

September 2015



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

Preparing for El Niño

An article by David Whiting in the September 6th issue of *The Orange County Register* covered preparations being made in Orange County canyons for floods and mudslides, due to predicted El Niño conditions. Are you ready to respond, if RACES is activated to provide auxiliary emergency communications to OCSO or other agencies in Orange County during these El Niño storms?

Whiting mentions that Alex Tardy, a warning coordination meteorologist for the National Weather Service, "... has data that confirms this year will see the strongest El Niño by temperature and size in recorded history. Tardy is quick to explain that it doesn't mean Orange County will necessarily have the rainiest season ever. But we will see rains the county hasn't seen for nearly two decades."

Whiting says that Tardy reports we may start seeing storms as early as late October. The brunt, however, will start in late December or early January and last through March.

"It's not going to be the type of rain we see from mega-storms," Tardy allows. "It will be repeated storms, one after another, with little breaks between."

Whiting said that those storms will have tremendous impact over time, especially in areas that have seen slides before, such as Laguna Beach, and where fire has destroyed plants that knit hillsides together, such as Silverado Canyon.

"Rivers and coastal erosion areas will

get saturated," Tardy predicts. "There will be flooding of the kind most people won't remember. It will have been 20 years since we've seen anything like this."

Tardy emphasizes, "Sooner or later you're going to get a storm with intensity that comes through and tips the bucket with landslides." He said canyon residents need to start preparations now.

OCRACES members need to be prepared as well. Be ready for shifts at the EOC RACES Room, to receive reports from members deployed as observers to areas hit by floods, mudslides, road closures, and bridge failures, and where evacuations might be required, and to transmit status bulletins on OA1, OA2, WEROC, and County Access frequencies, as well as over our 2-meter repeater.

Being ready involves many different factors, including how to field-program your radio equipment, your familiarity with all the equipment in the EOC RACES Room and in the OCRACES van, the condition of your go-kits (duty bags), your knowledge and training on deployment policies and the use of FEMA forms, and the condition of your uniform. If you have not already done so, purchase a uniform jacket for approaching chilly weather.

Be ready for any kind of duty, even if it doesn't involve using amateur radio equipment. For example, be willing to pitch in wherever needed, such as manning the phones in Rumor Control, moving apparatus, setting up shelters, etc.

Keep a copy of procedures (*OCRACES Information Manual*) handy at all times.

**The Next
OCRACES
Meeting Is**

**September 14, 2015
1930 Hours**

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

**Severe Fire Weather
Patrol Training**



ARRL EmComm Course Offered at Red Cross

Dave Popko, AF6TN, Orange County Activity Lead, Disaster Services Technology—Communications, American Red Cross, advises that a two-day ARRL emergency communications course will be offered at the Orange County Red Cross Chapter Office, Room 208, 600 Park Center Drive, in Santa Ana, on Saturday, October 10, 2015, and Saturday, October 17, 2015, from 8:00 AM until 5:00 PM on both days. Arrive between 7:30 and 7:45 AM and enter at the “After-hours” door from the rear parking lot between the loading dock and the blood services department. Lunch break is 30 minutes, and bring your own lunch. Dave says, “This two-day (16-hour) course is one of the best training opportunities available for all aspects of emergency radio communications, including net operations, best practices, and proper operating techniques. The principles apply broadly to many types of ‘EmComms,’ and, while they are an excellent ‘fit’ for amateur radio, they are not exclusive to that field and you do not need a radio license for this course to be of notable benefit.”

“Introduction to Emergency Communication (EC-001)” is provided by the American Radio Relay League. The training is conducted in a classroom setting and the instructor is an ARRL qualified trainer who has taught the course on many occasions since 2009. Each scheduled course will be current with the latest information available. The class given is a hybrid format that allows the instructor the opportunity to introduce information that is particularly relevant to the local community and to areas of interest and applicability of the attendees. During training, the instructor and guest speakers will explain how the content of the course fits with the kinds of emergency responses that attendees might be called upon to engage in within the scope of their particular functions.

