July 2021

Newsletter of the County of Orange Radio Amateur Civil Emergency Service

Inside this issue:

City/County RACES & EmComm Online Meeting on Microsoft Teams:

Monday, July 7, 2021, at 7:30 PM

Orange County Sheriff's Department
Emergency Management Division

CRO's Nest

by Ken Bourne, W6HK, OCRACES Chief Radio Officer

Malware

We are responsible for protecting the computers we use for RACES activities from infestation by malware, especially ransomware. Malware has a sneaky way to get into our computers. Should we be careful about the firmware in amateur radio products and instrumentation that we purchase and installation and programming software for those products, especially if those products are made in countries known to harbor cybersecurity criminals?

One of the most popular antenna analyzers is made in Ukraine. Inexpensive vector network analyzers are made in China. So are amateur DMR transceivers. Even some well-known Japanese ham transceivers are now made in China, and could they be susceptible to malware infestation? How about Chinese-made webcams that we install on our desktop computers for attending online virtual meetings?

Some free and open-source software can be dangerous. Executable (".exe") software that you download from forum links, pdf files, JPEGs, Word and Excel files, MP4 video files sent to you by fellow hams (especially those that are forwarded from wide distribution), political dissertations with attachments, etc., can be dangerous. I receive several forwarded emails every day from fellow hams who should know better (but don't!) with large attachments. I simply don't open them and I delete the email.

Free and open-source software is needed for amateur radio operation. However, some of it is risky and should not be installed on a computer that has financial and sensitive personal data such as business or OCSD/OCRACES email. Consider investing in a second laptop or desktop computer for running your ham software as well as drivers for your Chinese-made accessories, including transceivers, VNAs, webcams, home security cameras, etc. When you download software, check that you're downloading from the author's official website. Don't click on a random link on a discussion board.

Internet of Things (IoT) devices open your network to outside connections. Be careful! IoT devices include Alexa, Roku, web-enabled refrigerator, smart thermostat, security camera, and even some ham transceivers. IoT devices are vulnerable if left unpatched. Some have been hacked. If an unpatched device on your home network is hacked, the bad guy can pivot and invade your PC. Consider establishing a "Y" router configuration., which uses three routers to create two isolated networks, with your sensitive computers on one router, your IoT devices and ham computer on another router, and the two routers connected through a third router to the internet.

Hams traditionally use old radio equipment, which is fine (and nostalgic). But it's not a good idea to use old computer equipment that is connected to the internet, if the old computers, routers, and phones no longer receive security updates. Use modern equipment on the internet and turn on automatic updates or always download and install the most recent updates as soon as they are released. Use a browser that automatically updates.

OCRACES Participates in Alternate EOC Drill

OCRACES played a role in the 2021 Alternate EOC Exercise on Wednesday, June 30, 2021. For realism, this exercise was kept confidential from much of OCSD Emergency Management Division (EMD) personnel until it was activated Wednesday morning. OCRACES, which is an EMD AuxComm unit, was made a component of the exercise, and the exercise was also kept confidential to its members until the OCRACES 2-meter repeater was activated for the event. Key OCRACES players were pre-informed of the exercise so that they could prepare to handle four major items of traffic to test overall auxiliary communications capabilities.

Radio Officer Scott Byington, KC6MMF, Assistant Emergency Manager Lee Kaser, KK6VIV, and Chief Radio Officer Ken Bourne, W6HK (left to right), at OCFA during the Alternate EOC Exercise.

The exercise scenario was a fail-soft of the 800-MHz radio system, coupled with immediate and severe network connectivity issues at 0600 hours. OCSD Dispatch and Control One experience identical failures, rendering them unable to communicate. OCSD Systems confirmed that both the 800-MHz system and the OCSD network connections to Loma Ridge had experienced a very complex cyberattack and they were unable to estimate when the services to the facility would be restored. OCIAC determined that multiple response agencies, transportation, and large corporations across the county were having similar issues and that a foreign government may be at the root of the problem.

