#### **April 2019**



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#### Next OCRACES Meeting

Monday, April 1, 2019, at 1930 Hours

840 N. Eckhoff Street, Suite 104, Orange

Discussion of Cybersecurity



Orange County Sheriff's Department Communications & Technology Division



Newsletter of the County of Orange Radio Amateur Civil Emergency Service

## Captain's Corner

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

#### Cyber War

It's common now to use computers to control our amateur radio transceivers and other RACES equipment, as well as to exchange e-mails between RACES members and our agencies, research information about radio-electronics technology on the Web, check the latest news, handle our finances, and much, much more. It's scary to think of our computers (or the accounts we access) getting hacked or infected with viruses or malware or, worst of all, ransomware. Can we protect ourselves and our computers? To some extent, yes, and I will share some valuable information about that at the next County of Orange RACES meeting on Monday, April 1st, at 7:30 PM, at 840 N. Eckhoff Street, Suite 104, in Orange. I also invite computer experts with cybersecurity experience to share their information as well at the meeting. We and our agencies and companies and nation are battling a cyber war, and it's getting increasingly vicious.

As reported on March 19, 2019, by Eva Hanscom on the Venafi Blog, Army Gen. Paul Nakasone, head of US Cyber Command, recently spoke about cyber threats to a congressional subcommittee. He said that cyberattacks from nation-state actors like Russia, North Korea, and Iran have increased in sophistication and intensity; some have even breached critical naval systems. As a result, the general recommended the United States become more prepared to aggressively strike back at their assailants.

Venafi, Inc. is a privately held cybersecurity company that develops software to secure and protect cryptographic keys and digital certificates. On its blog, Venafi stresses that this is a very tense time for the cybersecurity industry. At the RSA Conference in San Francisco this March, Venafi wanted to see how security professionals are responding to cyber war threats and offensive hacking proposals. They evaluated the opinions of over 500 convention attendees and the results were quite interesting. For example, 87% of the respondents say the world is currently in the middle of a cyber war. Participants were also asked about who should be allowed to take retaliatory hacking actions, and the results were mixed. For example, 72% believe nationstates should have the right to "hack back" by targeting cybercriminals who level attacks on their infrastructure. Meanwhile, 58% believe private organizations have the same right to "hack back."

I am not advocating that we, as RACES members, should "hack back." In fact, it's not legal, and we should not fight bad guys by being bad guys ourselves. But we can take steps to protect ourselves, and I will share some of those steps at the April 1st OCRACES meeting (no fooling!).

The Computer Fraud and Abuse Act (see https://www.law.cornell.edu/uscode/text/18/1030) prohibits many retaliatory cyber defense methods, including accessing an attacker's computer without authorization. The Active Cyber Defense Certainty (ACDC) Act (https://www.congress.gov/bill/115th-congress/house-bill/4036/text) addresses active cybersecurity defense methods and was introduced to the U.S. House of Representatives in October 2018.

## Captain's Corner Continued from page 1

The ACDC Act proposes "to provide a defense to prosecution for fraud and related activity in connection with computers for persons defending against unauthorized intrusions into their computers."

Referring to "hacking back," Venafi's Kevin Bocek says, "Today, private companies do not have a legal right to actively defend themselves against cyberattacks. Even if this type of action were to become legal...it's nearly impossible to be certain about attack attribution because attackers are adept at using a wide range of technologies to mislead security professionals. For many organizations, it would be better to focus on establishing stronger defense mechanisms."

You can be sure that cybercriminals are constantly trying to hack into the Orange County Sheriff's Department's computer network, and that OCSD's Information Systems Bureau is maintaining the strongest defense mechanisms. As individual RACES members, we also need to maintain a strong defense against cybercriminals. We must use the strongest passwords. We must be careful about opening e-mail links and attachments. We must avoid accessing some websites. We must install effective anti-virus and anti-malware software, enable firewalls, and control our browsers and apps. We must strengthen our defenses as cybercriminals increase the sophistication of their attacks. Let's explore that at our April 1st meeting!

## Sonoma County ACS Activates for Flooding

Except for a brief activation on February 2, 2019, the wet weather we have been having in southern California has not been so severe that County of Orange RACES has been required to activate as extensively as some ACS/RACES units have had to do in northern California. Nevertheless, we have been on standby and ready to serve if we receive the call to activate. Meanwhile, it's good to observe how the ACS/RACES units north of here have been serving their agencies during the recent storms.

