September 2022

Newsletter of the County of Orange Radio Amateur Civil Emergency Service

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OCRACES Meeting

Online on Zoom

Monday, September 12, 2022, at 7:30 p.m.

Orange County Sheriff's Department
Emergency Management Division

CRO's Nest

by Ken Bourne, W6HK, OCRACES Chief Radio Officer

Dual-Band Mobile Antenna

Some RACES members are equipped with only hand-held radios. That is not enough! Mobile radios are often needed for deployment into canyons or other areas where repeater access is poor, and sometimes to run nets with solid, reliable signals. Mobile installations typically use antennas that are far superior to hand-held antennas. Randy Benicky, N6PRL, recently installed a high-performance mobile antenna with an unusual design, the COMPACtenna 2M/440+, on his Subaru SUV. During a recent test on 2 meters simplex, I received his consistently strong signal at my Orange location while he drove all the way to Rancho Santa Margarita, through areas that would otherwise produce marginal signals with a more common antenna..

The 2M/440+ looks like a black cylindrical tube and is only 9 inches tall and 1.5 inches wide, often allowing passage into parking garages, drive-throughs, and below overhangs and branches. Randy installed it according to manufacturer's recommendations into an NMO mag mount at the right rear corner of his vehicle's roof. SWR is well below 2:1, but climbs dramatically with decreased performance if the antenna is moved to the center of the roof. It is rated at 100 watts on 2 meters and 75 watts on 70 centimeters.

You would expect a mobile antenna that is only 9 inches tall to radiate a much weaker signal than a quarter-wave whip, which is more than twice the length. However, the 2M/440+ is specified with a 5 dB-MEG gain. The manufacturer, COMPACtenna, in determining that dB-MEG (Decibels Mean Effective Gain) specification, most likely measured received power and averaged using a quarter-wave whip (0 dBi) in a real mobile or reflective environment. The whip was then replaced with the 2M/440+ and again measured in the same environment. The MEG gain is then the ratio of the two received powers. On average, the 2M/440+ receives over 3 times the power of the quarter-wave whip in a mobile or reflective environment. Alternately said, the antenna has 5 dBi (decibels over an isotropic source, which is a theoretical point source) Mean Effective Gain.

The theory behind the antenna design is not completely shared by the manufacturer. COMPACtenna says it's a "Unique Electric/Magnetic Field Diversity Science & Technology Patented Design. With a special design construct of spiraled and cylindrical metal sheeting including 'extended flat monofilar spiral Tesla-like coils,' all resistance, inductance, and capacitance (matching) is efficiently done by the physical metallic geometric form of the antenna itself, as opposed to internal or external (lossy) components of other designs. The built-in 'Magnetic Field Resonator' matching system is an effectual component of the electromagnetic E & H fields production, resulting in better performance than expected for such a small antenna. With a particularly strong magnetic near field, proximity noise is reduced." Resulting diverse effective electromagnetic fields are claimed to mitigate signal drops, reduce flutter, and increase reliable range, which Randy has confirmed. ✸

Next OCRACES Meeting: Sept. 12th on Zoom

The next OCRACES meeting will be on Monday, September 12, 2022, at 7:30 p.m. on Zoom. The OCSD Mutual Aid Bureau has given us permission to return to Zoom for our online meetings, as long as everyone uses the application from a non-department computer (i.e., their personal computer). Although Microsoft Teams is more secure and has some advanced meeting features that are not available with Zoom, Zoom is more user-friendly for our purposes and meets our requirements. Our meetings will focus on RACES matters, including discussion of radio-electronics technology and our training for responding to emergencies, and will prohibit discussing sensitive Department issues.

At this online Zoom meeting, OC Fire Watch Manager Tony Pointer will conduct our annual Severe Fire Weather Patrol training. We will also discuss our preparations for the October 1st City/County RACES & EmComm ACS Exercise.

OCRACES members and other PSRs and sworn Reserves planning to attend this meeting need to register on the Reserve Tracker Calendar. City RACES and EmComm members are also invited to attend this meeting. ✸

City/County ACS Exercise: October 1st

The next City/County RACES & EmComm ACS Exercise will be on Saturday, October 1, 2022, from 0900 to 1200 hours. Because of concerns that emergency communications might be degraded or fail due to poor repeater coverage in some areas of the county, or due to possible repeater failure, this exercise will be a field-deployment exercise and will focus on alternative means of communications in case of such repeater problems. These alternative means of communications will consist of simplex communications on 2 meters FM and HF NVIS (Near Vertical Incidence Skywave) on 60 meters, Winlink, and AREDN mesh. County and city RACES and EmComm members will operate portable stations, preferably at locations that need to be tested for local and countywide simplex radio coverage. We recommend that they use battery or generator power, portable antennas, and simplex only (simulating repeater failure).