An *optional* final exam is given at the end of the second session for the purpose of qualifying for a certificate of successful completion from ARRL. The cost for taking the *optional* exam (for certification purposes) is \$15 and requires a passing score of 80% or higher to receive certification.

The course is open to all amateur radio operators and to those who work with disaster services groups and emergency communications organizations such as CERT, MARS, SHARES, REACT, CAT, SKYWARN, ACS, SATERN, RACES, Red Cross D.S.T, ARES, and other similar organizations.

Prerequisites for taking the course include certificates of completion for two specific, brief on-line (no-cost) FEMA classes. FEMA and the Department of Homeland Security have established and published nationwide standards for interoperations between federal, state, local, and municipal governments and public-safety/public-service organizations. The underlying basis of these principles centers on the National Incident Management System (NIMS) and the Incident Command System (ICS). These guidelines and standards are essential to all forms of communications and message transfer between organizations and jurisdictions. While these organizations provide dozens of topics and courses for the wide variety of emergency response and disaster recovery operations, persons attending the ARRL EC-001 course require a basic and general understanding of the ICS and NIMS as a foundation to the training that will be provided. Two courses, in particular, provide these essential basics:

- IS-100.b Introduction to the Incident Command System (ICS-100)
- IS-700.a National Incident Management System (Introduction to NIMS)

If you have not already done so, please take each of these 30-to-60-minute courses on-line at no cost and bring a copy of the certificate of completion that is downloadable immediately upon on-line completion. To take these on-line courses, go to <http://training.fema.gov/emiweb/is/is100b.asp> and <http://training.fema.gov/emiweb/is/is700a.asp>.

You must have a current class manual: *ARRL EC-001, 4th EDITION*. You may order one from the ARRL Web site (<http://www.arrl.org/shop/Introduction-to-Emergency-Communication-Course/>) for \$24.95 plus shipping, or you may purchase one on the first morning of the class for \$20.00 from the instructor (only personal checks or money orders payable to Carl Gardenas are accepted. It is highly recommended that you have and review the manual before class.

To register for this course, send an e-mail to dave.popko@redcross.org, stating that you wish to attend. Include your name and preferred return e-mail address so that Dave can confirm your registration for the class. Include a phone number, in the event they need to notify you of any changes. If you are a member of CERT, RACES, or other emergency services group, note that affiliation in your e-mail. If you have an active amateur radio license, include that in your contact.

The course has six sections with 29 lesson topics. It includes required student activities and is expected to take approximately 16 hours as an instructor-led, in-classroom presentation plus a homework assignment to be forwarded to the instructor upon completion if a certificate of completion is desired. The learning tract may also be taken on-line as a 9-week, 45-hour training program at a cost of \$50 for ARRL members, or \$85 for non-members.

The course syllabus includes: **Section 1: The Emergency Framework: How You Fit In:** 1. Introduction to Emergency Communications. 2. Amateurs as Professionals. 3. Network Theory and Design. 4. Emergency Communications Organizations and Systems. 5. Served Agency Communications Systems. **Section 2: The Networks for Messages:** 6. Basic Communications Skills. 7. Net Operations. 8. The Net Control Station. 9. Net Control Station Operator Practices. 10. The Net Manager. 11. Introduction to the National Traffic System. 12. Specialized Net Operations. 13. Severe Weather Nets. **Section 3: Message Handling:** 14 and 15. Basic Message Handling/digital mode. **Section 4: What Happens When Called:** 16. The Incident Command System. 17. Preparing for Deployment. 18. Equipment Choices. 19. Emergency Activation. 20. Setting Up Initial Operations and Shutdown. **Section 5: Considerations:** 21. Operations & Logistics. 22. Safety & Survival. 23. ARES PIO: The Right Stuff. 24. Alternate Communications Methods. 25. What to Expect in Large Disasters. 26. Hazardous Materials Awareness. 27. Marine Communications. **Section 6: Alternatives and Opportunities:** 28. Modes, Methods, and Applications. 29. Other Learning Opportunities.

