

November 2021



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Newsletter of the County of Orange Radio Amateur Civil Emergency Service

CRO's Nest

by Ken Bourne, W6HK, OCRACES Chief Radio Officer

Divulging Radio Transmissions

October 2021 was "Exercise Month," as seen in this issue of *NetControl*, with reports on the October 2nd City/County RACES & EmComm ACS Exercise and on the October 21st Earthquake Exercise. During the exercises, we were careful to say, "This is a drill," with each message, to avoid alarming listeners, such as scanner buffs, with reports of disaster scenarios that they might hear and repeat to their friends. Amateur radio transmissions are not private, and may be divulged to anyone. But what about non-amateur transmissions?

The FCC says that federal and state laws make intercepting and divulging radio communications illegal and punishable by severe criminal penalties, with certain exceptions.

It might be surprising that the FCC and the Communications Act do not forbid overhearing your neighbor's conversation over a cordless telephone. But don't divulge to others what you have heard! You may also listen to non-amateur emergency service reports on a radio scanner, but don't divulge what you have heard. So what transmissions can you disclose? You can divulge certain radio communications that were transmitted for use by the public (such as over-the-air radio and television broadcasts). You can divulge broadcasts related to ships, aircraft, vehicles, or persons in distress. (In my non-lawyer opinion, "distress" would not include what you would overhear on marine channels related to the recent oil spill.) And, as I said before, you can divulge transmissions of am-

ateur radio operators (and also CB operators).

The Communications Act prohibits you from using an intercepted radio communication for your own benefit. For example, a taxicab company cannot intercept radio communications between dispatchers and drivers of a rival company to gain competitive advantages. You are not authorized to intercept signals from pay television services, such as cable or satellite. (Using a hacked modem to de-encrypt a cable TV signal is illegal, for example.) It's also illegal to sell or publish a recording or contents of someone else's wireless phone conversation.

The Communications Act prohibits the FCC from authorizing radio scanning equipment that can receive transmissions in the frequencies allocated to the domestic cellular services or that can readily be altered by the user to intercept cellular communications. An error appears on an [FCC website](#) that says the Communications Act prohibits the FCC from authorizing scanners that "may be modified to convert digital transmissions to analog voice audio." That is incorrect, and there are plenty of scanners that are capable of receiving digital transmissions. Rather, 47 U.S. Code § 302a(d)(1)(C) of the Communications Act prohibits the FCC from authorizing "any scanning receiver that is capable of being equipped with decoders that convert digital **cellular** transmissions to analog voice audio." It is illegal to manufacture, import, sell, or lease such unauthorized equipment in the United States.

**OCRACES
Online Meeting
on Microsoft
Teams:**

**Monday,
November 1,
2021
at 7:30 PM**

City/County/EmComm Drill

On Saturday, October 2, 2021, from 0900 to 1200 hours, OCRACES conducted its biannual City/County RACES & EmComm ACS Exercise. Net control operators at the Orange County EOC RACES Room at Loma Ridge included Eric Bowen, W6RTR, on 2 meters simplex and observing AREDN mesh, Scott MacGillivray, KM6RTE, on Winlink, and Ken Bourne, W6HK, on 60 meters. Summation reports from each of these operators are below:

2 Meters Simplex and AREDN/Mesh, by Eric Bowen, W6RTR

For the October 2, 2021, Countywide ACS Exercise, City and County RACES and MOU members set up portable stations throughout their city, while most remained at home. This drill simulated repeater failures throughout the county and each RACES/ACS unit conducted this drill on their simplex frequencies. From 0900 to 0930 hours, city RACES units and MOUs called a roll of their members on their primary simplex frequencies, while OCRACES net control (Eric Bowen, W6RTR) called the roll of its members on the OCRACES primary simplex frequency of 146.595 MHz. From 0930 to 1000 hours, net control called the roll of the city RACES and MOU units on 146.595 simplex frequency. Each unit responded with the total number of participants from their members, as well as any visitors checking in to their net.

