

October 2016



Newsletter of the County of Orange Radio Amateur Civil Emergency Service

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## Captain's Corner

*by RACES Captain Ken Bourne, W6HK, Chief Radio Officer*

### 60 Meters

Have you ever operated on the 60-meter band? It's different than other HF ham bands, because it's "channelized." You can operate only on five frequencies in this 5351.5-5366.5 kHz band. The control operator must hold either a General, Advanced, or Amateur Extra class license.

This band is allocated to amateurs on a secondary basis. We must yield to other services, and cease operations when we hear a non-amateur transmission on the channel. We should keep our transmissions as short as possible.

Legal operating modes on 60 meters include upper sideband (USB) voice, CW, and digital. Maximum bandwidth is 2.8 kHz. (It's suggested that you adjust your maximum SSB transmit bandwidth to 2.4 kHz, to avoid exceeding the maximum legal bandwidth because of overmodulation.)

The 60-meter band also has significant power restrictions, measured in effective radiated power (ERP), which must not exceed 100 watts, relative to a half-wave dipole. If you use a directional antenna, you must keep a copy of the gain specifications (commercial or homebrew calculations) in your station records. For example, if your antenna has a 3-dB gain (which doubles your power), your maximum legal output power from your transmitter is 50 W, for an effective radiated power of 100 W.

In the chart shown, the "Center Frequency" is the official FCC assigned frequency. However, in a typical single-sideband transceiver, operating in the upper

60-Meter Amateur Radio Band		
Channel Designation	USB Dial Frequency	Center Frequency
Channel 1	5330.5 kHz	5332.0 kHz
Channel 2	5346.5 kHz	5348.0 kHz
Channel 3	5357.0 kHz	5358.5 kHz
Channel 4	5371.5 kHz	5373.0 kHz
Channel 5	5403.5 kHz	5405.0 kHz

-sideband mode, you would dial the frequency to what is shown in the middle column. If your transceiver has memories, you might as well designate five of those memories to the USB dial frequencies, since they are not easy to remember.

CW and PSK operation must be at the FCC-designated "Center Frequency," as shown in the chart. Some transceivers transmit CW at the exact frequencies shown on their front-panel display, but other transceivers have a specified offset (such as 600 Hz) of the actual transmission frequency. It's a good idea to check with a frequency counter.

The National Telecommunications and Information Administration (NTIA) requested that amateurs limit digital operating on 60 meters to PSK31 and PACTOR III only. FCC Rules seem to indicate that any J2D data emission would be permitted up to a bandwidth of 2.8 kHz, with short duration. However, the ARRL says it's critical to cooperate with the NTIA, and asks all amateurs to restrict all 60-meter digital operations to PSK31 or PACTOR III.

**The Next  
OCRACES  
Meeting Is  
October 3, 2016  
1930 Hours**

**Orange County EOC  
Loma Ridge**

**Plaque Dedication**

**Discuss Ideas for  
November 8th  
General Election**



Orange County Sheriff's Department  
Communications & Technology Division

## City/County RACES & MOU Drill: October 1st

The next City/County RACES & MOU ACS Exercise will be on Saturday, October 1, 2016, from 0900 to 1100 hours. Most OCRACES members will participate in the RACES Room at the Orange County EOC, while a couple of others will be deployed with the OCRACES emergency communications response vehicle to the Sheriff's Regional Training Academy in Tustin, for communications between the van and the EOC RACES Room. Members at the Academy will also give tours of the van to those attending the Orange County Sheriff's Department Career Fair, being held at the Academy from 10:00 AM until 5:00 PM. In addition to information about job openings for both sworn and professional staff, the Career Fair is a free, family-friendly opportunity to learn more about OCSD. Visitors will meet the deputies who serve their community, and see the helicopters, SWAT vehicles, Bomb Squad, Mounted Unit, K9s, Search & Rescue vehicles and apparatus, and, of course, the OCRACES van.

