our team members to pull it off. Everybody had a job to perform and each job was critical to the success of our operation. I appreciate the effort each of you took to ensure a successful outcome for our part of the overall process."

Jim Dorris, KC6RFC (left), and Sgt. Chuck Dolan, KG6UJC, had traffic control duties at VTC.

Marten also said, "We certainly had plenty of challenges during the course of the evening. The good news is that we overcame those challenges and we were successful in accounting for all of the ballots from the 1109 polling sites and safely delivering them to the Vote Tally Center in Santa Ana. The Registrar of Voters, Neal Kelley, expressed his gratitude for our efforts in helping them with another successful election process."

One of the challenges was interference to our 2-meter repeater from a statewide linked repeater system. It was so severe that we had to move our operations to one of our 440-MHz repeaters. The interference continued the next day, so we contacted ARRL Official Observer Coordinator Dan Welch, W6DFW. Dan asked direction-finding expert Joe Moell, KØOV, to help locate the source of interference. Joe found that a city RACES unit had established a crossband repeater between 446.5 MHz and the input of our 2-meter repeater. When a signal appeared on 446.5 MHz (such as an IRLP simplex link to the statewide system, other simplex users of that frequency, or intermod products at the RACES station in the city's police department), the crossband repeater dumped it on the input of our 2-meter repeater. Joe traced it to a dual-band transceiver with crossband repeat activated, and, with the permission of the city's IT department, turned off the radio. The Chief Radio Officer for that City RACES unit has since apologized for the interference. It is not a good procedure to place a crossband repeater on another organization's repeater frequency without their express permission.

OCRACES members participating in the Primary Election ballot transportation communications included Lt. Ralph Sbragia, W6CSP, Tom Tracey, KC6FIC, Walter Kroy, KC6HAM, Capt. Ken Bourne, W6HK, Kenan Reilly, KR6J, John Bedford, KF6PRN, Jim Dorris, KC6RFC, Marty Oh, KJ6RWE, Sgt. Chuck Dolan, KG6UJC, Sgt. Jack Barth, AB6VC, Brian Turner, KI6WZS, and Nancee Graff, N6ZRB. Thanks also to members of Anaheim RACES, Brea RACES, Buena Park RACES, Costa Mesa RACES (MESAC), Santa Ana ACS (SART), Fountain Valley RACES, Fullerton RACES, Huntington Beach RACES, Irvine RACES (IDEC), Laguna Beach RACES (LBECT), Los Alamitos/Seal Beach RACES, Mission Viejo RACES, Orange RACES (COAR), Placentia RACES, Tri-Cities RACES, Westminster RACES, and Hospital Disaster Support Communications System (HDSCS) for their valuable assistance.

Tom Tracey, KC6FIC, Kenan Reilly, KR6J, and Brian Turner, KI6WZS (left to right photos), at VTC Net Control positions in OCRACES van.

Next OCRACES Meeting: July 2nd

The next County of Orange RACES meeting will be on Monday, July 2, 2012, at 7:30 PM, at 840 N. Eckhoff Street, Suite 104, in Orange. At this meeting, Joe Moell, KØOV, will give an informative and entertaining presentation on direction finding. Joe has literally written the book on DFing, and writes monthly transmitter-hunting columns for *CQ* and *CQ VHF* magazines. He quickly located the source of interference to our 2-meter repeater that occurred during the Primary Election (see article above). The information that Joe will provide at the July 2nd meeting will help OCRACES members track interference to our repeaters and public-safety frequencies, and to reestablish our 2-meter T-hunts that were so popular a few years ago.

OCRACES Participates in Field Day 2012

by RACES Lieutenant Ralph Sbragia, W6CSP, Radio Officer

June 23rd and 24th saw OCRACES participation in the annual ARRL Field Day exercise. This year marked the first year that some equipment was set up in Craig Park on Friday night. The RACES van was deployed and two 40+ foot portable masts were assembled and erected under the leadership of Kenan Riley, KR6J. Assisting Kenan were Chuck Dolan, KG6UJC, Ralph Sbragia, W6CSP, Giovanni Sbragia, and Sergeant First Class John Vargas, KV9WMD. John is Communications Chief for the 9th Civil Support Team, an Army National Guard Emergency Response Unit stationed in Los Alamitos. Kenan and Chuck then split the evening on station with the RACES van.