On the 2-meter OCRACES roll call from 0900-0930 hours, OCRACES members checking in included KD6DAQ, WF6F, KK6HFS, N6NTH, N6PRL, and NJ6R. W6HK (60-m net control), W6RTR (2-m net control), and KM6RTE (Winlink) were operating in the RACES Radio Room at Loma Ridge. From 0930 to 1000 hours, City RACES and MOU units checking in on the OCRACES primary simplex frequency with their results included: Anaheim - 5, Brea - 8, Costa Mesa - 5 (relay from MV RACES), Cypress - 5 (and 2 visitors), Fountain Valley - 6, Fullerton - 7, Huntington Beach - K6HMS checked in early from net control duties at the Pacific Air Show but did not give any numbers, Irvine - 20, Laguna Niguel - 5, Laguna Woods - 5 (and 1 visitor), Los Alamitos - 11, Mission Viejo - 11, Orange - 11, San Clemente - 5, San Juan Capistrano - 1, Seal Beach (combined with Los Alamitos), Westminster - 4, American Red Cross - 5, and OCHEART - 7.

We added a new phase to our exercise this year and that was the AREDN mesh. We asked that each unit log in to a node and take a screenshot from the attached camera, as well as make phone calls to other AREDN mesh users. Due to the Orange County Sheriff's Department strict guidelines on Internet access and using the OCSD secure network and wireless networks, we were unable to connect any AREDN mesh node to the Internet from the RACES Radio Room at Loma Ridge. And due to the OCSD strict guidelines for adding antennas at Loma Ridge and not causing any interference to the county radio system, we were unable to set up any AREDN mesh node using antennas at Loma Ridge. Our only option for setting up an AREDN mesh node was to use a wireless hotspot via a cell phone. Several hours were spent days before the drill setting up a MikroTik HAP router through a hotspot and establishing the required VPN tunnels, only to have this fail on the morning of the drill. Although we were unable to connect through the hotspot, this did not effect the overall drill or prevent any of the city units from participating or completing their part of the drill. It only prevented us from making or receiving phone calls from Loma Ridge. There were a number of users that completed the exercise as described and sent their results to W6RTR via Winlink for review after the drill. The following operators sent their results: American Red Cross (KM6ZPO) sent a photo, Irvine (N6AWQ, KN6BMO, K6BAT) all sent a photo (KN6BMO sent two different photos), Mission Viejo (WA6RUZ) sent a photo, and Tri-City RACES (KM6SLF) sent a photo, as well as making two outbound phone calls and receiving one call.

Winlink, by Scott MacGillivray, KM6RTE

The goals for the Winlink Exercise portion of the Fall 2021 Countywide ACS Exercise were:

- a) To provide Winlink operators the opportunity to gain experience and demonstrate operation of their Winlink stations by transmitting a message with an attached Check-In form.
- b) To assess the level of Winlink usage across the county and identify current Winlink operators.



Eric Bowen, W6RTR, at 2-meter simplex station.

City/County/EmComm ACS Drill *Continued from page 2*

As described in the Winlink exercise portion of the countywide ACS exercise instructions, operators were to prepare a message with an attached Express Check-In form and send it to OCRACES tactical and member addresses. The Winlink exercise was open to all licensed amateur radio operators that have Winlink stations in Orange County, California, and not exclusive to just the city agencies.

In order to maximize the delivery options, with the OCRACES Winlink RMS Gateways currently offline and very limited alternative gateways available in Orange County, the Winlink message could be sent using any of the communications modes available to the operator, which included Telnet (i.e., direct connection to internet).

A detailed compilation of the information included in the messages received by operator KM6RTE were recorded in a spreadsheet as they were being received during the event, as well as documented in the IC-309 Communications Log generated by Winlink Express. A summary of key information is provided in the Table 1.

In summary, a total of 82 messages were sent and received, with messages sent from 31 unique Winlink operators. The largest number of operators (41.9%) used telnet communications mode. The next most used communications mode was packet on VHF band (38.7%, 12 operators), of which 75% (9 of the 12 operators) used the RMS (Radio Message Server) Gateway KM6RTE-10. With the largest number of operators using telnet, it is apparent that Orange County needs more operational Winlink RMS Gateways.

Included in the attached check-in forms was information about the Winlink operator's role in their city or MOU organization that they were participating on behalf of. In total, 17 organizations were represented and the operators identified a total 34 instances of membership with these organizations. Refer to Table 1 for details on the organizations identified.

In support of the first objective, the exercise demonstrated that the Winlink operators in Orange County can proficiently support ACS EmComm needs with the majority of messages (93.6%) providing a generally fully compliant



Scott MacGillivray, KM6RTE, at Winlink station.

check-in form. Overall, this is very encouraging with the general quality of the responses and the effort operators spent following the instructions provided.