The disaster scenario for the ACS exercise will be an outbreak of fast-moving wildfires, exacerbated by a Red Flag Warning, high winds, high temperatures, and low humidity. Terrorists will be suspected of setting some of the fires. Each city will construct a minimum of nine messages, and then transmit to other cities while exchanging message traffic with OCRACES and the Hospital Disaster Support Communications System (HDSCS). The countywide Winlink system will be exercised, with some messages to include an attachment (not to exceed 50 KB), such as an ICS-213 form. Other messages will be sent by e-mail.

The primary focus of this exercise will be communicating by voice between City EOC, MOU agencies, and the County EOC, by sending and receiving general messages. Messages will be on the approved modified IC-213 form, which may be downloaded from the "Forms" page on the OCRACES Web site at <http://www.ocraces.org/forms.html>. Click on the "ICS 213 Compliant Amateur Radio Message Form." Message numbers should be in accordance with the format on page 4 of the Exercise Plan. In addition to sending outgoing message traffic, each agency must have someone monitoring their primary frequency for incoming message traffic.

In the General Communications Plan, City/County RACES to City RACES voice will utilize primary frequencies published in the January 2016 *Official RACES Guidebook* ("Yellow Book"). City RACES to County RACES voice will be via the 449.100 MHz OCRACES repeater (primary) and the 146.895 MHz repeater (secondary) or 52.620 MHz repeater. City RACES to HDSCS voice will be via the 146.970 MHz repeater. CTCSS tones are listed in the Exercise Plan.

In the Simplex Communications Plan, City/County/MOU agency to City/MOU agency voice will utilize primary simplex frequencies published in the "Yellow Book." City/MOU agency to County RACES voice will use the primary simplex frequency of 146.595 MHz and the secondary frequency of 446.000 MHz.

The HF Communications Plan will test countywide SSB communications on 40 meters, using NVIS (Near Vertical Incidence Skywave) propagation (which is typically poor during this season). The frequency for this part of the Exercise will be 7250 kHz, lower sideband.

The Winlink Communications Plan will challenge participants to send and receive messages, some containing an attachment. All agencies should use only tactical Winlink addresses (such as CAORCO for OCRACES). The Winlink UHF radio at the Orange County EOC was recently upgraded, and attachments should no longer be a problem. Suggested attachments (not to exceed 50 KB) include an ICS-213 message form. An ICS-213 template is available for Winlink Express (formerly called RMS Express) on the Winlink Web site at [https://www.winlink.org/content/ics\\_213\\_v25\\_general\\_message](https://www.winlink.org/content/ics_213_v25_general_message), but we might need some practice sessions before taking full advantage of templates.

In the E-Mail Communications Plan, we ask that each City RACES and MOU unit with e-mail capabilities send an e-mail message by the Internet to the Orange County EOC RACES Room at [orangecounty-races-eoc@comm.ocgov.com](mailto:orangecounty-races-eoc@comm.ocgov.com). Because the e-mail computer in the EOC RACES Room is at one of the positions for receiving incoming messages, and because the printer in that position is currently not working, the operator might not be able to respond to many messages.

For the first time, we are planning to use DMR (Digital Mobile Radio) in the ACS Exercise. Contacts will be made on the "Local" talk group (TG 2, Time Slot 1) of the N6GGS DMR repeater on Santiago Peak, on 449.0375 MHz, Color Code 1. Robert Stoffel, KD6DAQ, will be the DMR Net Control during this exercise, operating off-site. This will be a test of communications under possibly challenging conditions, and message traffic will be kept to a minimum. This experiment will indicate the viability of using DMR during actual emergencies. It may prove impractical if there is activity on the other talk groups on Time Slot 1, including Inland, Cactus, Mountain West, and SoCal (which is the most active). The N6GGS repeater owners encourage RACES members in Orange County to use their open DMR repeater, which includes the above talk groups as well as many others on Time Slot 2, including Statewide, Southwest, Mountain, North America, Worldwide, Comm-1, TAC310, and others. In-county RACES communications during an emergency would probably be conducted only on the Local talk group on TS 1.

