

May 2014



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*

### “Dat’s My Radio” (DMR)

RACES Sgt. Bob McFadden, KK6CUS, recently convinced me to purchase a Connect Systems CS700 DMR UHF 4-watt handheld radio, to join him in experimenting with Digital Mobile Radio (DMR).

I am having fun with the CS700, and I suggest to those who might be interested in the fascinating digital features of DMR to give it a try, and to think about possible applications for RACES. DMR is a complex technology, and I’ll just brush across a few observations in this article. More technical details will be in a future article.

The CS700 is a combination DMR and standard analog FM radio. You can PC-program it to operate on amateur UHF (70 cm) FM repeaters and simplex frequencies. It will not operate on 2 meters. It is also FCC Part 90 accepted, and can be used on narrowband public-safety and other commercial frequencies, from 400 to 470 MHz, using CTCSS or DCS. Normally, the CS700 sells for \$285.00, but if you call Connect System president Jerry Wanger, he will sell it to radio amateurs for only \$180.00 with 1700 mAh Li-on battery, charger, and belt clip. He also offers a USB programming cable for \$5.00 and a spare 2000 mAh battery for \$30.00, plus a speaker-mic for \$16.00. Programming software is a free download. For more information, see <http://connectsystems.com/products/top/radios%20CS700.htm>.

The CS700 is compatible with Motorola MOTOTRBO and other DMR

radios (such as Hytera). It is not compatible with other digital technology such as P25, D-STAR, etc. DMR operates within a 12.5 kHz channel spacing. It is a two-slot TDMA (Time-Division Multiple Access) system that offers voice, data, and other features.

Unfortunately, we don’t have a really local DMR repeater yet, but Bob and I are able to communicate through a Palos Verdes repeater. DMR repeaters are linked via the Internet and are typically set up with local, regional, North American, and worldwide talk groups. You can also communicate digitally on a simplex frequency. The infrastructure is not as widespread as D-STAR, but it is growing rapidly. DMR/MOTOTRBO does not provide interoperability with public safety, as does P25, but P25 is not as common for amateur radio communications.

Motorola XPR 5550 40-watt UHF MOTOTRBO radios are available at below \$600. They can run mobile or at home on a 12-volt supply. A Motorola XPR 8400 MOTOTRBO repeater (which also repeats analog FM) is available for \$1775. All we need is a UHF frequency pair and a site.



CS700

**The Next OCRACES Meeting Is**

**May 5, 2014**  
**1930 Hours**

**840 N. Eckhoff Street,**  
**Suite 104, Orange**

**Guest Speaker:**  
**Will Anderson, AA6DD,**  
**on HF Propagation**



## City/County RACES & MOU Drill: May 3rd

OCSD Emergency Communications Manager Delia Kraft, KF6UYW, has released the exercise plan for the City/County RACES & MOU ACS drill scheduled for Saturday, May 3, 2014, from 9:00 AM until 11:00 AM. OCRACES, City RACES units, and MOUs such as the Hospital Disaster Support Communications System, Red Cross, and OC SKYWARN normally participate. By conducting this drill as an ACS exercise, all participants will be able to communicate directly with each other, regardless of whether or not an MOU exists. Orange County RACES will be the coordinating agency for this ACS exercise.

The Emergency Manager or designee from each participating city/agency is requested to prepare and/or approve several messages for their RACES/ACS personnel to send during the exercise. Messages should reflect the possible needs public safety might have, such as structure protection, firefighting, traffic gridlock, road closures, evacuations, rescue operations, shelter needs, potable water procurement, hospital damage, etc. Also, messages may refer to any resources a city can offer such as care and shelter facilities or police/fire/public works personnel and equipment. Having these messages already prepared will help expedite the flow of radio traffic during the two-hour exercise. The ICS 213 Compliant Amateur Radio Message Form should be utilized by all participants in this drill, and will help to ensure common radio traffic passing techniques. The can be downloaded from the County of Orange RACES Web page at <http://www.ocraces.org>, listed in the left column. OCRACES members will also get practice in using the modified ICS 309 Communications Log, ICS 214 Unit Log, Incident Debrief Form, and ICS 205 Incident Communications Plan.