For further information, contact Carl Gardenas at wu6d@arrl.org or Alan Pearson at kb6dmz@arrl.net.

Fire Patrol Training at September 14th Meeting

The next OCRACES Meeting is on Monday, September 14, 2015, at 7:30 PM, at 840 N. Eckhoff Street, Suite 104, in Orange. At this meeting we will receive our annual Severe Fire Weather Patrol training from the Orange County Fire Authority.

WA6TWF Becomes OCRACES Member

Welcome to David Corsiglia, WA6TWF, who is now a member of County of Orange RACES. David is a Senior Communications Technician with the Orange County Sheriff's Department, Communications & Technology Division. He is an OCSO Reserve Lieutenant in the Aero Squadron Reserve Unit, and has been a Reserve for more than 42 years. He has been a good friend of OCRACES for many years, giving presentations at our meetings, assisting our members with technical advice, and participating as fox in our cooperative T-hunts.



David Corsiglia, WA6TWF, and his airplane at the Fullerton Airport.

David offers to conduct a mobile and handheld radio tune-up on a Saturday at Eckhoff. Members could bring their radios in and David would put them on a service monitor to make sure they are on frequency, have correct deviation, etc.

David runs a 70-cm system of six repeaters in Southern California. The WA6TWF Super System makes it possible to communicate not only with local hams and emergency services (via autopatch) but also with hams throughout the world via the remote-base links. The system includes HF remote-base capability and a D-STAR repeater. System members can control band selection, frequency (either direct input or scan at various speeds), and beam direction through DTMF tones.

David started putting up repeaters when he was 18 years old. With the help of his friends, he organized and put up the WR6AAA repeater system on Catalina Island. This was the first amateur repeater on an island, and also the first repeater at the time under the FCC's new rules for repeaters that required a continuously monitored control system. Two years after the repeater system had been installed, David turned it over to the Catalina Repeater Association, which still maintains it.

HAMCON: September 11th-13th

HAMCON, the ARRL's Southwestern Division Convention, will occur on September 11-13, 2015, at the Torrance Marriott South Bay Hotel, 3635 Fashion Way, in Torrance. Featured are "Tech Talks," exhibits, amateur radio license exams, banquet, Wouff-Hong Ceremony, drawings, and hidden transmitter hunts. See <http://www.hamconinc.org> for a complete schedule.

"Tech Talks" of particular interest to RACES members on Saturday, September 12th, include: "Transmitter Hunting: Past, Present, and Future," by Joe Moell, KØOV (9:00 AM); "All the Phones Are Down at the Local Hospital—How Would You Know?—What Would You Do?" by HDSCS Coordinator April Moell, WA6OPS (10:00 AM); "Present and Future of County-Affiliated Disaster Amateur Radio," by Los Angeles County DCS Chief Communications Officer Robert Sussin, WK6W, Orange County RACES Chief Radio Officer Ken Bourne, W6HK (assisted by Training Officer Tom Tracey, KC6FIC), and San Bernardino County ECS Chief Radio Officer Keith Morris, KC6ZGG (11:00 AM); "Emergency Communications: Change or Obsolescence," by KPARN Coordinator Duane Marriotti, WB6RER (11:00 AM); "Reporting Emergencies," by Chris Storey, KA6WNL (2:00 PM); "AREDN—Amateur Radio Emergency Data Network," by Andre Hansen, K6AH (2:00 PM); and "Trending Topics in Emergency Communications," by ARES District Emergency Coordinator Gary Wong, W6GSW (3:00 PM) and Robert Martellino, KJ6BBX (4:00 PM).