On Saturday morning, Chuck, John, and Ralph were joined by OCRACES staff Ken Bourne, W6HK, John Roberts, W6JOR, Brian Turner, KI6WZS, and Jim Dorris, KC6RFC, as well as a team from the 9th Civil Support Team who deployed one of their communications support vehicles as part of an exercise for their training as well as an opportunity to display their capabilities as part of our overall operational area. The setup team assembled and erected the Cushcraft A-3S three-element 10/15/20-meter beam and raised Kenan's 40-meter wire dipole and John's (W6JOR) Windom multiband dipole. At 1100, Station One and the GOTA station were ready and operational. Issues that were later identified to be a coaxial-cable problem prevented Station Two from getting on the air until about 1700. Another problem that was identified was a DC voltage drop issue when current draw increased through the Anderson Powerpole connections on the outside of the RACES van. This issue will require more research.

Kenan Reilly, KR6J, racks up CW contacts on 20 meters.

Placentia RACES Member Kevin Briley, KG6IIS (left), and OCRACES Applicant Don Cooke, AF6CV, operate GOTA station.

OCSD Communications & Technology Division Director Robert Stoffel, KD6DAQ, Field Day Coordinator Ralph Sbragia, W6CSP, and Giovanni Sbragia (left to right).

OCSD Emergency Communications Manager Marten Miller, KF6ZLQ (left), and Randy Benicky, N6PRL.

Over the 24 hours of operations, our team completed just over 1000 contacts. Two-thirds of this was due to the herculean efforts of Kenan Riley, who staffed Station One for 22 of the 24 hours. Joining Kenan in operating either of our two main stations or the GOTA station were Don Cooke, AF6CV, Kevin Briley, KG6IIS (Placentia RACES); Randy Benicky, N6PRL, John McCauley, KD6PGC (Placentia RACES), Jim Dorris and Ralph Sbragia. Due to the short deadline for this month's *NetControl*, a more detailed analysis of our contacts will be published next month.

Sunday tear-down went smoothly and was completed by 1300. This included a policing of our operational area to try to make sure we left the park better than the way we found it. We did encounter unexpected "rain showers" (in the form of automated irrigation sprinklers) early Sunday morning, but the team had prepared for that potential and handled the unplanned water without incident.

FCC Allows Medical Devices at 2360-2400 MHz

In a *First Report and Order* and a *Further Notice of Proposed Rulemaking* (ET 08-59) released on May 24, 2012, the FCC decided to expand the Part 95 Personal Radio Service rules to allow medical devices to operate on a secondary basis in the 2360-2400 MHz band. These devices—called Medical Body Area Networks (MBAN)—provide a way for health-care facilities to monitor their patients via wireless networks. Because use of these frequencies will be on a secondary basis, MBAN stations will not be allowed to cause interference to—and must accept interference from—primary services, including radio amateurs who operate on a primary basis in the 2390-2395 MHz and 2395-2400 MHz bands.

In July 2006, the FCC released a *Notice of Proposed Rulemaking* and *Notice of Inquiry and Order (NOI)*, regarding the use of the radio spectrum for advanced medical technologies. In December 2007, GE Healthcare filed ex parte comments in response, proposing that the band 2360-2400 MHz be allocated on a secondary basis for "Body Sensor Networks" (BSNs). In April 2008, the FCC put the proposal on Public Notice; the ARRL submitted comments, pointing out the potential incompatibility with amateur operations. Nevertheless, in June 2009, the FCC released a *Notice of Proposed Rulemaking* that also requested comments on possible alternatives, including 2300-2305 MHz. The ARRL followed up in October 2009 with additional comments.

In making the decision to allow these devices in the 2360-2400 MHz band, the FCC noted that the costs of permitting MBAN operation "are limited to the risk of increased interference, which we minimize by adopting rules to protect other licensed operations in these bands. We find that the risk of increased interference is minimal and is greatly outweighed by the benefits of the MBAN rules we adopt today."