The drill scenario involves a strong low pressure system over the Eastern Pacific Ocean that pushed two major storms over Southern California, prompting mandatory evacuation orders in mountain foothill areas where mudslides and debris flows were a concern due to recent wildfires in Laguna Beach, Anaheim, and Newport Beach. Prado Dam has suffered damage and water is being released at extreme levels, causing major flooding on many streets in Orange County. Numerous schools have closed and are being used as shelters for over 200 displaced families. The storms have caused major power outages throughout Orange County. Generator failures along with flooding at UCI has created a situation in which all patients will be transported to neighboring hospitals and trauma centers. An overturned big rig has resulted in a hazardous material spill of 200 gallons of gasoline at the "Orange Crush." Coastal cities have been impacted by heavy rainfall, with PCH being closed in various locations.

Three exercises will occur simultaneously during the two-hour exercise period—a general message blitz, simplex contacts, and Winlink. The primary focus of the general message blitz will be communicating by voice between City, County, and MOU EOCs, by sending and receiving general messages in accordance with the communications plan. Each agency must have someone monitoring their primary channel for incoming message traffic. Refer to the *Official RACES Guidebook* ("Yellow Book") and Delia's exercise plan for appropriate frequencies and minimum number of messages to be sent between EOCs. The simplex exercise will occur at the same time as the general message blitz. A radio check will be conducted from a participating group to several neighboring groups, within either the "Blue Net" or "Red Net," specified in Delia's exercise plan. Each agency must have someone monitoring their primary simplex channel for incoming message traffic. The Winlink exercise is optional. Agencies should use their tactical Winlink addresses only (such as CAORCO for OCRACES). They should send a Winlink e-mail with an attachment to at least one other unit. Each participating unit should request a Winlink e-mail to be sent to them. "All" or "reply all" messages should not be sent. The OCRACES Winlink RMS sites, W6ACS-10 (431.475 MHz, Loma Ridge), W6ACS-11 (431.125 MHz, Olinda), and W6ACS-12 (431.075 MHz, San Clemente) might not be operational in time for this drill. If that's the case, participants may use the Newport Beach RACES RMS site, K6NBR-10 (431.475 MHz).

## Next OCRACES Meeting: May 5th

The next OCRACES meeting is on Monday, May 5, 2014, at 7:30 PM, at OCSD Communications & Technology Division, 840 N. Eckhoff Street, Suite 104, in Orange. At this meeting, Will Anderson, AA6DD, will cover HF propagation technology. We will also have a debriefing of the May 3rd City/County RACES & MOU drill and cover Winlink operation.

## City/County RACES & MOU Meeting: June 16

The next City/County RACES & MOU Meeting has been moved from the previously announced date of May 19th to June 16, 2014. It will be at 7:15 PM, at OCSD Communication & Technology Division, 840 N. Eckhoff Street, Suite 104, in Orange. At this meeting we will review the May 3rd City/County RACES & MOU Drill and discuss plans for Field Day on June 28-29, 2014. All City RACES and MOU representatives will give a brief report of their units' latest and planned activities.

## National Volunteer Week Applauds OCRACES

*by OCSD Emergency Communications Manager Delia Kraft, KF6UYW*

National Volunteer Week was celebrated April 6-12, 2014, recognizing and encouraging people to seek out imaginative ways to engage in their communities. The OCSD Communications and Technology Division Administrative Staff recognized four of the OCRACES members during the Division Breakfast meeting, including Ken Bourne, Bob McFadden, Harvey Packard, and Tom Tracey. Robert Stofel talked about the various impressive contributions made by each. There were over 50 employees in attendance cheering for the OCRACES members. Assistant Sheriff Don Barnes was also in attendance to give a personal thanks to the OCRACES members for their dedication to the organization.

Now it's my turn!

Harvey, in addition to your involvement with OCRACES, as a PSR you come in week after week to assist with the maintenance of our fleet vehicles. Thank you!

Bob, your continued involvement with Winlink and the RACES Room project makes you one of our highly needed assets. Thanks so much!

Tom, because of you, we have a structured training program. It's a work in progress, yet I see it gaining great momentum. The hours you have devoted to training are tremendous. Thank you very much!

Ken, a wise man once said, "A RACES Program Coordinator's workload is contingent on how committed the RACES Chief Radio Officer is." You do so much for the OCRACES program, I feel as if my workload is almost non-existent. You are nothing short of remarkable, and I can't thank you enough!