For example, Sonoma County ACS rallied to assist in February after heavy rain led to flooding in the region. While no actual communications emergencies occurred during the weather event, Sonoma County ACS members provided "needed eyes" and were available in case further assistance was needed. Sonoma County ACS Radio Officer Dan Ethen, WA6CRB, said heavy rainfall on fire-scarred areas resulted in flooding along the Russian River.

"During February, the Sonoma County Auxiliary Communications Service activated, providing communications services to the Sonoma County Fire and Emergency Services Department," Ethen reported. "On February 13 and 14, ACS volunteers staffed the Sonoma County Operational Area Emergency Operations Center. Mobile ACS Field Units were assigned to patrol the burn-scar areas that were a result of the Complex Fire Storm in October of 2017."

"All-Hazard Road Patrols" observed and reported downed powerlines and trees, mudslides and landslides impacting traffic flow, and debris issues that posed problems with water drainage and road flooding," Ethen said.

From February 26th to 28th, ACS members staffed the Sonoma County Operational Area EOC and the Graton Fire Incident Command Post (ICP). They provided backup communications capability between the EOC and ICP to support the evacuation of residents in the Russian River flood area. Sonoma County recommended on February 26th that residents living near the Russian River evacuate, after the river was forecast to crest at nearly 46 feet by the following evening.

ACS members continued "All-Hazard Road Patrols" while operating on the countywide 2-meter repeater system. "Mobile patrol units were also tracked on APRS and were visible to the EOC radio operators to ensure safety and accurate location reporting of any observed hazards," Ethen said.

"ACS volunteers remain ready to serve their communities," Ethen said. "We currently have 131 dedicated and trained communications volunteers focused on supporting our communities throughout Sonoma County."

Sonoma County ACS supplements government disaster communications on a volunteer basis. It is a part of local government and operates under the authority of the Sonoma County Fire and Emergency Services Department. Members provide communications between the County and its jurisdictions, county and city governments, and neighboring county governments.

County of Orange RACES operates in a similar fashion, as part of the Orange County Sheriff's Department, Communications & Technology Division, and is also prepared to support OCSD's Emergency Management Division. Twenty-two cities in Orange County are served by their own ACS/RACES units. City and County RACES units are prepared to work together, sharing communications resources to bolster their effectiveness. We encourage our members to enhance our communications capabilities, such as tracking our locations via APRS as Sonoma County ACS members do.

# **Next OCRACES Meeting: Monday, April 1st**

The next County of Orange RACES meeting will be on Monday, April 1, 2019, at 7:30 PM, at OCSD Communications & Technology Division, 840 N. Eckhoff Street, Suite 104, in Orange. At this meeting, OCRACES Chief Radio Officer Ken Bourne, W6HK, will give a presentation on cybersecurity, including how you can protect your computer from viruses, malware, hacking, and ransomware.

## ACS Radio Rodeo: Saturday, May 4th

County and City RACES Units will participate in the annual ACS Radio Rodeo on Saturday, May 4, 2018. Setup will begin at 0800 hours and operations will be from 0900 to 1100 hours. This exercise, which began as an Orange County event, is now hosted by the California Governor's Office of Emergency Services (Cal OES), and covers the 11 counties of the Southern Region. The primary purpose of the event is to conduct radio tests among RACES/ACS mobile communications vehicles and portable stations within an Operational Area and with adjoining OAs to verify their inter-agency interoperability. Each participating county in the exercise will have at least one central location where emergency communications vehicles will be gathered. The Orange County central location will be in the back parking lot of OCSD Communications & Technology Division, 840 N. Eckhoff Street, in Orange.

The exercise will follow standard ICS procedures. Everyone must sign the ICS 211 A Incident Personnel Check-in List when they arrive at the central location. An Incident Action Plan (IAP) will be distributed prior to the exercise. An ICS 205 Incident Radio Communications Plan will be used for the roll call.