The next step in the scenario was for OCSD Executive Command to place all sworn and essential professional staff on Tactical Alert. The OCSD Department Operations Center (DOC) activated to Level 2 at the Southwest Operations Division, Saddleback Station. EMD activated OCRACES on the 2-meter repeater for deployment to predetermined areas to assist with communications. A decision was then made to relocate the EOC to an alternate location. EMD staff rallied at Orange County Fire Authority (OCFA) Headquarters in Irvine, recovered the Alternate EOC equipment, and began setup. OCRACES Chief Radio Officer Ken Bourne, W6HK, and Radio Officer Scott Byington, KC6MMF, were assigned as AUXC to Control 7 at OCFA, to operate net control, beginning at 0930 hours. Joe Selikov, KB6EID, was ready to activate OCRACES members via AlertOC. He and Steve Livingston, NJ6R, and Fran Needham, KJ6UJS, sent and received exercise traffic in the field.

FEMA ICS and NIMS procedures were followed during the exercise. An ICS-211A form was used at Control 7 for checking in Ken and Scott. Messages were sent and received with the ICS-213 form. All activities were logged on an ICS-214 form.

At the conclusion of the exercise, Ken and Scott participated in a hot wash conducted by Senior Emergency Management Program Coordinator Charlie Volkel, in which players discussed strengths and areas for improvement. Overall, the design of the exercise was excellent and prepared us for situations that might require relocating the EOC.

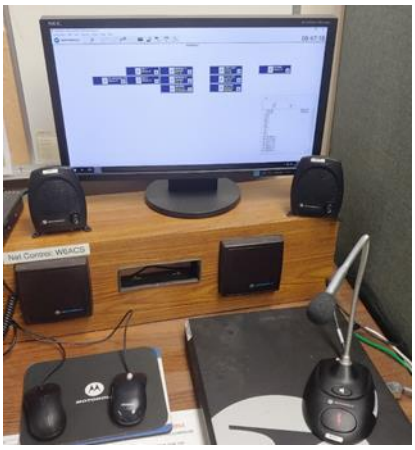
Farewell to Tom Tracey, KC6FIC

Thanks to Tom Tracey for his 23 years of service in County of Orange RACES. For the past several years he has been an Assistant Radio Officer and our Training Officer. With professional experience as an emergency dispatcher, he set a prime example for all members to follow, and impressed everyone who observed his operating techniques, such as during intensive events such as wildfires involving EOC activations, field training with the Sheriff's Search & Rescue Reserve Unit, and net control at the Vote Tally Center during elections. He oversaw drill operations at the EOC RACES Room, and coached members into being excellent radio operators. Tom devised or revised forms to be used during activations, for us to be in compliance with FEMA ICS and NIMS standards and for us to give precise and clear information to Emergency Management personnel during emergencies. He provided excellent training to our members with his PowerPoint presentations and eagerly participated in our drills and activations. Most of all, he has been a great friend to all of us. We wish Tom the very best as he proceeds with his new pursuits.

Tom Tracey, KC6FIC, teaching a class.

Public-Safety Radio Channels in Orange County

by Robert Stoffel, KD6DAQ



As RACES members, we are sometimes called upon to staff the RACES radio room at Loma Ridge during an Emergency Operations Center (EOC) activation. We are familiar with the amateur radio systems and frequencies used by RACES and other amateur radio operators, but when sitting at the public-safety radio console shown to the right, we may be asked to monitor and transmit over channels we are less familiar with. Over the next six months I will share 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.

When it comes to public-safety communications, our County has been a true leader since the beginning. Orange County has operated its Public Safety Coordinated Communications Systems for the County and its incorporated cities since 1934, when radio station KGHX was placed on-the-air with one microphone and one voice in a one-way broadcast configuration. The 1934 KGHX Christmas card, shown to the lower left, included photos of the original radio operators—Wendell Jones, Ed Hefner, Myron Gemmill, and Walter "Bud" Whiteman—along with an image of Orange County's first radio dispatch room. Two-way radios were introduced two years later, and, from the beginning, any law agency could communicate with any other law agency, and later the same was true for fire, lifeguards, and emergency medical services.