Recognized during National Volunteer Week were (left to right) Lt. Harvey Packard, KM6BV, Sgt. Bob McFadden, KK6CUS, Sgt. Tom Tracey, KC6FIC, and Capt. Ken Bourne, W6HK.

## RACES Support Needed for June 3rd Election

OCSD Communications & Technology Division will coordinate ballot transportation for the Primary Election on June 3, 2014, and RACES support has been requested. The goal is to have a communicator at each of the 33 Collection Centers in Orange County, for 100 percent coverage.

Communicators will record the precinct numbers of the boxes being loaded into the vans and transmit those precinct numbers to Net Control when the van departs from the Collection Center enroute to the Vote Tally Center (VTC) in Santa Ana. This allows the Registrar of Voters (ROV) staff to update their Web site with this information in real time.

The election will be conducted using electronic ballots with the addition of paper verification, so multiple boxes will be transported from each precinct. OCSD/Communications will be managing the transportation of the ballots, supplies, and paper verification equipment to the VTC. RACES communicators provide a communications link between Collection Centers and the VTC. Three repeaters will be used for this election, with the Collection Centers divided between the three repeaters. A Net Control operator will be assigned to each repeater channel.

County and City RACES and MOU communicators are needed at the following Collection Centers for this election: Anaheim (PD parking lot), Canyon Hills, Buena Park, Costa Mesa, Santa Ana, Fountain Valley, Fullerton, Garden Grove, Huntington Beach, Irvine, Laguna Beach, Laguna Woods, La Habra, Los Alamitos, Orange, Rancho Santa Margarita, Placentia, San Clemente, Saddleback, Tustin, Westminster, Laguna Niguel, Aliso Viejo, San Juan Capistrano (South Coast Christian Assembly), Anaheim (West Anaheim Youth Center), Corona Del Mar (Episcopal Church), Orange (Handy School), Huntington Beach (Faith Church), Huntington Beach (Boeing), Irvine (University High School), Mission Viejo City Hall, Placentia (Sierra Vista Elementary School), and Santa Ana (Saddleback High School). OCRACES communicators are also needed at the Vote Tally Center, including four traffic control operators, three Net Control operators, and one relief operator.

Collection Center activity begins at 8:00 PM and most are closed around 11:00 PM. VTC activity begins at 7:30 PM with setup, and ends around midnight. Communicators should arrive at the Collection Center location no later than 8:00 PM, in uniform. A Ballot Transportation Manual with all the necessary information will be available prior to Election Day.

## K6TPR Hides in Santa Ana

Five teams had fun hunting the fox on the cooperative T-hunt on Monday, April 14, 2014. The fox was OCRACES Member Tom Riley, K6TPR. This was Tom's first T-hunt experience, and he was an excellent fox, hiding at the northern end of the Santa Ana College soccer field parking lot. The first hunter to find Tom was Richard Saunders, K6RBS/GØERY, from Mission Viejo. The MESAC team consisted of Patrick Williams, KJ6PFW, Terri Fuqua, KJ6QOC, and Joy Williams, K6JOY. Two OCRACES teams found the fox, one consisting of Ken and Carol Bourne, W6HK and N6YL, and the other was Bob McFadden, KK6CUS. Another well-equipped hunter was Ron Allerdice, WA6CYY. All hunters had good initial bearings, but Ken and Carol were tricked by a false, reflected second bearing from the Red Cross parking lot. Fortunately, they heard other hunters claiming strong signals from the Santa Ana College area, so Ken and Carol ignored their second bearing and headed west and then north on Bristol Street, where they had accurate bearings from there on. Other hunters also experienced some reflected bearings, but relied on consistent bearings to bring them to the fox.



At the fox's den in Santa Ana are (left to right) Ken Bourne, W6HK, Richard Saunders, K6RBS/GØERY, Ron Allerdice, WA6CYY, Tom Riley, K6TPR (the fox), and Bob McFadden, KK6CUS (foreground). The yellow container in the back of Tom's El Camino at the right is the fox box, consisting of a Kenwood TM-G707A transceiver running 5 watts, a Byonics PicCon controller, an MFJ-1717PL antenna, and a 7-Ah gel-cell battery.