MBAN operators in the 2390-2400 MHz band will have to account for radio amateurs, who are authorized on a primary basis in this spectrum. "Both Philips and GE Healthcare assert that interference from MBAN devices to Amateur Radio is unlikely, citing factors such as the low transmission power and low duty cycle proposed for MBAN devices, as well as geographic separation and the frequency agility of MBAN devices," the FCC pointed out in its comments. "The ARRL does not anticipate that an MBAN would cause 'a significant amount of harmful interference' to amateur users, but it cautions that some amateur operations—such as weak-signal communications that occur on a 'completely unpredictable basis'—could receive interference."

The FCC said it believed that MBAN devices can "successfully share the band with the Amateur Service. These frequencies are part of the larger '13 cm band' in which Amateur Radio operators already share the adjacent 2400-2450 MHz portion of the band with low-powered equipment authorized under Part 15 of our rules. We expect that the Amateur Service will likewise be able to share the 2390-2400 MHz portion of the band with MBAN devices because the power limits for MBAN operations will be even lower than that allowed for the unlicensed equipment that operates in the 2400-2450 MHz range. We further believe that MBAN and amateur operations are highly unlikely to occur in close proximity to each other. An MBAN, which will use very low transmitted power levels compared to the Amateur Service, is not intended for mass-market types of deployment, and instead will be used only under the direction of health-care professionals."

According to the FCC, the majority of MBAN operations in the 2390-2400 MHz band will be located indoors: "We envision that the most likely outdoor use will occur in ambulances or while patients are otherwise in transit, thus we do not believe that prolonged outdoor use in a single location is likely. In such a situation, any interference that might occur would likely be transitory in nature and would not seriously degrade, obstruct, or repeatedly interrupt amateur operations and thus would not be considered harmful under our definition of harmful interference."

The FCC also addressed the potential for interference from radio amateurs to the MBAN devices. The FCC pointed out that MBAN proponents assert that "MBAN devices will have built-in capabilities, such as spectrum sensing techniques to detect in-band amateur signals and frequency agility capability to move MBAN transmissions to other available channels."

As to the ARRL's concerns about MBAN's reliability and the risk presented by interference caused by amateur operation, GE Healthcare acknowledged that "medical device manufacturers seeking to develop equipment consistent with the MBAN rules would need to build robust products in order to satisfy FDA requirements and to ensure customer acceptance," but the FCC did not view that as a barrier to its efforts to develop and deploy MBAN devices.

"We find that factors such as the incorporation of established techniques to avoid interference into MBAN devices, the use of low duty cycles, and the separation distances between MBAN devices and amateur operations that are likely to occur in real-world situations will minimize any potential for interference to MBAN devices from amateur users," it explained. "In the unlikely event that an atypical scenario occurs where amateur operators do receive harmful interference from MBAN operations, we note that amateur operators would be entitled to protection from MBAN interference. MBAN operations will occur on a secondary basis and MBAN operators will thus be required to accept any interference they receive from primary amateur licensees operating in accordance with the rules."