Today, the buzz-word is interoperability, defined as "the ability of public-safety emergency responders to communicate with whom they need to, when they need to, as authorized." This became a significant topic after the 9/11 attacks and, since that time, much progress has been made with improving interoperability around the United States. I suppose it was easy in the 1930s and 1940s, since VHF Low Band was the only radio band, and in the very early days law and fire actually shared the same channel. Now that's what I call interoperability! But as the years passed and technology improved, new frequency bands became available, first in VHF High Band, later UHF, and eventually 800 MHz. This was a good thing since radio traffic was also growing, and having different disciplines share the same channel was no longer a workable option. As radio systems expanded, Orange County made sure that each discipline remained on the same band, allowing for discipline-specific interoperability decades before it became "popular." Since 2001, Orange County has had the highest level of interoperability possible with all City and County agencies operating on the 800 MHz Countywide Coordinated Communications System, making it easy for radio-to-radio communications between any of the law enforcement, fire service, emergency medical service, lifeguard, public works, and local government agencies.

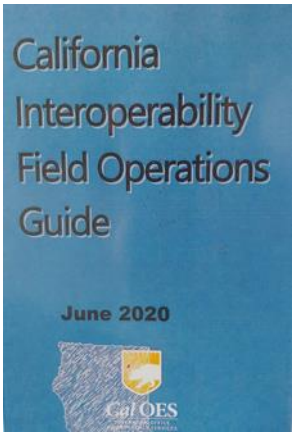
Orange County is also one of the few counties anywhere in the nation to operate conventional interoperable radio channels in all of the public-safety radio bands (VHF Low Band, VHF High Band, UHF, 700 MHz, and 800 MHz). This allows any out-of-the-area agency to enter our County and have the ability to communicate with Orange County first responders, regardless of what band their primary radio system operates on.

Over the next five months, I will discuss specific public-safety radio channels utilized in Orange County, especially those that you as a RACES member may be called upon to operate, either from the Loma Ridge EOC radio room, or in the field using the Control 7 communications response vehicle. RACES members can become better acquainted with some of these radio systems by reviewing information found in the California Interoperability Field Operations Guide, or Cal-IFOG. The Cal-IFOG provides a wealth of information about how local, state, and national interoperable channels are named and used, along with operational protocols. The latest version is dated June 2020.

The Cal-IFOG is available from the Cal OES website as a pdf document. Download a copy at https://www.caloes.ca.gov/PublicSafetyCommunicationsSite/Documents/Cal-IFOG.PDF

It is also available in electronic form as an "app" available for download in the Google Play Store and the Apple App Store (search for "CA iFOG").

Until next month, the aforementioned document will help by laying a good foundation to better prepare you for this journey!



Los Angeles ARES Northeast District Exercise

As OCRACES plans for future exercises, we observe exercises by other RACES units as well as by ARES and other EmComm organizations, for useful ideas to incorporate into our drills. One such exercise was conducted on May 31, 2021, by the ARES LAX (Los Angeles) Northeast District. It was their fifth Saturday Exercise—dubbed SatEx and themed "Return of the Operators." Assistant District Emergency Coordinator for the Hollywood district, David Ahrendts, KK6DA, was credited with devising a challenging exercise scenario that included deteriorating conditions and focused on building an ad hoc network of stations for the response.

Event and Out-Of-Area Traffic

The exercise began with a simulated earthquake at 0830 hours. Participating stations sent DYFI (Did You Feel It) reports to the US Geological Survey (USGS) and welfare messages to their out-of-state contacts through HF and VHF gateways. Stations were encouraged to use the K6YZF-11 VARA FM digipeater to connect to Winlink hybrid RF/email gateways AJ7C, W6BI, and K6IRF.

Hospital Message Traffic

At 0900 the hospital net commenced operation on the southern California Disaster Amateur Radio Network (DARN) and stations with digital traffic were directed to ARES 501 (local designation for an emergency simplex frequency) to pass hospital traffic to the Medical Alert Center (MAC). No infrastructure digipeaters were to be used, simulating deteriorating conditions post-event. In an ironic twist, life imitated exercise with conditions actually deteriorating on the 2-meter band after 0900! However, without skipping a beat, stations affected asked for relays, and digipeater operators and other stations offered to act as relays and digipeaters. Their training kicked in and stations overcame adverse conditions effectively.