The cooperative T-hunts are a lot of fun, and provide excellent practice in working together to find interference quickly. The fox transmits random tones with a "fox box" on the input (146.295 MHz) of the OCRACES 2-meter repeater, using a PL to bring up the repeater so that those who are out of range of the hidden transmitter will know that the fox is transmitting by checking the repeater output. When in range, hunters take bearings on the input. Bearing information is shared on the 449.100 MHz repeater. Some hunters also beamed their locations via APRS.

The cooperative T-hunts are held on the second Monday of each month (except September), immediately following the OCRACES 7:00 PM 2-meter net, on the input of the repeater. The hunts conclude by 9:30 PM, and often earlier because of the cooperative sharing of bearings. The fox hides in a preannounced city or sector within Orange County, on paved public property. No tolls or fees are required to drive to the fox. The fox for the next cooperative T-hunt on May 12th will be Terri Fuqua, KJ6QOC. She is planning to hide in Costa Mesa.

If you haven't been on a T-hunt before, give the RACES cooperative T-hunt a try on May 12th (or any second Monday). All you need is a 2-meter transceiver and a direction-finding antenna such as an Arrow FHL-VHF loop and Arrow 146-3 three-element portable hand-held yagi. You might want to add an Arrow OFHA offset attenuator if you hunt on foot with an HT. For more sophistication, use a Doppler system, such as the Global TSCM Group DP2020T (see <http://www.kn2c.us>).

## Joe Saddler Receives Purple Heart Medal

At the 26th Annual Medal of Valor Luncheon on April 17, 2014, the Orange County Sheriff's Department honored 47 sworn and professional staff who exemplify the courage and professionalism expected from law enforcement. We are proud that one of the recipients was OCSO Communications & Technology Division Assistant Director Joe Saddler, WA6PAZ, who was awarded the Purple Heart Medal, as a result of sustaining serious injuries while on a mission as a Reserve Deputy in the Search & Rescue Reserve Unit (SRRU). The mission was on Easter Sunday, March 31, 2013, searching for two lost hikers in Trabuco Canyon. While traversing a particularly steep ledge, the ground gave way, and Joe fell about 10 feet onto a large rock before falling another 50 feet down the ravine. Hospitalized for nine days, Joe returned home, knowing that his and his team's efforts led to the successful rescue of the hikers. Joe became an SRRU member in 1991 and, since being assigned to the Bloodhound Squad in 1992, he has responded to over 500 search missions and several hundred public-relations events. Congratulations to Joe, the head engineer of OCSO/Communications & Technology.

## “Grantfather” Makes It Happen for OCRACES

Denis Marin, K6OLU, is a very good friend of OCRACES. He has been employed by the Orange County Sheriff's Department, Communications & Technology Division, since March 2008 as manager of the Program Support Section. He is responsible for several of the Division-wide support Units, including the Customer Service Desk, the Warehouse/Parts/Procurement, and the Information Systems Unit, and is the Administrative focal point for the 800 MHz Re-banding program. He is also the focal point for Special Projects, including the Hot Red Radio for Law Enforcement, and the Moro Ridge CCCS Radio Site Development in Crystal Cove State Park.

In addition to the above, Denis is a member of the Division's Communications Response Team, which serves the Operational Area at the EOC for communications alert and warning, and other deployments of an emergency nature. He is a DHS trained Communications Unit Leader (COML) and a Communications Unit Technician (COMT), and has completed ICS 100 through 800 training.

One of Denis's principal responsibilities is the administration and oversight of grant-funded communications projects. This starts with awareness of potential funding sources. When these become visible, he must qualify them as to applicability and eligibility, and work with various people within the Communications & Technology Division, including OCRACES, to get the appropriate submittals (called Investment Justifications, or IJs) prepared. If the Investment Justification is accepted by the administrator of that particular funding source, they make the funding commitment to the Division, which then allows the Division to proceed with the project. The Division must then justify and procure all hardware through the normal County purchasing procedure. In the case of fixed equipment installations, grant regulations require a great deal of additional justification (such as Environmental Impact and Historic Site Preservation filings).

The Communications & Technology Division maintains close working relationships with the Anaheim/Santa Ana and State Homeland Security Grant Administration Offices, who serve as the go-between with the State and Federal agencies who provide the funds, and often expedite the process on the Division's behalf.