In support of the second objective, and based on ongoing correspondence with many Winlink operators in Orange County, it is suspected that the 31 operators participating represent only about 1/2 to 1/3 of the total current Winlink operators in Orange County. Future exercises should focus on how best to ensure that all of the Winlink operators in OC are made aware of the exercise and are encouraged to participate.

Some other minor observations:

a) Several messages showed timestamp much later or earlier than when they were received (e.g., one hour off, suggesting the wrong time zone was selected or not adjusting for daylight savings time). Since Winlink uses the time information

Parameter	Value	Details / Comments
Total number of messages sent and received during 24-hour exercise	82	Includes several messages in support of AREDN exercise
Messages received from unique Winlink accounts	31	Some operators sent multiple messages from same Winlink account
Types and number of communication modes used - Some operators sent multiple messages using different comm modes - Based on self-reported information	- Telnet - Telnet/Mesh - Packet/VHF - Packet/UHF - VARA FM/VHF - Unknown	- 13 (41.9%) - 2 (6.5%) - 12 (38.7%); 9 (29%) used RMS KM6RTE-10 - 2 (6.5%) - 1 (3.2%) - 1 (3.2%)
Incomplete messages	- No attachment (1) - No GPS info (5)	- No message contents at all - Though, GPS info identified as optional
Unclear role in their organization	5	Unclear if representative or just member
City / MOU Organizations represented - Some reported membership in multiple organizations	- 34 instances of membership identified - 17 different organizations	- Seal Beach/Los Alamitos RACES (6) - OCHEART (5) - MV RACES (4) - Tri-Cities RACES (3) - IDEC (3) - LNACS (1) - Laguna Woods (1) - Fullerton RACES (1) - Fountain Valley RACES (1) - American Red Cross (1) - Rio Hondo Amateur Radio Club (1) - OCRACES (1) - Whittier ARES (1) - COAR (1) - Cypress RACES (1) - San Diego ARC DST (1) - OC Fire Watch (1) - Not specified (1)
Total data transferred during 24-hour exercise by Gateway KM6RTE-10	38,417 Bytes	Vast majority of traffic was directly in support of Winlink exercise

City/County/EmComm ACS Drill *Continued from page 3*

from the operator's computer as a timestamp for the message, it is important for operators to ensure that the time is accurate on their computer.

b) The majority of operators (83.9%) included GPS coordinates (which was optional). This demonstrated their ability to independently determine the GPS information for their current locations. Though, a couple of operators incorrectly formatted the longitude info by a missing decimal point. This resulted in Winlink not being able to correctly calculate their Maidenhead Grid location.

60 Meters, by Ken Bourne, W6HK

The 60-meter portion of the October 2, 2021, ACS Exercise began at 1000 hours, on 5371.5 kHz (dial frequency) upper sideband. This frequency is known as "channel 4" on 60 meters (the only channelized HF band), and is the frequency that is used by OCRACES during our Saturday morning nets at 1000 hours. Propagation typically varies on this band from hour-to-hour and day-to-day, depending on ionospheric conditions. For coverage throughout Orange County, we depend on Near Vertical Incidence Skywave (NVIS) propagation, requiring a horizontal antenna. A simple half-wave dipole (almost 88 feet long) about 30 feet above ground is an effective antenna. Unfortunately, the antenna at the EOC is a vertical multiband antenna that is not resonant on 60 meters and that is not good for NVIS, plus it has about a 20-dB cross-polarization loss to horizontal antennas used by the majority of 60-meter stations. The Loma Ridge altitude helped, but a horizontal antenna at the EOC would have been much more effective.



Ken Bourne, W6HK, at 60-meter station.