K6IBH Hides in Irvine

Kathleen Nelson, K6IBH, was the fox on the cooperative T-hunt held after the OCRACES 2-meter net on Monday night, August 10, 2015. She hid in the parking lot of the Arnold D. Beckman High School near the corner of Bryan Avenue and El Camino Real in Irvine.

First to find the fox was Bob McFadden, KK6CUS. Recently added to his collection of effective hunting equipment, including a Global TSCM Doppler system and a VK3YNG VHF Sniffer, is a home-built three-element tape-measure yagi. It only took Bob a few minutes to build the antenna, using PVC pipe, caps, and cross tees, pieces of a tape measure, stainless-steel hose clamps, and a few inches of wire for a hair-pin match. Several articles appear on the Web on how to quickly and easily build this inexpensive antenna, such as <http://nt1k.com/blog/2012/vhf-3el-tape-measure-yagi/>. Combine it with a transceiver and a variable attenuator, and you're good to go for t-hunting. Now you should have no excuse to participate in our monthly cooperative T-hunts! The next hunter to find Kathleen was Ron Allerdice, WA6CYY. Arriving last was Ken Bourne, W6HK, accompanied by Jack Clough, KK6VNB. This was Jack's first time on a T-hunt, and he found it very enjoyable.

The next cooperative T-hunt will be held on Monday, October 12, 2015, immediately following the OCRACES 2-meter net (approximately 7:20 PM). There will be no hunt in September, due to rescheduling of meetings because of the Labor Day holiday. The fox on October 12th 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 hide in a sector of Orange County to be announced a few days before the hunt. The location will be on paved, publicly accessible property. No fees will be required to drive directly to the fox.



Ron Allerdice, WA6CYY, Bob McFadden, KK6CUS, Kathleen Nelson, K6IBH, and Jack Clough, KK6VNB (left to right), are gathered around the fox box at the Arnold D. Beckman High School

Icom Announces IC-7300 HF Transceiver

Icom has announced the IC-7300 HF/50 MHz transceiver, which is pending FCC approval. It features a real-time, high-resolution spectrum scope with waterfall function. Instead of the conventional superheterodyne system, the IC-7300 utilizes an RF direct sampling system, common to software-defined radios (SDRs). RF signals are mostly processed through the FPGA (Field Programmable Gate Array), making it possible to eliminate physical mixer and filter devices and to offer a high-performance real-time spectrum scope in a compact package. The RF direct sampling system improves phase-noise characteristics of both receive and transmit signals. A large touch-screen color TFT LCD with software keypad can be used for setting various functions and editing memory contents. Pushing the multi-dial knob shows menu items on the right side of the display. A touch of the screen selects an item, and levels are adjusted by turning the multi-dial knob. An automatic antenna tuner is built in. Other features include voice memory, memory keyer for CW and RTTY, RTTY decode log, screen capture, SD card slot, USB for CI-V and audio input/output, multi-function meter, 101 memory channels (99 regular and two scan edge), multiple CW functions, digital noise reduction, 100 W output power, and SSB, CW, RTTY, AM, and FM modes.



Surprise Your Friends with a New Call Sign

The Amateur Radio vanity call sign regulatory fee is set to disappear soon. According to information gathered from FCC sources by the ARRL, the first day that applicants could file a vanity application without having to pay a fee was Thursday, September 3, 2015. In deciding earlier this year to drop the regulatory fee components for Amateur Radio vanity call signs and General Mobile Radio Service (GMRS) applications, the FCC said it was doing so to save money and personnel resources. The Commission asserted that it costs more of both to process the regulatory fees and issue refunds than the amount of the regulatory fee payment.

“Our costs have increased over time, and now that the costs exceed the amount of the regulatory fee, the increased relative administrative cost supports eliminating this regulatory fee category,” the FCC said in its *Report and Order*, which appeared on July 21st in *The Federal Register*. “Once [it’s] eliminated, these licensees will no longer be financially burdened with such payments, and the Commission will no longer incur these administrative costs that exceed the fee payments.”