Throughout the performance period of the project, which is either two or three years in duration, Denis must provide quarterly progress reports to satisfy the requirements of DHS/FEMA (the source of grant funds), as well as the local Grant Administration Offices. When the project is complete, he must make sure all vendor invoices are paid, and all required financial paperwork is submitted to the responsible Grant Administration Office before the deadline in order to be reimbursed for the equipment purchases.

The RACES 146.895-MHz wide-area repeater system and the entire Winlink network (as well as the subsequent replacement of the Alinco radios) were procured through grant funding, which amounted to a taxpayer-funded “gift” of almost \$500,000. Since 2004, over \$20,000,000 in grant funding has been obtained by OCSD Communications for many projects, which would not have been possible without federal grant funding.

Denis has been involved with the Land Mobile Radio industry for almost fifty years. As a youngster growing up in Beverly Hills, he was enthralled by their Police Department and specifically the radio system, which at that time was on 37 MHz, using AM. Since then, he has been torn between radio and law-enforcement interests, and fortunately his career enabled both.

Along the way, Denis has also been a dispatcher for LAPD, and a Class 1 Reserve Deputy Sheriff in L.A. County. He holds an FCC General Radiotelephone license, and has been a licensed amateur radio operator (K6OLU) since 1956.

Denis was employed for five years at Advanced Electronics as an installer, bench tech, field tech, mountain-top site tech, and shop supervisor. Over the next 26 years, he worked for Motorola as a Field Technical Representative, then in Hawaii, wearing FTR, Technical Services Manager, Project Manager, and Engineering Manager hats. He was then promoted to Senior Systems Engineer in Motorola's International Division, and was tasked with developing a post-sale Project Engineering Group, to provide complete, staged, tested, and pre-installed systems being shipped overseas. He has also served as the liaison between Motorola's Cellular Group, National Service Organization, and customers during the rollout of the first cellular systems in Boston, New York, and Philadelphia. He has managed Motorola's Central Systems Organization, founded the National Strategic Program Management organization, and served as Pacific Division's Director of Marketing and Revenue Businesses.

Shortly after retiring from Motorola, Denis came back to California to work for Los Angeles County as a Senior Telecommunications Engineer, where he was responsible for all operations of the 800 MHz, Countywide Integrated Radio System (CWIRS), including network maintenance, redesign of the Infrastructure, additions of “small-cell” fill-in systems, customer interface, radio programming, and resolving system problems.



## 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**

### Newport Beach RACES

On Saturday, April 26, 2014, from 9:00 AM until 12:00 noon, the Newport Beach Fire Department hosted a Community Emergency Response Team (CERT) Neighborhood Drill for Newport Beach neighborhoods with organized CERT teams. Eight neighborhoods participated.

The drill utilized the new Volunteer Management Room within the EOC to receive and send information and to test how impacted neighborhoods would be with multiple communications tested included: ham radio use by FCC-licensed operators (CERT Comms and RACES only); radio operators who are not licensed hams but who use radios for internal communications among team; and Twitter feeds to and from participating neighborhoods.

The drill scenario was a 7.2 magnitude earthquake at 8:37 AM along the Newport-Inglewood fault, with the epicenter one mile inland from Hoag Hospital, interrupting telephone, electricity, and water service. At 9:00 AM, Newport Beach RACES announced the start of the drill and proceeded with check-ins of CERT and RACES communicators.

### Hospital Disaster Support Communications System (HSDSCS)

HSDSCS will hold an open house for the public and an examination session for all classes of Amateur Radio license on Sunday, May 18, 2014 at Care Ambulance headquarters, 1517 West Braden Court in Orange. The open house will be 1:30 to 5:30 PM with HSDSCS displays plus representatives of some of the served hospitals. Care Ambulance staff members will also be present to show some of their equipment. The optional testing session

is open to HDSCS members and non-members alike and starts at 2:30 PM. Those wishing to take a test should register in advance by contacting Ken Simpson, W6KOS, by phone (714-651-6535) or e-mail (w6kos@arrl.net). Ken will need your phone number, e-mail address, and level(s) of license that you will test for. He will reply via e-mail with testing details and what to bring. Amateur radio talk-in will be on K6QEH/R, 146.970 MHz, 136.5 Hz PL.