Operations during the first half hour (1000 to 1030 hours, concurrent with the last half hour of the 2-meter simplex net) began with the same roll call used on the weekly Saturday OCRACES nets of Orange County City and County RACES and EmComm stations. Net control then called each City alphabetically, followed by the MOUs and other EmComm stations. Participating OCRACES stations included N6PRL and NJ6R. Anaheim RACES included KW6ACK and W6APD. Brea RACES included K6UDW. Costa Mesa RACES (MESAC) included WB6NOA. Cypress RACES included K6GV, K6KTS, and W6ONT. Laguna Woods RACES included K6EEE, K6IAA, KN6OYS, KA6VPG, and NH7WG. Mission Viejo RACES included W6EDT. Newport Beach Repeater Club included KB6FW and K6GSX. City of Orange RACES (COAR) included KG6MIG and K0VNI. Cal OES CRU included W6GMU. Checking in from Whittier ARES in Los Angeles County were AA6CD and KK6CKK. WA6DNT checked in from San Diego County Red Cross. N6WIX with Ventura County ACS checked in and acted as a relay station for Orange County stations that were not able to communicate directly with Loma Ridge. (NVIS propagation conditions vary on 60 meters, sometimes being poor within Orange County but good a couple of hundred miles away, and just the opposite at other times.) Non-EmComm stations also participated in the drill, and are also active on our weekly Saturday morning 60-meter nets. They included WD6AJR in Orange, K6KWI in Anaheim Hills, K6ORJ mobile in the Sierra National Forest northeast of Fresno, N2VAJ in Orange, and W6YLD in Santa Maria.

Next OCRACES Meeting: Nov. 1st on Teams

Our next OCRACES meeting will be on Monday, November 1, 2021, at 7:30 PM. Joe Selikov, KB6EID, will host this online meeting on Microsoft Teams. You can download Teams here for your [desktop](#) and for your [mobile](#). A meeting link will be emailed to the ocsd-races Groups.io list and to OCRACES applicants. Members of city, county, and state RACES and EmComm units are invited to attend this meeting.

At this meeting, we will review the October 21st ShakeOut Earthquake ACS Exercise, during which we had 38 participants. We will discuss how to make next year's earthquake exercise even more effective.

The OCS Mutual Aid / Reserve Bureau is encouraging us to promote our RACES Unit to other Reserve Units and PSRs in the Department. They would like us to hold an OCRACES "Open House." At the November 1st meeting, we will discuss various ideas for promoting our activities and capabilities.

700 MHz Channels in Orange County

by Robert Stoffel, KD6DAQ

As RACES members, we are sometimes called upon to operate on public-safety radio channels, either from the Orange County Emergency Operations Center (EOC) on Loma Ridge, or in the field with the Control 7 communications response vehicle. In this continuing series, I am sharing information about these radio systems and channels, providing our members with a better understanding on what they are and how they are used here in Orange County.

This month, we take a look at the 700 MHz Band, and the channels that RACES members may be asked to monitor or transmit on. Of all the Radio Bands, this is the newest one, and Orange County operates a number of 700 MHz channels for interoperable communications with agencies in Southern California that use 700 or 800 MHz as their primary radio system. In this band we have two types of channels, simplex and repeated. First, let's take a look at the repeated channels.



RACES Program Coordinator Lee Kaser, KK6VIV, at the Control 7 radio operator position.



Screen shot of the Loma Ridge EOC public-safety radio console, inside the RACES radio room, showing one of the 700 MHz interoperable radio channels, 7LAW81, selected to the Signal Peak radio site.

Orange County operates three repeated 700 MHz channels for interoperable communications, known as 7OC1 (pronounced "Seven-O-C-One"), 7OC2, and 7OC3, available to any discipline. They operate from one of three remote radio sites, selected from the radio console at Loma Ridge. Only one site may be selected for each channel at a time.

When the 700 MHz Band was first established, the FCC created a large number of nationwide interoperable channels. In order to reduce interference between neighboring Counties, the Southern California region established a plan to reduce interference. The four repeated channels assigned to Orange County are 7TAC75 (pronounced "Seven-Tac-Seventy-Five"), available for use by any discipline, 7LAW81 (pronounced "Seven-Law-Eighty-One"), available for use by any Law agency, 7FIRE83 (pronounced "Seven-Fire-Eighty-Three"), available for use by any Fire agency, and 7MED86 (pronounced "Seven-Med-Eighty-Six"), available for use by any EMS agency. Each channel operates from one of three remote radio sites, selected from the radio console at Loma Ridge. Only one site may be selected for each channel at a time.

7CALL50 (pronounced "Seven-Call-Fifty") is a "Calling" channel monitored 24/7 by Control One, used by any outside agency needing to contact Orange County.

Each of the 700 MHz channels listed above may also be used in simplex mode (also known as direct or talkaround). The channel names when in simplex mode are the same as shown above, except the letter D is added to the end of the channel name (the letter D indicates Direct). So, 7OC1D (pronounced "Seven-O-C-One-Direct") is the 7OC1 channel in Direct mode, 7TAC75D (pronounced "Seven-Tac-Seventy-Five-Direct") is the 7TAC75 channel in Direct mode, and so forth.