## Next OCRACES Meeting: October 3rd at EOC

The next County of Orange RACES meeting will be on Monday, October 3, 2016, at 7:30 PM, at the Orange County EOC on Loma Ridge. The meeting will begin in the EOC RACES Room, where we will dedicate wall-mounted plaques honoring the service of deceased members Steve Sobodos, KN6UX, and Jim Carter, WB6HAG. After the dedication ceremony, we will move to the EOC's Support Center for our regular meeting, at which we will brainstorm ideas for effectively communicating from Collection Centers to the Vote Tally Center for the November 8th General Election. Participating City RACES Program Coordinators are urged to attend, and we can discuss any changes or updates that would be beneficial with RACES helping the Registrar of Voters.

## OCRACES Van at Reserve BBQ: October 16th

OCRACES will deploy its emergency communications response vehicle to the OCSD Reserve Bureau BBQ at Lakeview Park (near Irvine Lake) on Sunday, October 16, 2016, from 11:30 AM to 4:00 PM.

## City/County RACES & MOU Meeting: Oct. 17th

The next City/County RACES & MOU meeting will be on Monday, October 17, 2016, at 7:20 PM, at OCSD Communications & Technology Division, 840 N. Eckhoff Street, Suite 104, in Orange. At this meeting we will review the October 1st City/County RACES & MOU ACS Exercise. Representatives from City RACES units will give a report of recent activities.

## Amateur-Military Interoperability Exercise

An Amateur Radio-military interoperability exercise will take place on October 31 and November 1, 2016. The event will begin at 1200 UTC on October 31 and continue through 2359 UTC on November 1 on 60-meter channels 1-4 —5.3305 MHz, 5.3465 MHz, 5.357 MHz, and 5.3715 MHz, respectively.

During this exercise, military stations will attempt to make radio contact with stations in as many of the 3007 US counties as possible. Radio amateurs providing "county status" information will receive a US Department of Defense "interoperability QSL card."

For more information, contact the Military Auxiliary Radio Service (MARS).

## Are You Ready to ShakeOut?

On Thursday, October 20, 2016, at 10:20 AM, millions of people will practice "Drop, Cover, and Hold On" as they participate in the largest earthquake drill and preparedness event in world history. The goal of the annual drill is to prevent disasters from becoming catastrophes by increasing the probability for survival and community resiliency. The Great ShakeOut Earthquake Drills are held annually on the third Thursday of October. You can join millions of participants at 10:20 AM on October 20th who want to practice earthquake-safe action when seconds count.

What you do now, before a big earthquake, will determine how well you survive and recover. The Great ShakeOut drill serves as a reminder to County and City RACES personnel to conduct a "self-assessment" of individual readiness at home. Take the opportunity to have open discussions with family and loved ones about preparing for large-scale emergencies that can adversely impact our daily lives.

OCSD is dependent upon OCRACES members' level of preparedness to help Orange County recover from adversity. Take this opportunity to train, practice, and prepare for the next major earthquake. Visit <http://www.shakeout.org/> to learn more.

At least one City RACES unit (Laguna Beach) plans to be on the air during Great ShakeOut for simplex tests. LBECT Chief Radio Officer John Kountz, WO1S, typically communicates with Placentia and Buena Park radio amateurs (not necessarily RACES) during the annual drill. OCRACES members are urged to be active on the primary simplex frequency of 146.595 MHz on 2 meters and 446.000 MHz on 70 centimeters. We encourage County and City RACES members to participate in this simplex test from about 10:00 AM to 11:00 AM on October 20th.

The logo for ShakeOut, featuring the word "Shake" in a bold, black, sans-serif font above the word "Out" in a larger, bold, black, sans-serif font. The "O" in "Out" is significantly larger and overlaps with the "e" in "Shake".