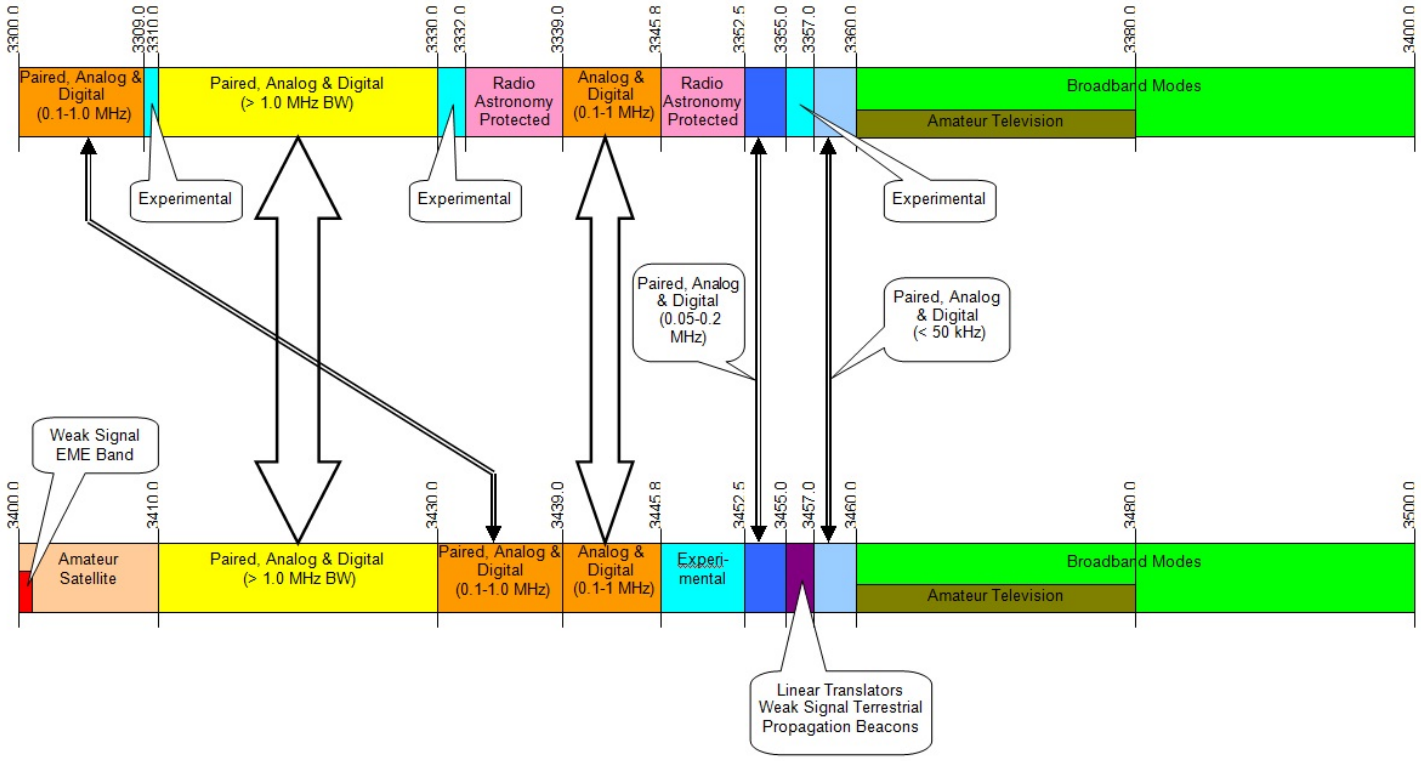
ARRL Directors Approve 9 cm Band Plan

The ARRL Board of Directors has unanimously voted to approve the 9 cm band plan, as presented by the ARRL UHF/Microwave Band Plan Committee. Earlier this year, the committee asked radio amateurs for comments on a proposed 9 cm band plan, explaining that the purpose of these band plans is to share information about how the amateur bands are being used and to suggest compatible frequency ranges for various types of application. The committee also recognized that local conditions or needs may necessitate deviations from a band plan, and that regional frequency coordinating bodies may recommend alternatives for use in their respective regions.

The new 9 cm band plan (see below) includes the following notations:

- This band plan includes all other emission modes authorized in the 9 cm amateur band whose necessary bandwidth does not exceed the suggested bandwidths listed.
- Weak Signal Terrestrial legacy users are encouraged to move to 3400.3-3401.0 MHz, as time and resources permit.
- Broadband segments may be used for any combination of high-speed data (e.g. 802.11 protocols), Amateur Television, and other high-bandwidth activities. Division into channels and/or separation of uses within these segments may be done regionally, based on need and usage.
- Per ITU RR 5.149 from WRC-07, these band segments are also used for Radio Astronomy. Amateur use of these frequencies should be first coordinated with the National Science Foundation.

Proposed Band Plan for the Amateur 9 cm Band (3300 – 3500 MHz)



Severe Fire Weather Patrol Training: August 6

Angela Garbiso, an Education Specialist with the Orange County Fire Authority, will provide training at the August 6, 2012, OCRACES meeting for participating in Severe Fire Weather Patrols. This meeting, which begins at 7:30 PM, will be held at the Orange County EOC on Loma Ridge. All OCRACES members and City RACES members who wish to participate with OCRACES in the patrols are required to attend this annual training.