The FCC raised the Amateur Service vanity call sign regulatory fee from \$16.10 to its current \$21.40 for the 10-year license term in 2014. The \$5.30 increase was the largest such fee hike in many years. In a typical fiscal year, the FCC collected on the order of \$250,000 in vanity call sign regulatory fees.

The FCC said the revenue it would otherwise collect from such regulatory fees “will be proportionally assessed on other wireless fee categories.” Congress has mandated that the FCC collect nearly \$340 million in regulatory fees from all services in fiscal year 2015.

DHS Interoperability Bill Signed into Law

The Department of Homeland Security (DHS) Interoperability Communications Act (HR215), which requires the DHS Under Secretary for Management to maintain interoperable communications among the components of the department, was signed into law on July 6, 2015, by President Obama.

Under the new law, DHS is also required to create and submit to Congress a strategy to achieve department-wide interoperable communications that includes known interoperability challenges and gaps and projected milestones. New Jersey Democrat Rep. Donald Payne Jr., ranking member of the Homeland Security Subcommittee on Emergency Preparedness, Response, and Communications, introduced the bill in response to DHS’s ongoing lack of a robust and comprehensive interoperable communications strategy.

The DHS Interoperable Communications Act is the first bill of 2015 to pass out of the Committee on Homeland Security and be signed into law. The act was earlier amended and passed by the Senate.

In a November 2012 audit of DHS’s oversight of interoperable communications, DHS’s Office of Inspector General (IG) found that over 10 years since the September 11, 2001, terrorist attacks, only 0.25 percent of the radio users by DHS components could access and communicate over the specified common channel. Additionally, only 20 percent of the radios had the correct settings for the common channel.

In a May 2015 verification of its 2012 audit, the IG found that, although DHS had begun initiating corrective actions, the plans had not been finalized and there was no timetable to do so. Consequently, DHS was unprepared for emergencies and lacked proper communications capabilities for daily operations and planned events.

“This is a great victory for New Jersey and for our entire nation,” said Payne. “The law sets up the Department of Homeland Security to finally achieve department-wide interoperable communications, a necessity for ensuring the safety of DHS personnel and the communities they serve. I thank President Obama for swiftly signing the DHS Interoperable Communications Act into law. And just as I fought to get this vital legislation done, I will continue to fight to make sure emergency personnel are fully prepared to protect the safety of our communities.”

Next City/County Meeting: September 21st

The next City/County RACES & MOU meeting is on Monday, September 21, 2015, at 7:15 PM, at 840 N. Eckhoff Street, Suite 104, in Orange. At this meeting we will discuss plans for the October 3rd City/County RACES & MOU drill.

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

Anaheim RACES

The URL for the City of Anaheim official RACES Web site has been changed to <http://www.anaheim.net/1209/RACES>. The RACES unit's other Web site is <http://www.anaheimraces.com>.

Mission Viejo RACES

Joe Ayres, AE6XE, Mission Viejo RACES, AREDN Development Team, reported that a Document Share is now hosted out of the Mission Viejo EOC online on the OC Mesh network by the MVRACES unit and is available for usage by other Cities and groups that wish to participate. See <http://www.aredn.org>. "This Document site (and this RF mesh network in general) is in early stages as we learn and develop these capabilities and workflows," said Joe.

Mission Viejo RACES, Tri-Cities RACES, and Laguna Niguel ACS units are planning to exchange documents during their September drill. This adds a significant new ability for Cities to share information when all else fails that could not otherwise be communicated by voice—e.g., detailed medical status of injuries, logistics inventories, updated operational procedures, incident duty schedules, and more.

Joe invites any RACES unit that wishes to participate to contact him. The tool that they are testing, thanks to the recommendation of Joe Lopez, W6BGR, is <http://www.rejetto.com/hfs/>. This is a network efficient application with capability to manage document access (upload, delete, download) by groups and users. No special installation is necessary on your computer—just browse to "<http://mvraces-winlink.8080>" after connecting to the OC mesh and send Joe a request for a login account.