# Placentia RACES Installs Radios in MCV

*by Mark Garrett, KG6CAV, Placentia RACES Radio Officer*

The City of Placentia procured a Mobile Command Vehicle (MCV) for their Police Department in 2014. Placentia RACES was asked to investigate ham radio communications for the MCV. In working with the City and the Police Department, it was determined that it would be best to have two radios installed in the MCV. The RACES unit did an analysis of the current radios that were available. We came up with a list of criteria to be able to have radios that provided coverage on 70 cm, 2 meters, 6 meters, and 10 meters. The radios would need to have removable control heads that could be removed and stored when not in use. This led us to two possible radio solutions: the Icom IC-7100 and the Yaesu FT-8900R.

Both of these radios use pluggable cable connectors to connect the removable head to the base unit. The Icom IC-7100 cable allowed the speaker to be connected to the removable head also. This was an ideal solution. However, each radio cost an additional \$1,000. This put it out of the range of the grant money that we had been able to procure.

The MCV had been outfitted with Ethernet ports at each work station and connected to a patch panel in the rack area. With some ingenuity, we were able to modify the connectors to allow us to transfer the six head connectors as well as the two speaker connectors through the existing Ethernet cabling. We used an RJ-45 breakout box and connect pins 1 thru 6 to the RJ-12 cable for the radio base and head. We use pins 7 and 8 to connect the speaker output leads through the Ethernet cable and then the speaker wires are connected to a mono plug for the headphones or a speaker.

The Yaesu FT-8900R radios are mounted on a 19-inch rack and then secured into the cabinet area. Power was pulled to an 8-plug RigRunner to distribute power for the radios and the motors to raise the antennas. The antennas are mounted on an antenna plate on the top of the MCV. The separation between the antennas is 50 inches. The antennas are raised and lowered using Diamond K9000TM motorized antenna mounts. A power switch was added to turn the power off to the radios and the antenna mounts when not in use. We use a Harvest CR 8900 antenna for each radio.

The antennas can be raised and lowered using the switches once the power is turned on. It takes about 10 to 15 seconds to raise them to the vertical position.

Since we have designed the radio system to use the existing Ethernet cabling, we can locate the radio controls to any work station that the police would like us to use. This is done by removing the blue Ethernet cables at the patch panel and connecting the orange cables from the radios to the vacated ports. We used the radio's separation kit and mounted it onto a gooseneck suction cup. The RJ-45 cable breakout box is then mounted to the back of the separation plate (see photo at right).

Then we plug in the Ethernet cable from the head into the Ethernet port at the work station location.



The radio's head on a gooseneck suction cup, set on a table outside of the MVC.

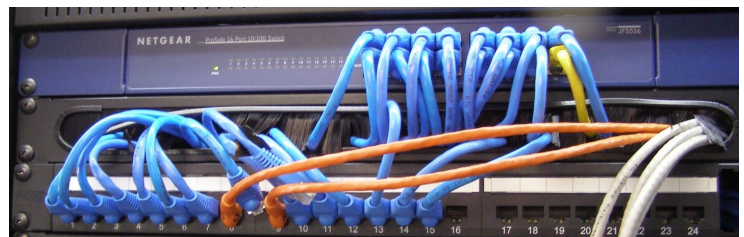
When we power on the radio or radios we are set to go. Once we are done with the activity, the steps are reversed. Then the radio heads and headphones are stored in a large shoe box and put back into an overhead cabinet.

When RACES is not being used, there is not any trace of the radio setup other than the switches on the one panel. Procurement of all equipment was done for less than \$1,750.

For the National Night Out, we plugged two 25-ft Ethernet cables into the ports at the back of the MCV, ran the cables out the Negotiation door on the back, and set up the radios on a table outside of the MVC. We could interact with the people as they passed by us.



Power switch (right) for turning power off to the radios and antenna mounts.