The first operational hour (0900-1000) will consist of local roll calls of vehicles and portable stations at Eckhoff. Instead of 40 meters, our HF operation will be on 60 meters Channel 2 (5346.5 kHz USB dial frequency). We will also have a full roll call on the 146.895 MHz repeater, followed by abbreviated roll calls on the 448.320 MHz, 52.62 MHz, and 223.76 MHz repeaters. Scheduling and coordination will be on 146.595 MHz simplex.

During the second operational hour (1000-1100), Cal OES Southern Region will conduct roll calls. Pending finalization, these roll calls will be on 60 meters Channel 2, Cactus 70-cm linked system, SCRN 70-cm linked system, EARN 1½-m linked system, OCRACES 448.320 MHz repeater, LACDCS repeaters, Riverside County RACES repeaters, and Condor 1½-m linked system. Only one or two stations at Eckhoff will participate in the Cal OES Southern Region roll calls. During that second operational hour, local participants will inspect each other's mobile communications vehicles and portable stations, and optionally contact their EOCs or other non-centralized stations on their agencies' RACES frequencies. Antenna analyzers will be available for those who wish to adjust their portable HF antennas.

Debriefing will be at 1100 to 1115 hours, followed by demobilization.

## **Psychological First Aid for DSW Volunteers**

The Orange County Health Care Agency, Behavioral Health Services Disaster Response, will present a training course on "Psychological First Aid for Disaster Service Workers" on Thursday, April 11, 2019, from 9:00 AM to 11:30 AM. This course is geared specifically for volunteers from Citizen Corps programs (including RACES). The presenter is Nicole Reyes, LMFT, SCII. In this training attendees will learn about Psychological First Aid (PFA), an evidenced-informed modular approach that can help individuals in the immediate aftermath of a disaster or critical incident. This interactive training will include general information on PFA such as the basic objectives and tips for working with specialty populations as well as cover the 8 Core Actions that will enable responders to deliver PFA to those in need. The interactive training also provides attendees with sample scripts and the opportunity to rehearse the 8 Core Actions.

The objectives of this presentation include:

- Have a basic understanding of Psychological First Aid
- Understand and perform the 8 Core Actions of Psychological First Aid
- Learn cultural considerations for delivering Psychological First Aid
- 2.5 Continuing Education Credits have been approved for psychologists, LCSWs, LMFTs, LPCCs, and RNs. RAC-ES members, as Disaster Service Workers, are encouraged to receive this training.

The location for this course is OCSD/Emergency Management Division, Orange County Emergency Operations Center, 2644 Santiago Canyon Road, Silverado, CA 92676. Registration is required for this course. Contact Michelle Baldwin at mbaldwin@ocsd.org.

## **FCC Invites Comments on Tech Enhancement**

The FCC has invited public comments on ARRL's 2018 *Petition for Rule Making*, now designated as RM-11828, which asks the FCC to expand HF privileges for Technician licensees to include limited phone privileges on 75, 40, and 15 meters, plus RTTY and digital mode privileges on 80, 40, 15, and 10 meters. Interested parties have 30 days from March 15, 2019, to comment. The Technician enhancement proposals stemmed from the recommendations of the ARRL Board of Directors' Entry-Level License Committee, which explored various initiatives and gauged member opinions in 2016 and 2017.

"This action will enhance the available license operating privileges in what has become the principal entry-level license class in the Amateur Service," ARRL said in its Petition. "It will attract more newcomers to Amateur Radio, it will result in increased retention of licensees who hold Technician Class licenses, and it will provide an improved incentive for entry-level licensees to increase technical self-training and pursue higher license class achievement and development of communications skills."

#### **Filing Comments**

Those interested in posting brief comments on the ARRL Technician Enhancement proposal (RM-11828) using the Electronic Comment Filing System (ECFS) should access FCC Electronic Comment Filing System Express at https://www.fcc.gov/ecfs/filings/express. In the "Proceeding(s)" field, enter the number of the PRM, i.e., RM-11828 (using this format), complete all required fields, and enter comments in the box provided. You may review your post before filing. All information you provide, including name and address, will be publicly available once you post your comment(s). For more information, visit "How to Comment on FCC Proceedings" at https://www.fcc.gov/consumers/guides/how-comment.

Specifically, ARRL proposes to provide present and future Technicians with:

- Phone privileges at 3.900 to 4.000 MHz, 7.225 to 7.300 MHz, and 21.350 to 21.450 MHz.
- RTTY and digital privileges in current Technician allocations on 80, 40, 15, and 10 meters.