The exercise will consist of three elements: a) 2 meters and 60 meters simplex; b) Winlink; and c) AREDN mesh.

a) From 0900 to 0930 hours, county and city RACES and EmComm units will call their own members on their primary 2-meter simplex frequencies. This is a great opportunity for all city RACES units to check simplex communications from secondary locations throughout their cities to ensure that alternates to their EOC are available. Then from 0930 to 1030 hours, W6ACS net control will call each city and EmComm unit on 146.595 MHz simplex and ask for a report from a designated member of the number of their members who checked in on their simplex frequency. From 1000 to 1030 hours, on 60 meters, OCRACES net control will run a net on 60 meters channel 4 (5371.5 kHz dial frequency, upper sideband), using the same roll call of county and city RACES and EmComm stations within Orange County as on the regular weekly Saturday morning OCRACES ACS net. From 1030 to 1130 hours, on 60 meters, net control will call for additional RACES and EmComm stations in Orange County that are not on the regular Saturday roll call, and then a roll call of RACES/ACS stations outside Orange County, and finally a roll call of non-EmComm stations on the regular Saturday list. Visitors may check in after the roll calls are completed.

b) Loma Ridge net control will operate Winlink from about 0900 to 1200 hours, but Winlink drill messages will be accepted over a 24-hour period from 1500 hours on Friday, September 30th, to 1500 hours on Saturday, October 1st. The exercise plan will have details and supporting documentation on creating and sending a message with the check-in form built into Winlink Express. All radio amateurs are welcome to participate. Communications may be via a Winlink RMS (Radio Message Server) VHF or UHF gateway or via other modes such as VARA or Pactor HF, mesh, or telnet. Messages need to be addressed to CAORCO. Briefly describe your location and your affiliation and role in the exercise, in accordance with the exercise plan.

c) The AREDN mesh section of the exercise will run from 1030 to 1200 hours on Saturday, October 1st. All radio amateurs are welcome to participate. You will need to have an operational VoIP phone connected to your node and an FTP client (such as FileZilla) installed on your computer. The exercise will include using MeshChat, calling via a VoIP phone, and transferring files, such as a spreadsheet, document, text, screen capture, image, or pdf, simulating a request for supplies, damage report, incident photo, etc. Details will be provided in the exercise plan.

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Winlink in Orange County

by Scott MacGillivray, KM6RTE, KM6RTE@gmail.com

Upcoming Online Introduction to Winlink Express Classes (**New Updated Dates**)

Another series of the ***Introduction to Winlink Express*** classes will be starting Thursday, September 15th, and Sunday, September 18th, 2022. Due to a schedule conflict outside my control, the dates needed to shift a week later than previously announced. Each week's session will be approximately an hour long, and the overall course will last 5 weeks. The online sessions will be offered on Thursday afternoons (at noon), and repeated the following Sunday afternoons (at 3:00 p.m.) to allow scheduling flexibility. It doesn't matter which day you participate for a given session since they are the same, and you can change days if you have a schedule conflict on a given week.

The level of instruction is focused toward individuals that don't know much about Winlink, as well as those who may have played with Winlink, but want to have a good foundation of the basics. The weekly course dates and associated topic descriptions are listed in the chart below:

The classes are an introduction to Winlink Express software using the built-in Packet encoding that is the most widely used. The classes do not cover more advanced topics like VARA encoding, and using Winlink on HF or microwave (i.e., mesh) bands. If there is enough interest, classes that cover these more advanced topics will be offered.

Prior signup is required for attendance. If you're interested in signing up and/or have any questions about the classes, please send me an email (KM6RTE@gmail.com). Please include your name, call sign, and what emergency communications organization(s) you participate in (e.g., city RACES, ARES, OCHEART, or other). Space is limited, so if you are interested, please let me know as soon as possible. While open to everyone, participants in Orange County will have priority.

Prior to each week's session, registered participants will be sent the Zoom meeting information and handout material. Please note that recording of the class sessions is not currently planned. If you think you might miss a week's lesson, please go ahead and sign up, since the handout materials are my briefing charts, which provide a fairly complete overview of what is covered.

Session & Dates	Topics Covered
#1. Sept 15 & 18	Introduction, overview, and uses for Winlink. Winlink software installation and setup. Compose and send a simple message.
#2. Sept 22 & 25	Additional setup and capabilities, overview of the built-in Forms and customization features.
#3. Sept 29 & Oct 2	Representative computer and radio hardware configurations. Setting up Winlink with a radio (simple).
#4. Oct 6 & Oct 9	Additional hardware configurations. Setting up Winlink with a radio (continued, more advanced).
#5. Oct 13 & 16	Additional radio setup options, and other Winlink operating modes.

Upcoming Winlink Peer-to-Peer Practice Drill September 10th

This quarter's countywide Winlink Peer-to-Peer (P2P) drill is scheduled for Saturday, September 10th. This drill will be similar to the P2P drill held on June 10, 2022, that utilized attaching an Express Check-In form to your message.