Control One is able to electronically connect the 700 MHz repeated channels to any conventional radio channel or 800 MHz Countywide Coordinated Communications System (CCCS) talkgroup, allowing for communications between users of these channels and the 800 MHz CCCS. The electronic connecting of channels is referred to as "a patch." While RACES personnel would not be tasked with implementing the patch, we may be asked to monitor these radio channels for a specific situation or incident being supported by the EOC or in the field with Control 7.

Orange County does not operate any additional repeaters for the 700 MHz national interoperability channels; however, all of these channels, repeated and direct, are programmed into Control 7 should their use be needed. The complete list of these 700 MHz channels may be found in the California Interoperability Field Operations Guide (Cal-IFOG).

All Orange County mobile and portable radios have 12 simplex 700 MHz channels for itinerant use. They may be used in or outside of our County. Channels available for all disciplines are called "General" channels, and use the "GEN" designator as a part of the channel name. 7GEN1US-ALG is an analog channel available for use anywhere in the United States. 7GEN1CA-ALG is an analog channel available for use anywhere in the State of California. 7GEN2US-DIG is a digital channel available for use anywhere in the United States. 7GEN2CA-DIG is a digital channel available for use anywhere in the State of California. 7GEN3US-ENC is a digital and encrypted channel available for use anywhere in the United States. 7GEN3CA-ENC is a digital and encrypted channel available for use anywhere in the State of California. Channels for use by Law Enforcement use the "LAW" designator as a part of the channel name. 7LAW1CA-ALG is an analog channel available for use anywhere in the State of California. 7LAW2CA-DIG is a digital channel available for use anywhere in the State of California. 7LAW3CA-ENC is a digital and encrypted channel available for use anywhere in the State of California. Channels for use by the Fire Service use the "FIRE" designator as a part of the channel name. 7FIRE1CA-ALG is an analog channel available for use anywhere in the State of California. 7FIRE2CA-DIG is a digital channel available for use anywhere in the State of California. 7FIRE3CA-ENC is a digital and encrypted channel available for use anywhere in the State of California. Any of the Direct channels mentioned in this article may be used at an incident, and RACES personnel would access them from Control 7.

This completes our review of the 700 MHz Band. Next month we will continue our journey by taking a look at the 800 MHz Band.

38 Participate in October 21st Earthquake Drill

OCRACES conducted a countywide Great ShakeOut earthquake emergency communications exercise on Thursday, October 21, 2021. The exercise provided City and County RACES and EmComm units an opportunity to practice giving observational reports following a major earthquake in Orange County. Under actual earthquake conditions, the reports would provide data to local and county agencies for creating an initial picture of the situation at various locations across the county. RACES members would provide “eyes and ears” for an early and wide assessment.

All communications were on the OCRACES 2-meter repeater on 146.895 MHz. Net control was at the Loma Ridge EOC and reports were received from throughout Orange County. As would be typical during a strong earthquake, net control (which included Ken Bourne, W6HK, and Eric Bowen, W6RTR, taking turns as radio operator and scribe) received multiple reports every minute and did not have time to fill out individual ICS-213 message forms. Messages were quickly jotted down and those requiring immediate agency response would have been rushed into the EOC Command Center by a runner under actual conditions. Scott MacGillivray, KM6RTE, experimented with Winlink and AREDN/mesh at Loma Ridge during the exercise, although messages were not received via those modes.

Earthquake intensity reports were given as “Mike-Mike,” based on the Modified Mercalli Earthquake Intensity Scale, using expanded USGS standards. “Observational” reports included “Mike-Mike” ranges of 1 through 4 or 5 and the general location (such as the city name) and typically would not be needed by the Command Center, but would be



Eric Bowen, W6RTR, receives earthquake reports during October 23rd exercise.