The ARRL petition points out the explosion in popularity of various digital modes over the past two decades. Under the ARRL plan, the maximum HF power level for Technician operators would remain at 200 W PEP. The few remaining Novice licensees would gain no new privileges under ARRL's proposal.

ARRL's petition points to the need for compelling incentives not only to become a radio amateur in the first place, but then to upgrade and further develop skills. Demographic and technological changes call for a "periodic rebalancing" between those two objectives, ARRL maintained in this proposal. The FCC has not assessed entry-level operating privileges since 2005.

The Entry-Level License Committee offered very specific data- and survey-supported findings about growth in Amateur Radio and its place in the advanced technological demographic, which includes individuals younger than 30. It received significant input from ARRL members via more than 8,000 survey responses. "The Committee's analysis noted that today, Amateur Radio exists among many more modes of communication than it did half a century ago, or even 20 years ago," ARRL said in its petition.

Now numbering some 384,500, Technician licensees comprise more than half of the US Amateur Radio population. ARRL stressed in its petition the urgency of making the license more attractive to newcomers, in part to improve upon science, technology, engineering, and mathematics (STEM) education, "that inescapably accompanies a healthy, growing Amateur Radio Service."

ARRL said its proposal is critical to develop improved operating skills, increasing emergency preparedness participation, improving technical self-training, and boosting overall growth in the Amateur Service, which has remained nearly inert at about 1% per year.

The Entry-Level License Committee determined that the current Technician class question pool already covers far more material than necessary for an entry-level exam to validate expanded privileges. ARRL told the FCC that it would continue to refine examination preparation and training materials aimed at STEM topics, increase outreach and recruitment, work with Amateur Radio clubs, and encourage educational institutions to utilize Amateur Radio in STEM and other experiential learning programs.

## **KC6MMF Hides in Tustin**

Scott Byington, KC6MMF, was the fox on the monthly cooperative T-hunt on Monday, March 18, 2019. He hid the fox box in a pavilion in Pioneer Road Park in Tustin and transmitted tones on the input (146.295 MHz) of the OCRACES 2-meter repeater. The first to arrive in the parking lot were Ken Bourne, W6HK, and Tim Goeppinger, N6GP. However, they did not see Scott's Ford Expedition and drove south on Pioneer Road, looking for Scott's vehicle. The signal got weaker and they realized that the fox box must have been a few feet east of the parking lot. By the time they returned to the parking lot, Scott's vehicle was there (Scott's wife, Pat, KC6ZHR, had driven it away temporarily) and so were Ron Allerdice, WA6CYY, who came in first, and Richard Saunders, K6RBS, who arrived right after Ron. After Ken and Tim also found the fox box, using a portable loop, Joe Moell, KØOV, ar-



At the fox's den are (left to right) Scott Byington, KC6MMF (the fox), Joe Moell, KØOV, Tim Goeppinger, N6GP, Richard Saunders, K6RBS, and Ron Allerdice, WA6CYY.

rived and quickly tracked down the fox box with his tape-measure beam.

The part bunt will be on Monday, April 15, 2019, immediately follows:

The next hunt will be on Monday, April 15, 2019, immediately following the OCRACES 2-meter net (approximately 7:20 PM). The fox will hide on paved, publicly accessible property in a city or sector of Orange County to be announced a few days before the hunt. He will transmit tones on the input (146.295 MHz) of the 146.895 MHz repeater. Hunters will compare bearings via the 448.320 MHz repeater and are encouraged to beacon their positions via APRS throughout the hunt. We are looking for a volunteer to be the fox, and a programmed fox box will be available.

The cooperative T-hunts are usually held on the third Monday of each month (except in October). The hunts provide excellent practice in working together to find sources of interference quickly. The hunts are not official RACES events, so DSW (Disaster Service Worker) coverage does not apply. Please drive carefully!