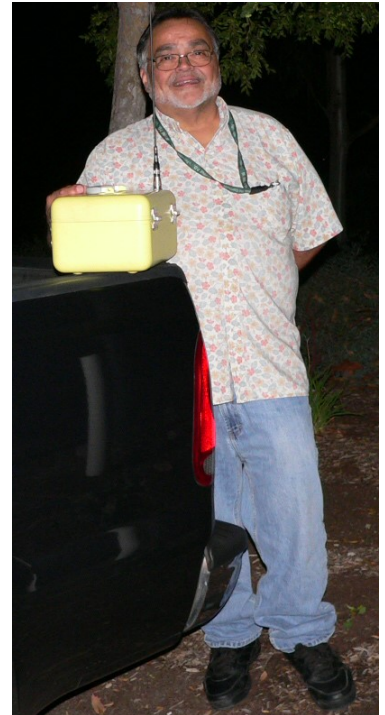
RJ-45 cable breakout box mounted to back of separation plate.

## KC6TWS Hides in Foothill Ranch

IDEC Operations Captain Peter Gonzalez, KC6TWS, was the fox on Monday, September 19, 2016, on the monthly cooperative T-hunt. He turned on the fox box immediately following the 2-meter OCRACES ACS net, hiding in a parking lot by the Foothill Ranch Library and Borrego Park, northeast of the intersection of Bake Parkway and Portola Parkway in Foothill Ranch. The fox box was on a hill overlooking a large shopping center, and bounced a signal off the store walls that convinced a couple of the hunters that the fox was in that shopping center, rather than about a half mile away.

First to find the fox was Ron Allerdice, WA6CYY, from Costa Mesa. After bouncing around the shopping center, Richard Saunders, K6RBS, from Mission Viejo, drove up the hill and found the fox. The OCRACES team—Ken Bourne, W6HK, and Scott Byington, KC6MMF—started near the fox, in the parking lot between the Foothill Family Church and the Foothill Ranch Community Park. They followed their first bearing and drove directly to the Foothill Ranch Library, within a few feet of the fox. Peter said he waved at them, but they didn't see him. Tricked by a bad attenuator setting, Ken and Scott drove away and got trapped by the "hot spot" in the shopping center. Eventually, they were talked in by the fox, back at the Foothill Ranch Library. How embarrassing! But fun!

The next cooperative T-hunt will be held on October 10, 2016 (the second Monday in October, rather than the usual third Monday, because there will be a City/County RACES & MOU meeting on October 17th), immediately following the OCRACES 2-meter net (approximately 7:20 PM). The fox will transmit on the input (146.295 MHz) of the 146.895 MHz repeater. Hunters will compare bearings via the 449.100 MHz repeater, and are encouraged to beacon their positions via APRS throughout the hunt. The fox will be hiding in a city or sector of Orange County (to be announced a few days prior to the hunt) on paved, publicly accessible property.



Peter Gonzalez, KC6TWS, with the fox box on the back of his truck near the Foothill Ranch Library and Borrego Park.

## "RF Seismograph" Reflects Band Activity

The Scanning RF Seismograph, a real-time HF propagation-monitoring tool developed by the MDSR Team and Alex Schwarz, VE7DXW, now can show both combined band noise and activity and just band activity. The RF Seismograph, which covers 80, 40, 30, 20, 15, and 10 meters, is a project of the North Shore Amateur Radio Club (NSARC).

"We were able to extract signals from the noise and display the results in gray scale vertical lines—white is best propagation," Schwarz said. "This separate display does not indicate changes in noise level."

The site is in Lynn Valley (CN89li), North Vancouver, British Columbia, at 500 feet ASL. A transceiver connected to an omnidirectional multiband antenna monitors JT-65 frequencies on six HF bands (for 8 seconds each, repeating the scan every 52 seconds). Recorders monitor signals and background noise on a given band and display the results in six color-differentiated (one color per band), long-duration graphs covering 6 hours of scans. Vertical movement of the primary graph traces is caused by changes in noise level and by the reflection of noise off the D Layer of the ionosphere, Schwarz explained.

When signals are present on a band, white vertical bars, color-coded by band below the main graph, indicate propagation based on the degree of activity. The web link is updated every 10 minutes.

Schwarz said the RF Seismograph also now can create a log file of events by matching propagation (white lines) with the recorded band and signal.

The MDSR Team is hoping to develop a notification system that sends an e-mail when a band appears to be open. "The idea is that, once you have set up the software, you could have maybe up to 100 e-mail addresses that will receive notification," he said. Schwarz believes this would get more people on the air, "because they are aware of the band conditions."