Modified Mercalli Earthquake Intensity Scale			
Intensity	Shaking	Description/Damage	Equivalent Richter Magnitude
I	Not felt	Not felt except by a very few under especially favorable conditions.	1.0 to 2.0
II	Weak	Felt only by a few persons at rest, especially on upper floors of buildings.	2.0 to 3.0
III	Weak	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.	3.0 to 4.0
IV	Light	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.	4.0
V	Moderate	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.	4.0 to 5.0
VI	Strong	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.	5.0 to 6.0
VII	Very Strong	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.	6.0
VIII	Severe	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.	6.0 to 7.0
IX	Violent	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations. Liquefaction.	7.0
X	Extreme	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.	7.0 to 8.0
XI	Extremely Dangerous	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.	8.0
XII	Catastrophic	Damage total. Waves seen on ground surfaces. Lines of sight and level distorted. Objects thrown upward into the air.	8.0 or greater

useful in determining which areas of the county were not severely affected. “Critical” reports included “Mike-Mike ranges above 5 or 6 plus the exact locations and conditions requiring agency response, including fires, downed utility lines, power outage, traffic-signal outage, bridge collapse, tsunami warning, broken windows, and gas leak.

Participating OCRACES stations in the field included KD6DAQ, WF6F, KK6HFS, KC6MMF, N6PRL, NJ6R, and K3TOG.

Many members from city RACES/ACS units participated, including Anaheim (KW6ACK), Costa Mesa (MESAC) (KJ6PFW, WB6NOA, and KM6UJD), Fountain Valley (KK6OEX), Fullerton (K6FUL, KB4GOD, and K6OGD), Huntington Beach (KE6BNS, K6HMS, WB6OZD, and W6SNX), Mission Viejo (KF6BRC and W6EDT), Laguna Niguel (WB6CKG, KK6CUR, K0PGE, and KK6URR), Laguna Woods (NH7WG), Los Alamitos/Seal Beach (KM6RSY), Orange (COAR) (KK6YUP), and Westminster (KJ6EBA and N6HVC). From Orange County Red Cross were K6HMS, KG6WTQ, and KM6ZPO, and San Diego County Red Cross was WA6DNT. From OCHEART were KE6MVS, K0PGE, and KM6RSY.

November 2021

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1 Weekly 2 m ACS Net & OCRACES Teams Mtg	2	3	4	5	6 Weekly 60 m ACS Net
7	8 Weekly 2 m ACS Net	9	10	11	12	13 Weekly 60 m ACS Net
14	15 Weekly 2 m ACS Net	16	17	18	19 Orange County Amateur Radio Club Meeting	20 Weekly 60 m ACS Net
21	22 ACS Net on 4 Bands	23	24	25 Happy Thanksgiving	26	27 Weekly 60 m ACS Net
28	29 Weekly 2 m ACS Net	30				

Upcoming Events:

- **November 1:** OCRACES Meeting on Microsoft Teams, 1930 hours
- **November 19:** Orange County Amateur Radio Club Meeting on Zoom, 1900 hours
- **November 25:** Thanksgiving Day



<https://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

- 60 m: 5371.5 kHz USB (dial) (Channel 4) (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 (down for repair)
- 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)
- *Primary Net—Mondays, 1900 hours

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It's Where It's @!

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Meet Your County of Orange RACES Members!

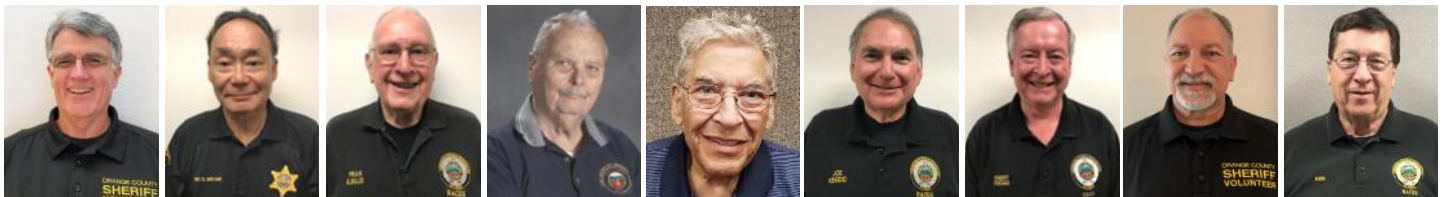
Officers →



Ken Bourne W6HK **Scott Byington** KC6MMF **Jack Barth** AB6VC **Ernest Fierheller** KG6LXT



Heide Aguire K3TOG **Randy Benicky** N6PRL **Eric Bowen** W6RTR **Ray Grimes** N8RG **Peter Jimenez** K16UTE **Walter Kroy** KC6HAM **Martin La Rocque** N6NTH **Steve Livingston** NJ6R



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