Fox-hunt loops and beams are available from Arrow Antenna and HRO, including the Arrow Model FHL-VHF fox-hunt loop (covers 1 MHz to 600 MHz) and the Arrow Model 146-3 three-element portable hand-held yagi. The Arrow OFHA 4-MHz offset attenuator can be useful when close to the fox, to prevent receiver overload. For on-foot hunting, the BC-146.565 three-element, hand-held, foldup, yagi antenna is available from Bob Miller Enterprises (http://www.rdfantennas.com), along with the VK3YNG MK4 sniffer. An all-mode transceiver is quite useful, allowing hunters to switch to the SSB or CW mode for detecting extremely weak signals, or to switch in a built-in attenuator, reduce RF gain, or tune slightly off frequency when dealing with extremely strong signals. Some hunters use the DF2020T radio direction finder kit, which is a Doppler system available from Global TSCM Group, Inc. (http://www.kn2c.us). A very similar system is the MFJ-5005 Doppler direction finder. Useful apps are available for iPhones and Android phones. For some excellent information on T-hunting, see http://www.homingin.com.

## RACES Members to Register under State DSW

Sheriff Don Barnes issued a letter on February 21, 2019, in which he states, "The County of Orange will be registering volunteers under the State of California's Disaster Service Worker program. Volunteers will include, but are not limited to: volunteers under the Citizen Corps Programs, including Radio Amateur Civil Emergency Service (RACES), Community Emergency Response Teams (CERT), and other volunteers who assist during a disaster. Under this State program, the County of Orange must designate "Authorized Officials" to register all volunteers and administer the loyal-ty oath for any Mass Casualty Exercise/Drill and Emergency Response before and during disasters, etc."

Within the list of those whom Sheriff Barnes authorized as the "Authorized Officials in registering Disaster Service Workers and administering the oath" is Lee Kaser, Orange County Sheriff's Communications. Sheriff Barnes also authorized the following in Sheriff's Emergency Management: Donna Boston (Director), Michelle Anderson, Stephen Barteau, Ethan Brown, Janell Harriman, Pei Lee, Vicki Osborn, Kevin McArthur, Fred Selayandia, Charles Volkel, and Grace Zambrana-Sutton.

# **RACES/MOU News from Around the County**



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

> w6hk@ ocraces.org

#### **Costa Mesa RACES (MESAC)**

The next MESAC meeting is on Wednesday, April 24, 2019, at 1830 hours, at the City of Costa Mesa EOC, 99 Fair Drive.

#### **Fountain Valley RACES**

The next Fountain Valley RACES meeting will be on Saturday, April 6, 2019, at 0800 hours, at the Fountain Valley Police Facility, 10200 Slater Avenue.

#### **Huntington Beach RACES**

Huntington Beach RACES has an informative page on the City of Huntington Beach website https:// www.huntingtonbeachca.gov/government/ departments/fire/emergency preparedness/ races/.

#### **Laguna Woods RACES**

Laguna Woods RACES Radio Officer Bruce Bonbright, NH7WG, reported that their website has changed and the new URL for the Laguna Woods Amateur Radio Club is https:// lagunawoodsvillage.com/amenities/clubs/ amateur-radio-club.

#### **Orange County Amateur Radio Club** (OCARC)

The next Orange County Amateur Radio Club meeting will be on Friday, April 26, 2019, at 7:00 PM. Arnie Shatz, N6HC, and Chip Margelli, K7JA, will give a presentation on "Using FT8 Mode in Contesting." The meeting will be at the American Red Cross (George M. Chitty Building), 600 Parkcenter Drive, in Santa Ana. Enter at the west door.

#### **Amateur Radio License Exams**

April 15, 2019: 6:00 PM (walk-ins allowed)

Sponsor: SOARA

Contact: Sean Reigle, AJ6B

714-261-1717; aj6b.ham@gmail.com

VEC: ARRL/VEC

Norman P. Murray Community & Senior Center, 24932 Veterans Way, Mission Viejo

April 18, 2019; 5:30 PM (walk-ins allowed)

Sponsor: West Coast ARC Contact: Ken Simpson, W6KOS 714-651-6535; w6kos@arrl.net

VEC: ARRL/VEC

Coastal Community Fellowship Church, 10460 Slater Ave., Fountain Valley

April 18, 2019; 6:00 PM (walk-ins allowed,

pre-registration preferred) Sponsor: Western ARA

Contact: George Jacob, N6VNI 562-544-7373; jac2247@gmail.com

VEC: ARRL/VEC

La Habra Community Center, 101 W. La Habra Blvd., La Habra

April 27, 2019; 9:30 AM (no walk-ins, call

ahead)