Schwarz said the RF Seismograph software confirms that solar flux is not the only indicator of HF propagation. "Even during times when the sun's flux flatlines, decent propagation is possible," he said. "Another finding is that propagation is very local, and it has to be measured at the amateur station's location best results."

# 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**

## Huntington Beach RACES

Huntington Beach RACES Assistant Radio Officer Steven Albert, KE6OCE, reported that HBRACES has been asked to cover three areas on three nets during the Breitling Huntington Beach Airshow, which takes place on October 22-23, 2016. The U.S. Air Force Flight Demonstration Squadron—the Thunderbirds—and the Breitling Jet Team will headline this event. HBRACES will be coordinating with the Police Department, Fire Department, FAA, Life Guards, and other Federal agencies.

## Mission Viejo RACES

Mission Viejo RACES Members Joe Ayres, AE6XE, and Don Hill, KE6BXT, gave a presentation on amateur radio mesh networks at the Orange County Amateur Radio Club meeting on Friday, September 16, 2016. They emphasized the many improvements that have been made in mesh networking during the past year.

## Newport Beach RACES

Newport Beach RACES Member Peter Putnam, NI6E, has a new toy—a TV news van that he purchased recently. He brought it to the Orange County Amateur Radio Club meeting on Friday, September 16, 2016, and ran some tests on a 2 GHz mesh node with Joe Ayres, AE6XE, from the American Red Cross parking lot in Santa Ana.

The 2004 Ford E-350 van includes a Will-Burt 9.5-56 pneumatic mast that extends to 56 feet. Inside the van is a warning panel for "mast extended" and "jacks down, plus GPS and scanner. A 7 kW generator provides 120 Vac at 58 amperes. Two air compressors run on 12 Vdc and 120 Vac. Featured are remote pan and tilt TV camera and remote pan and tilt 2 GHz dish. Mast and hydraulic leveling jack controls are outside on the passenger side.



More pictures of this impressive van may be seen at <http://ni6e.com/hamsters/TV-ENG-Van/>.

## Tri-Cities RACES

Tri-Cities RACES Chief Radio Officer Joe Lopez, W6BGR, reports that the Vision Quest Mountain Bike Race is back after a fire closure, date change, and other delays. The date is October 22, 2016. Joe emphasizes that the amateur radio team for the race is critical to the success of the event, providing great coverage in the Santa Ana Mountains to ensure the safety of participants and event volunteers on course. Several mesh-node cameras may be set up along the course to document check points. To sign up, call Joe at 949-485-8876.

The course runs for about 56.5 miles, with an 11,000+ foot elevation gain. Segments include:

1. Blackstar Canyon Road to the top and down the Silverado (Trail) Motorway to Aid Station #1—dirt fire road with many steep climbs until you go down the Silverado (Trail) Motorway, which is technical single track.
2. Aid Station #1 to Santiago Peak—uphill climbing on pavement with stream crossings, then dirt fire road.
3. Santiago Peak to the Holy Jim Trail—steep, technical downhill dirt fire road.
4. Holy Jim Trail to Aid Station #2—downhill, technical single track with stream crossings.
5. Holy Jim Trail to base of the West Horse Thief Trail—dirt road then technical single track with stream crossings.
6. West Horse Thief Trail to the junction at the Main Divide Road—steep hike-a-bike.
7. The top of West Horse Thief Trail to the top of Trabuco Canyon Trail—dirt fire road.
8. Trabuco Canyon Trail to Trabuco Creek Trail and Trabuco Creek Road—downhill, technical, steep, single track with stream crossings.
9. Trabuco Creek Road to finish line at the Parkers Property: 4 mostly flat miles on a dirt road to the Parkers Driveway approximately 1/4 mile before you would reach the wash at the end of Trabuco Creek Road.