Joe also reported on other happenings of the OC Mesh network. He and Don Hill, KE6BXT, made detailed measurements at Pleasants Peak on August 1st. Installation of 2 GHz, 3 GHz, and 5 GHz mesh nodes were targeted for August 21st. Coverage is

extended to parts of Riverside and Los Angeles Counties, in addition to all of Orange County.

Joe said that <http://www.aredn.org> is nearing the release of new firmware to add Part 97 only channels to the options. The OC mesh is already running the beta release on "Channel -2" for 2.4 GHz and the new 3 GHz band. "This is so quiet we have been amazed at the distance achieved and still getting 100% link qualities out past 15 miles with \$90 devices plus laptop (able to transmit multiple HD video streams).

Joe mentioned southwest region mesh backbone planning. Several individuals with existing access to over 20 mountain peaks, Joe included, have formed a group to build out a mesh RF backbone from the Mexican border to the Bay Area. Many of these sites and individuals have had packet networks in place for 30 years, and this essentially upgrades or adds high-speed data links to these sites. Equipment is currently being installed at Palomar and three other mountain sites in the San Diego area by Andre Hansen, K6AH. In Orange County, the Pleasants Peak site is targeted to link with Los Angeles/Ventura groups, Orv Beach, W6BI, and others, at Verdugo Peak.

Orange County Transit Authority

OCTA is hosting a 2015 Bus Rodeo and Carnival Disaster Preparedness Expo on Saturday, September 19, 2015, from 12:00 PM to 3:00 PM, with participant staging and setup starting at 11:00 AM. Most participants will stage at the base's east side entrance at the end of Moore Avenue. The event will be the Santa Ana Bus Operations and Maintenance Base at 4301 W. MacArthur Blvd. Partners from law enforcement, fire agencies, volunteer organizations, and private industry will be participating to provide disaster preparedness information to OCTA employees and their families. OCRACES will have a table at this event, but will probably not exhibit its emergency communications response vehicle due to space limitations.

September 2015

Upcoming Events:

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5 <i>Weekly 40 m ACS Net</i>
6	7 <i>Labor Day (no meeting, no net)</i>	8	9	10	11 <i>HAMCON</i>	12 <i>HAMCON</i>
13 <i>HAMCON</i>	14 <i>OCRACES Meeting & Weekly 2 m ACS Net</i>	15	16	17	18	19 <i>Weekly 40 m ACS Net & OCTA Disaster Prep Expo</i>
20	21 <i>City/County Meeting & Weekly 2 m ACS Net</i>	22	23	24	25	26 <i>Weekly 40 m ACS Net</i>
27	28 <i>All-Band ACS Nets & SWACS Radio Test</i>	29	30			

- **September 7:** Labor Day (no meeting, no net)
- **September 11-13:** ARRL Southwestern Division Convention (HAMCON), Torrance Marriott South Bay Hotel, 3635 Fashion Way, Torrance
- **September 14:** OCRACES Meeting
- **September 19:** OCTA Disaster Preparedness Expo, 1200-1500 (1115 setup), 4301 W. MacArthur Blvd., Santa Ana
- **September 21:** City/County RACES & MOU Meeting, 840 N. Eckhoff Street, Suite 104, Orange, 1915
- **September 28:** Southwest ACS Frequency/Radio test, 2015
- **October 3:** City/County RACES & MOU Drill, 0900-1100
- **October 18:** OCSD Reserve Bureau Picnic, Irvine Lake
- **November 17:** Mutual Agency Regional Radio Interoperability Training Exercise (MARRITE)



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)
- 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

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It's Where It's @!

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**“W6ACS ...
Serving
Orange County”**

Meet Your County of Orange RACES Members!



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KD6DAQ



Delia Kraft
KR6AFT



Ken Bourne
W6HK



Scott Byington
KC6MMF



Harvey Packard
KM6BV



Jack Barth
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