### Army Reserve

Roman Kamienski, KG6QMZ, has announced that the next Communications Exercise ("COMEX") sponsored by the Army Reserve at the Costa Mesa Army Reserve Center, 2651 Newport Boulevard, will be held on Saturday, June 7, 2014. Start time will be about 0830. OCRACES will exhibit its emergency communications response vehicle, and members are asked to show up at about 0800 for setup. Last year we saw a massive HF log periodic antenna on top of a tall tower at the center. This year, Roman says he will attempt to rotate it toward Hawaii for the COMEX. Recently, he has made both MARS and ham contacts in Northern California and Tucson, Arizona, with the antenna pointed south at 40 watts. He is looking to get ham and MARS participation from Hawaii for the COMEX.

### Ham Radio Outlet

Ham Radio Outlet, 933 N. Euclid Street, Anaheim, will hold its annual Ham Jam on Saturday, June 21, 2014 (the week before Field Day). OCRACES will exhibit its emergency communications response vehicle from 1000 until about 1730. HRO will award prizes throughout the day. With the many hams in attendance, this is an opportunity to recruit new RACES members.

## Field Day: June 28-29

OCRACES will once again be active in Field Day on the weekend of June 28-29, 2014, at Craig Regional Park in Fullerton. This year, leadership has been split in accordance with basic Incident Command System procedures, with Sgt. Jack Barth, AB6VC, in charge of Planning, Sgt. Bob McFadden, KK6CUS, in charge of Logistics, and Lt. Ralph Sbragia, W6CSP, in charge of Operations. Capt. Ken Bourne, W6HK, will be the Incident Commander.

Planning meetings will be scheduled in advance of Field Day. All OCRACES members are asked to advise of their availability and to sign up for operating shifts. More information will appear in e-mails and the June issue of *NetControl*.

# May 2014

## Upcoming Events:

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3 City/County RACES & MOU Drill
4	5 OCRACES Meeting & Weekly ACS Net	6	7	8	9	10
11	12 Weekly ACS Net & Cooperative T-hunt	13	14	15	16	17
18	19 Weekly ACS Net	20	21	22	23	24
25	26 Memorial Day (no nets)	27	28	29	30	31

- **May 3:** City/County RACES & MOU Drill, 0900-1100
- **May 5:** OCRACES Meeting, 1930, 840 N. Eckhoff Street, Suite 104, Orange
- **May 12:** OCRACES Cooperative T-hunt, 1920, input of 2-m repeater (146.295 MHz), bearings compared on 449.100 MHz repeater
- **May 26:** Memorial Day (no nets)
- **June 3:** Primary Election Ballot Transportation
- **June 7:** COMEX, Costa Mesa Army Reserve Center, 0830-1100
- **June 16:** City/County RACES & MOU Meeting, 1915, 840 N. Eckhoff Street, Suite 104, Orange
- **June 21:** Ham Jam, HRO, 1000-1730
- **June 28-29:** Field Day, Craig Park



[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

- 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: 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 Manager  
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 714-704-7979

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  
 Ernest Fierheller, KG6LXT  
 Bob McFadden, KK6CUS  
 Tom Tracey, KC6FIC

## County of Orange RACES

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# County of Orange RACES

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Questions or Comments?  
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**“W6ACS ...  
Serving  
Orange County”**

## Meet your County of Orange RACES Members!



Ken Bourne  
W6HK



Scott Byington  
KC6MMF



Harvey Packard  
KM6BV



Ralph Sbragia  
W6CSP



Delia Kraft  
KF6UYW



Marten Miller  
KF6ZLQ



Robert Stoffel  
KD6DAQ



Jack Barth  
AB6VC



Jim Dorris  
KC6RFC



Ernest Fierheller  
KG6LXT



Bob McFadden  
KK6CUS



Tom Tracey  
KC6FIC



John Bedford  
KF6PRN



Randy Benicky  
N6PRL



Bill Borg  
KG6PEX



Chuck Dolan  
KG6UJC



Nancee Graff  
N6ZRB



Ray Grimes  
N8RG



Walter Kroy  
KC6HAM



Martin La Rocque  
N6NTH



Brian Lettieri  
K16VPF



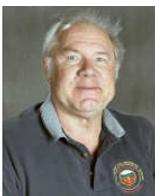
Sue Mickelson  
KJ6LCJ



Fran Needham  
KJ6UJS



Tom Riley  
K6TPR



John Roberts  
W6JOR



Joe Selikov  
KB6EID



Ken Tucker  
WF6F



Brian Turner  
K16WZS