# October 2016

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1 City/County RACES & MOU ACS Exercise
2	3 Weekly 2 m ACS Net & OCRACES Meeting	4	5	6	7	8 Weekly 40 m ACS Net
9	10 Weekly 2 m ACS Net & Cooperative T-Hunt	11	12	13	14	15 Weekly 40 m ACS Net
16 Reserve Bureau BBQ	17 Weekly 2 m ACS Net & City/County/MOU Meeting	18	19	20	21	22 Weekly 40 m ACS Net
23	24 ACS Nets on Five Bands & Cal OES Nets	25	26	27	28	29 Weekly 40 m ACS Net
30	31 Weekly 2 m ACS Net					

### Upcoming Events:

- **October 1:** City/County RACES & MOU ACS Exercise, 0900-1100 hours
- **October 3:** OCRACES Meeting, Orange County EOC, Loma Ridge, 1930-2130 hours
- **October 10:** Cooperative T-Hunt on input of 2-meter repeater, 1920 hours
- **October 16:** Reserve Bureau BBQ, Lakeview Park, 5305 E. Santiago Canyon Road, Silverado, 1130-1600 hours
- **October 17:** City/County RACES & MOU Meeting, 840 N. Eckhoff Street, Suite 104, Orange, 1920-2130 hours
- **October 24:** Five-band ACS nets and Cal OES Nets at OC EOC
- **November 8:** Ballot Transportation Communications for Election, 2000 hours
- **November 15:** Radio Rodeo, Huntington City Beach parking lot, 0830-1200 hours



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

40 m: 7250 kHz SSB (City/County/MOU Net—Saturdays, 1000 hours)  
 10 m: 29.640 MHz output, 29.540 MHz input, 107.2 Hz PL  
 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: 146.595 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: 1287.650 MHz, 1287.675 MHz, 1287.700 MHz, 1287.725 MHz, 1287.750 MHz, and 1287.775 MHz outputs, -12 MHz inputs, 88.5 Hz PL  
 \*Primary Net—Mondays, 1900 hours

RACES Program Coordinator (Emergency Comm's Manager)  
 Lee Kaser, KK6VIV  
 714-704-8080

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

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

Assistant Radio Officers (Sergeants)  
 Jack Barth, AB6VC  
 Ernest Fierheller, KG6LXT  
 Bob McFadden, KK6CUS  
 Tom Tracey, KC6FIC

### County of Orange RACES

OCSD/Communications & Technology  
 840 N. Eckhoff St., Suite 104, Orange, CA 92868-1021  
 Telephone: 714-704-8080 • Fax: 714-704-7902  
 E-mail: [ocraces@comm.ocgov.com](mailto:ocraces@comm.ocgov.com)

# County of Orange RACES

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

Telephone – 714-704-8080  
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](mailto:w6hk@ocraces.org)



**"W6ACS ...  
Serving  
Orange County"**

## Meet Your County of Orange RACES Members!



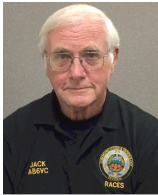
Ken Bourne  
W6HK



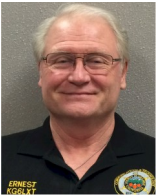
Scott Byington  
KC6MMF



Harvey Packard  
KM6BV



Jack Barth  
AB6VC



Ernest Fierheller  
KG6LXT



Bob McFadden  
KK6CUS



Tom Tracey  
KC6FIC



Randy Benicky  
N6PRL



Roger Berchtold  
WB6HMW



David Corsiglia  
WA6TWF



Jim Dorris  
KC6RFC



Nancee Graff  
N6ZRB



Ray Grimes  
N8RG



Walter Kroy  
KC6HAM



Martin La Rocque  
N6NTH



Fran Needham  
KJ6UJS



Kenan Reilly  
KR6J



Tom Riley  
K6TPR



Brad Russo  
KB6GPM



Tony Scalpi  
N2VAJ



Joe Selikov  
KB6EID



Robert Stoffel  
KD6DAQ



Ken Tucker  
WF6F



Tom Wright  
KJ6SPE



Lee Kaser  
KK6VIV