Hospital stations sent a list of check-ins, Hospital Status Assessments, Resource Requests, and check-outs using Winlink. Beaconed Hospital Service Levels using APRS were transmitted to the MAC station during the exercise. The MAC station responded with acknowledgements and replies containing simulated approvals and ETAs for resources requested. In some cases the traffic was sent directly to the MAC; in others, stations coordinated digipeats of messages through other hospital stations.

Challenges

- *Powering stations* is an ongoing challenge. Solar panels and high-capacity batteries paired with low-current-draw devices proved effective remedies for some stations.
- *Location.* While some hospital stations enjoyed rooftop access, others had to operate at street level, often surrounded by buildings. It was impressive how the latter stations overcame their location challenges through creativity and teamwork. Digipeating through other hospital stations, for example, proved an effective remedy.
- *Antenna height and location*. Several stations commented on field antenna height and/or location as challenges at their sites. Mitigation suggestions from those stations included trying different deployment systems, relocating antennas, and trying directionals going forward.

After-Action

Stations provided ICS-214 Activity Reports post-exercise. Some stations provided written after-action reports in addition to the ICS-214. A Zoom hot wash was conducted with participants sharing their experiences.

Thanks to the ARRL's The ARES Letter *for June 16, 2021, and the report by Oliver Dully, K6OLI, ARES LAX Northeast District Emergency Coordinator.*

Click on These Links to Fire-Map Websites

Jim Price, KO6GM, Communications Center Operations, Communications Reserve Unit, Cal OES, advises of a couple of links to fire-map websites. The second one, by NAPSG, is the best. Jim has also found that CAL FIRE and local fire departments and law enforcement often post updates on Twitter. A link to an interactive map of wildfires burning across the Bay Area and California is https://www.sfchronicle.com/projects/california-fire-map/. A link to #FireMappers is https://napsg.maps.arcgis.com/apps/webappviewer/index.html?id=6dc469279760492d802c7ba6db45ff0e&extent=-13383683.5848%2C4096629.4346%2C-13339617.638%2C4125446.1942%2C102100.

City/County RACES Teams Meeting: July 12th

Due to COVID-19, it has been over a year since we held a City/County RACES & MOU meeting. Our next OCRACES meeting on July 12, 2021, will be an online City/County RACES & EmComm meeting. (EmComm includes MOUs such as OCHEART, American Red Cross, and Orange County SKYWARN, plus other emergency communications units such as Newport Beach Repeater Club.) Representatives of each unit will give reports of recent and planned activities. OCRACES is still meeting "virtually" online, but soon we hope to be meeting once again in person. Joe Selikov, KB6EID, will host the 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.

With OCRACES administration transitioning to the Reserve Bureau and coordination to the Emergency Management Division, RACES PSRs and sworn Reserves will eventually meet in person at Sheriff's facilities. Some future meetings with expected large attendance, including non-OCRACES members, might continue to be held on Teams.

WSJT-X v 2.4.0 Available, 2.5.0 beta Released

WSJT-X version 2.4.0 now is available in general release. According to co-developer Joe Taylor, K1JT, WSJT-X version 2.4.0 includes a new digital mode, Q65. This protocol is designed for two-way contacts over especially difficult propagation paths, including ionospheric scatter, troposcatter, rain scatter, TEP, EME, and other types of fast-fading signals.

"On paths with Doppler spread more than a few hertz, the weak-signal performance of Q65 is the best among all WSJT-X modes," the Quick Start Guide asserts.

WSJT-X version 2.5.0-rc1 (beta) version has been released. According to the *Release Notes*, in version 2.5.0 "the Q65 decoder has been enhanced to measure and compensate for linear frequency drift in Q65 signals."

Q65 uses 65-tone frequency-shift keying and builds on the demonstrated weak-signal strengths of QRA64, a mode introduced to WSJT-X in 2016. Q65 offers user message and sequencing identical to that in FST4, FT4, FT8, and MSK144. It includes a unique tone for time and frequency synchronization. As with JT65, this "sync tone" is readily visible on the waterfall spectral display. In addition, Q65 provides a sensitive "sync curve" near the bottom of the waterfall window.