RACES/MOU News from Around the County

"RACES / MOU News" provides an opportunity to share information from all City & County RACES / ACS units and MOU organizations in Orange County.

Please send your news to *NetControl* Editor Ken Bourne, W6HK, at:

w6hk@ ocraces.org

Buena Park RACES

Anthony Santangelo, K1ACS, is now the Buena Park RACES Interim Chief Radio Officer. James Payne, KB6WUM, remains the Assistant Chief Radio Officer.

Santa Ana ACS

Santa Ana Response Team (SART) is now under the Santa Ana Police Department. Larry Wilson, K6SCH, has taken the Chief Radio Officer position. Tom Mackay, W6WC, is the Assistant Radio Officer. SART's contact at SAPD is the interim Emergency Manager, Sergeant Brian Sheldon. Santa Ana Fire Department, which coordinated SART under Captain Steve Snyder, KI6EYQ, has been absorbed by the Orange County Fire Authority. Steve, who is now an OCFA Captain, remains a SART member.

American Red Cross Serving Orange, Riverside & San Bernardino Counties

This year's MayDay event has been canceled. Because of the time frame to put this type of event together, the restrictions of such will not allow for a good program this year.

Hospital Disaster Support Communications System (HDSCS)

A T1 telephone/data trunk line at Garden Grove Hospital became intermittent and noisy on May 17, 2012. The hospital scheduled a replacement for the line for that evening and asked HDSCS members to come in to provide backup communications for critical units within the facility while phones were down for the replacement. Six HDSCS members were stationed at critical units within the facility, including Emergency Department, Telemetry, Intensive Care, Stepdown, Mother/Baby, and Medical/ Surgical. They were Tom Gaccione, WB2LRH, Rebecca Katzen, KI6OEM, Pete Martinez, K2PTM, Gary Sanders,

KC6TWZ, Chris Sanders, KE6BRY, and Mike Turner, W4OPS. Outside base-station contacts were April Moell, WA6OPS, Jackie Schaffer, WA6AKP, and Jon Schaffer, W6UFS. Fortunately, the replacement work was uneventful and HDSCS operations lasted about 90 minutes.

At 2:25 PM on Monday, May 21, 2012, HDSCS was activated via cell phone by the Director of Facilities at Garden Grove Hospital. The telephone system could not make outgoing calls and there was concern that further problems with the system were in the offing. Five HDSCS members responded to the hospital, with the first two arriving within 40 minutes of the call. Four were stationed in Emergency Department, Intensive Care, Telecommunications, and the Command Center. The fifth was a "shadow" to the Director of Facilities. Technicians installed a temporary "patch" into the system, getting it operational in about three hours. After a 30-minute hold, HDSCS operators left the facility, but they were back at the hospital the next morning on standby as the repairs were finalized. Responding to the hospital were Paul Broden, K6MHD, Rebecca Katzen, KI6OEM, Jim McLaughlin, AB6UF, Dave Reinhard, KJ6REP, and Mike Turner, W4OPS. Net Controls and outside base stations providing support were April Moell, WA6OPS, Jackie Schaffer, WA6AKP, and Jon Schaffer, W6UFS.

Orange County Amateur Radio Club

Peter Putnam, NI6E, will give a presentation on solar panels at the July 20th OCARC meeting, 7:00 PM, American Red Cross, 600 Parkcenter Drive, Santa Ana.