Sponsor: PAPA System Repeater Group

Contact: Jack Suchocki, W6VFR 954-816-8721; jack@w6vfr.com

VEC: Greater LA VEC

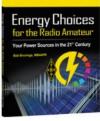
Marie Callender's Restaurant & Bakery, 540

N. Euclid St., Anaheim

## Energy Choices for the Radio Amateur

Revolutionary changes are taking place in the way we produce and consume power for our homes, transportation, and the technology that we use every day. This book explores the ongoing changes in the world of power and energy, and takes a careful look at the choices we can make. Home solar or utility power? Oil/gas heat or electric heat pump? Gas car or hybrid/EV?

Energy Choices for the Radio Amateur (ARRL, 320 pages, \$29.95) by Bob Bruninga, WB4APR, details the author's experiences with new sources of energy. It is intended to help other radio amateurs and DIY hobbyists prepare for the inevitable major energy decisions they will face—choices that can contribute to a reduction in fossil fuel use and save money in the long run. The concepts presented in this book not only



satisfy everyday power requirements, but also can help prepare for emergency and backup power at home and in the field.

Chapters include: The New World of Everyday Power (DC); The Solar Power Revolution; Choosing Your Home Solar System; Solar DIY at Home and in the Field; New Energy Sources of Radio Frequency Interference (RFI); Electrification of Transportation; Electric Vehicle DIY Projects; Conventional Backup and Emergency Power; High Voltage DC Emergency and Backup Power; The Powerwall and Grid Battery Storage for Home; Life's Major Energy Milestones; Making the Switch to Clean Renewable Energy; Amateur Satellites and Thermal Energy Balance; How Our Energy Use Shapes Our World Today.

# **April 2019**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1 Weekly 2 m ACS Net & OCRACES Meeting	2	3	4	5	6 Weekly 60 m ACS Net
7	8 Weekly 2 m ACS Net	9	10	11	12	13 SW ACS Meeting, OA Officers Only, Riverside
14	15 Weekly 2 m ACS Net & Cooperative T-Hunt	16	17	18	19 Good Friday	20 Weekly 60 m ACS Net
Happy Easter	22 ACS Nets on Five Bands & Cal OES Nets	23	24	25	26 Orange County Ama- teur Radio Club Meeting	27 Weekly 60 m ACS Net
28	29 Weekly 2 m ACS Net	30				

#### **Upcoming Events:**

- April 1: OCRACES Meeting, 1930-2130 hours, OCSD Communications & Technology Division, 840 N. Eckhoff Street, Suite 104, Or-
- April 13: Southwest ACS Meeting, State and County RACES Radio Officers Only, Riverside (no 60meter net)
- April 15: Cooperative T-Hunt, 1920 hours
- April 19: Good Friday
- April 21: Easter
- April 26: Orange County Amateur Radio Club Meeting, 1900 hours, American Red Cross (George M. Chitty Building), 600 Parkcenter Drive. Santa Ana
- May 4: ACS Radio Rodeo, 0900-1100 hours
- June 10: City/County RACES & MOU Meeting, 1930-2130 hours, 840 N. Eckhoff Street, Suite 104, Orange



## **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**

60 m: 5346.5 kHz USB (dial) (Channel 2) (OC ACS Net-Saturdays, 1000 hours)

40 m: 7250 kHz LSB

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: 448.320 MHz output, 443.320 MHz input, 141.3 Hz PL (private)

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) 70 cm: 449.680 MHz output, 444.680 MHz input, 131.8 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

Radio Officer (Lieutenant) Scott Byington, KC6MMF Chief Radio Officer (Captain) Ken Bourne, W6HK 714-997-0073

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

Questions or Comments?
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"W6ACS ... Serving Orange County"

## Meet Your County of Orange RACES Members!





Ken Bourne W6HK



Scott Byington KC6MMF



Jack Barth AB6VC



Ernest Fierheller KG6LXT



Bob McFadden KK6CUS



Tom Tracey KC6FIC



Randy Benicky



Roger Berchtold WB6HMW



David Corsiglia WA6TWF



Ray Grimes N8RG



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