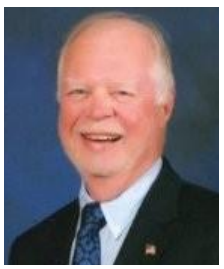
Testing showed that Q65 will enable stations with a modest Yagi and 100 W or more and to work one another on 6 meters at distances up to ~2000 kilometers on most days of the year, in dead band conditions.

"An excellent example of targeted uses of Q65 is ionospheric scatter on the 6-meter band," the documentation states. "Extensive tests on the 1,150-kilometer path between K1JT and K9AN have shown that with 300 W power output, nearly every Q65-30A transmission is copied correctly by the other station." The 30A refers to the transmit-receive period and spacing width.

For the complete announcement and to download the latest version, visit the WSJT-X website.

Passing of PSR Director Charlie Bayhi

We are very sad to announce the passing of OCSD Professional Services Responder (PSR) Executive Director Charlie Bayhi on Tuesday, June 22, 2021, at the age of 81. Charlie bravely fought his battle with cancer and ultimately passed away with his family by his side.



Charlie Bayhi.

Charlie began his law-enforcement volunteer career in 1966 with the Lexington Auxiliary Police in Kentucky. In 1971, he became a volunteer EMT in Dayton, Ohio, and worked his way through the ranks to become the Chief in charge of their Medical Division. He later became a volunteer for the city of Mission Viejo, Orange County, in 2003, and eventually joined the PSR volunteer program with the Orange County Sheriff's Department in 2009. Charlie was selected as the Executive Director of the PSR program in 2019.

Charlie dedicated his service to OCSD, the community, and law enforcement in general by volunteering most of his free time to the cities of Dana Point, Mission Viejo, Lake Forest, and John Wayne Airport. He had recently been attending meetings of the Orange County Sheriff's Museum & Education Center, and of OCRACES, as he encouraged and advised members in transitioning to the RACES/PSR program.

Services for Charlie were held on Friday, July 2nd, at Holy Trinity Catholic Church, in Ladera Ranch.

Countywide RACES/EmComm News

"RACES/ EmComm News" provides an opportunity to share information from all City & County RACES/ACS units and EmComm organizations and supportive amateur radio clubs in Orange County.

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

kbourne.ocsd@earthlink.net

Laguna Woods RACES

RACES and the City

By Bruce Bonbright, NH7WG, Chief Radio Officer

We had a good in-person meeting Friday morning, June 11, 2021, at the Laguna Woods City Hall. We all wore masks and we had our chairs in a semicircle 6 feet apart to comply with the then-current health directives/orders. Yolie Trippy (City Clerk) joined us for the meeting and everyone told me that they really enjoyed getting together. Yolie is our RACES team's primary point-of-contact with the City and is the person who would activate us.

Laguna Woods RACES team members all purchased tri-band radios over the past month that allow them to also use the 220-MHz band. The reason I mention this is because SOARA has given Laguna Woods RACES use of their private 220-MHz repeater, located on Santiago Peak, during a disaster. This would be our secondary repeater—our first being the Laguna Woods 147.120-MHz repeater.

To make this all work, the City is purchasing a tri-band BTECH UV-25X4 radio and a Comet CX-333 tri-band base station antenna, which will go on the roof of City Hall. Before this, we had no way of taking advantage of SOARA's generous offer. Below is a photo of our radio area at City Hall. I am still working on the placement of the radios, but this is the current situation.

In support of the City and Laguna Woods Village, our role is to pass many emergency messages and to deploy to various City locations to provide damage reports. Emergency messages would be either ICS-213 messages or special "Captain Reports" in the Village. The volume could be several hundred, and we practice our message-handling skills every Thursday night on a special net. As you can realize, our primary repeater and several of our simplex frequencies would be tied up with all this traffic. Having another repeater to use for other emergency traffic, as we deploy RACES members to various City locations and establish City EOC to Village EOC communications, will be a major improvement for us. Laguna Woods RACES is very grateful to SOARA for providing this significant capability during a disaster.

Laguna Woods RACES radio area at City Hall.

OCSD Emergency Management Division

Congratulations to Michelle Anderson, who has been promoted to Director of the OCSD Emergency Management Division. She looks forward to working more closely with and supporting OCRACES.