July 2012

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2 OCRACES Meeting & Weekly ACS Net	3	4 Independence Day	5	6	7
8	9 Weekly ACS Net	10	11	12	13	14
15	16 Weekly ACS Net	17	18	19 CPRA Meeting	20 OCARC Meeting	21
22	23 Weekly ACS Net & SWACS Freq. Test	24	25	26	27	28
29	30 Weekly ACS Net	31				

Upcoming Events:

- Jul 2: OCRACES Meeting, 1930 hours, 840 N. Eckhoff Street, Suite 104, Orange. Joe Moell, KØOV, will talk about direction finding and T-hunts.
- Jul 4: Independence Day.
- Jul 19: California Public-Safety Radio Association (CPRA) Meeting, Knott's Berry Farm Resort Hotel, 7675 Crescent Ave., Buena Park. Presentation: Orange County lifeguard communications.
- Jul 20: Orange County Amateur Radio Club Meeting, 1900, American Red Cross, Santa Ana
- Jul 23: Southwest ACS Frequency and Radio Test.
- Aug 6: OCRACES Meeting, 1930 hours, Orange County EOC, Loma Ridge. Annual Severe Fire Weather Patrol training.
- Oct 6: City/County RACES & MOU Drill, 0900-1100 hours. Scenario: massive power outage.

www.ocraces.org

Mission Statement

County of Orange RACES has made a commitment to provide all Public Safety departments in Orange County with the most efficient response possible to supplement emergency/disaster and routine Public Safety communications events and activities. We will provide the highest level of service using Amateur and Public Safety radio resources coupled with technology, teamwork, safety, and excellence. We will do so in an efficient, professional, and courteous manner, accepting accountability for all actions. We dedicate ourselves to working in partnership with the Public Safety community to professionally excel in the ability to provide emergency communications resources and services.

County of Orange RACES Frequencies

10 m: 29.640 MHz output, 29.540 MHz input, 107.2 Hz PL (off the air)
6 m: 52.620 MHz output, 52.120 MHz input, 103.5 Hz PL
2 m: 146.895 MHz output, 146.295 MHz input, 136.5 Hz PL*
2 m: 147.480 MHz simplex
1.25 m: 223.760 MHz output, 222.160 MHz input, 110.9 Hz PL
70 cm: 446.000 MHz simplex
70 cm: 449.100 MHz output, 444.100 MHz input, 110.9 Hz PL (private)
70 cm: 449.180 MHz output, 444.180 MHz input, 107.2 Hz PL (private)
23 cm: Off the air until reprogrammed to new coordinated frequencies

*Primary Net—Mondays, 1900 hours

Program Coordinator
Marten Miller, KF6ZLQ
(714) 704-7917

Chief Radio Officer (Captain)
Ken Bourne, W6HK
(714) 997-0073

Radio Officers (Lieutenants)
Scott Byington, KC6MMF
Harvey Packard, KM6BV
Ralph Sbragia, W6CSP

Assistant Radio Officers (Sergeants)
Jack Barth, AB6VC
Chuck Dolan, KG6UJC
Jim Carter, WB6HAG
Ernest Fierheller, KG6LXT

County of Orange RACES

OCSD/Communications & Technology
840 N. Eckhoff St., Suite 104, Orange, CA 92868-1021
Telephone: (714) 704-7917 ● Fax: (714) 704-7902
E-mail: ocraces@comm.ocgov.com

County of Orange RACES

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

Telephone – (714) 704-7917
Fax – (714) 704-7902
E-mail – ocraces@comm.ocgov.com

Visit Our Web Site
http://www.ocraces.org
It's Where It's @!

Questions or Comments?
Contact *NetControl* Editor Ken Bourne, W6HK
w6hk@ocraces.org

"W6ACS ... Serving Orange County"

Meet your County of Orange RACES Members!


Ken Bourne
W6HK


Scott Byington
KC6MMF


Harvey Packard
KM6BV


Ralph Sbragia
W6CSP


Marten Miller
KF6ZLQ


Robert Stoffel
KD6DAQ


Jack Barth
AB6VC


Jim Carter
WB6HAG


Chuck Dolan
KG6UJC


Ernest Fierheller
KG6LXT


John Bedford
KF6PRN


Randy Benicky
N6PRL


Bill Borg
KG6PEX


Jim Dorris
KC6RFC


Nancee Graff
N6ZRB


Ray Grimes
N8RG


Walter Kroy
KC6HAM


Martin La Rocque
N6NTH


Brian Lettieri
KI6VPF


Marty Oh
KJ6RWE


Kenan Reilly
KR6J


John Roberts
W6JOR


Joe Selikov
KB6EID


Tom Tracey
KC6FIC


Brian Turner
KI6WZS