Orange County Amateur Radio Club (OCARC)

The next general meeting of the Orange County Amateur Radio Club will be on Friday, July 16, 2021, at 1900 hours, on Zoom. The program topic will be "The Eco Friendly Rover," presented by Wayne Overbeck, N6NB, and Carrie Tai, W6TAI. They were the cover story on the May 2021 issue of *QST*. Club members will receive Zoom sign-on information prior to the meeting. Interested visitors can receive sign-on information on the day of the meeting by an email link that will be provided on http://www.w6ze.org after 0900 hours.

South Orange Amateur Radio Association (SOARA)

Joe Perrigoue, K7KCE, will hide the transmitter on the next SOARA T-hunt on Saturday, July 10, 2021, at 1000 hours (time might be changed). The fox frequency is 146.565 MHz, with coordination on the 447.180 MHz repeater (131.8 Hz PL). The fox will hide anywhere in Orange County south of the 55 Freeway.

July 2021

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3 Weekly 60 m ACS Net
4 Independence Day	5 Independence Day Observed, no net, no mtg	6	7	8	9	10 Weekly 60 m ACS Net
11	12 Weekly 2 m ACS Net & OCRACES Teams Mtg	13	14	15	16 Orange County Amateur Radio Club Meeting	17 Weekly 60 m ACS Net
18	19 Weekly 2 m ACS Net	20	21	22	23	24 Weekly 60 m ACS Net
25	26 ACS Net on 4 Bands	27	28	29	30	31 Weekly 60 m ACS Net

Upcoming Events:

- **July 4:** Independence Day
- **July 5:** Independence Day Observed; County holiday, no net, no meeting
- **July 12:** OCRACES Meeting on Microsoft Teams, 1930 hours
- **July 16:** Orange County Amateur Radio Club Meeting on Zoom, 1900 hours
- **October 2:** City/County RACES & EmComm ACS Exercise
- **October 14:** Orientation for PSRs, Sheriff's Academy, 1830 hours
- **October 23:** Prescreen for PSRs, Sheriff's Academy, 0900 hours

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 (out of service)
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

OCSD RACES Coordinator
Lee Kaser, KK6VIV, 714-628-7081

Radio Officer
Scott Byington, KC6MMF

Chief Radio Officer
Ken Bourne, W6HK, 714-997-0073

Assistant Radio Officers
Jack Barth, AB6VC
Ernest Fierheller, KG6LXT

County of Orange RACES

Orange County Sheriff's Department, Emergency Management Division
2644 Santiago Canyon Road, Silverado, CA 92676
Telephone: 714-628-7081 ● Fax: 714-628-7154
E-mail: LKaser@OCSheriff.gov

County of Orange RACES

OCSD Emergency Management Division
2644 Santiago Canyon Road
Silverado, CA 92676

Telephone – 714-628-7081
Fax – 714-628-7154
E-mail: LKaser@OCSheriff.gov

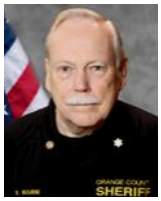
Visit Our Web Site
https://ocraces.org
It's Where It's @!

Questions or Comments?
Contact *NetControl* Editor Ken Bourne, W6HK
kbourne.ocsd@earthlink.net

"W6ACS ... Serving Orange County"

Meet Your County of Orange RACES Members!

Officers →



Ken Bourne
W6HK

Scott Byington
KC6MMF

Jack Barth
AB6VC

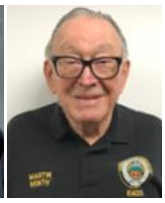
Ernest Fierheller
KG6LXT

Randy Benicky
N6PRL

Ray Grimes
N8RG

Peter Jimenez
KI6UTE

Walter Kroy
KC6HAM



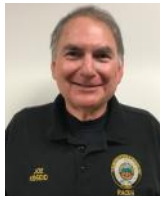
Martin La Rocque
N6NTH

Steve Livingston
NJ6R

Don Mikami
N6ELD

Fran Needham
KJ6UJS

Harvey Packard
KM6BV



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OCSD RACES Coordinator →

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