For more information on the drill, refer to the instructions distributed through the OCRACES Groups.io mailing list or contact me at KM6RTE@gmail.com. These countywide Winlink P2P drills are held once a quarter, and next quarter's (Q4) drill is tentatively scheduled for Saturday, December 10, 2022. ✸

RACES to Assist with WEA Test on Sept. 13th

The County of Orange will be conducting a Wireless Emergency Alert (WEA) test at 1000 hours on Tuesday, September 13, 2022, to gather message delivery statistics along with the Federal Communications Commission (FCC). The testing will be in the Silverado Canyon area. In addition to gathering public statistics, a "control group" is needed with first-hand real-time receipt of the WEA.

OCRACES might be deployed to the testing area to record their results first-hand and transmit their findings to Net Control at Loma Ridge. This could accomplish many goals, such as the WEA capability, canyon coverage, and fulfilling PSR requirements. Considering this falls on a Tuesday, assistance might be needed from members of city RACES units.

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Preventative Search and Rescue

by RACES PSR Eric Bowen, W6RTR

If you enjoy hiking, mountain biking, or just getting out into nature, you may have visited some of the wilderness parks here in Orange County. Did you know that members of the Search and Rescue Reserve Unit (SRRU) are tasked with patrolling two of these wilderness parks on the weekends during the year? If you frequent Aliso and Wood Canyons Wilderness Park or Black Star Canyon, you may have seen our four-wheel-drive vehicles or off-road vehicles on the trails.

Members of the unit provide PSAR (Preventative Search and Rescue) duties in county parks and wilderness areas. PSAR patrols are focused on preventing the public from getting into a situation where a full rescue incident could occur. Efforts are made to educate the public about hiking in the wilderness, proper hydration, and equipment preparation, and we also provide limited medical assistance primarily in heat-related emergencies.

Members of the unit include sworn reserve deputies, PSRs (Professional Services Responders), and Explorers. As PSRs we do not enforce any laws or park rules, but we do supplement the Park Rangers and help advise park visitors of these rules. Some examples include advising park visitors to remain on trail, to stay out of closed areas, to keep their dogs on a leash, or to not ride e-bikes in the park.

Most of our time, and our primary focus, is spent making sure that the park visitors are safe while they are out on trail. We try to help them before they need to call 911 for help and we have effectively eliminated 911 calls while we are patrolling the parks. Our vehicles are loaded with many items to help with this, including an ice chest filled with water and Gatorade, a comprehensive medical kit, an AED (Automated External Defibrillator), and a dog bowl. Yep, a dog bowl! You would be surprised at the number of people who forget about bringing water for their dogs or they run out part-way through their hike.

Providing medical aid and assessing hikers, and dogs, in the field for heat-related emergencies is a huge responsibility. Some days it is as easy as giving a bottle of water to a hiker and other days we are preparing a person that was bitten by a rattlesnake to be loaded into a litter that is about to be hoisted out of the park by one of the Sheriff's Department Duke helicopters, as happened just a few months ago.

All members of the unit are required to undergo training that includes the search & rescue academy, First Aid/CPR/AED, and additional on-line training resources. We also train in-person monthly to gain the skills necessary to operate in the field.

OCSD RACES/SRRU PSR Eric Bowen, W6RTR, on a PSAR mission during an unexpected rainstorm that lasted more than an hour. No cover and no rain gear were available.

I have the honor of being one of our PSAR Team Leaders. That role is similar to what a Field Training Officer (FTO) would be. The Team Leaders oversee and help train the team member that they are partnered with. Team Leaders do at least two shifts every month, while the rest of the SRRU members need to do just two PSAR shifts a year. I wish I could do these every weekend!

When doing the PSAR patrols at Aliso and Wood Canyons, which is where I do all of my patrols, we get to drive one of our Polaris MRZRs on the trails. These were donated to us by the US Military and they were used primarily by US Special Operations Command (USSOCOM). They get a lot of attention on the trails and are great conversation starters with everybody in the park. When speaking with the park visitors, I always joke with them, saying that my payment for volunteering and doing the PSAR patrols is that I am able to drive such a cool vehicle. Everybody we meet wants a ride in them. Unfortunately, the only people we give a ride to are the ones experiencing a heat-related emergency or a physical injury.

How often does that happen? All the time. In the last few months, there hasn't been a shift I have worked where we haven't had to treat and then transport somebody back to their vehicle due to a heat-related emergency. It is amazing how quickly a few bottles of water and a Gatorade will help revive someone to be able to safely go back home instead of to a hospital. The MRZRs allow us quick access to so much of the park that we are usually able to get to these hikers and provide aid to them before they need to be seen by an ambulance or transported to the hospital, or worse, get a helicopter ride to the local trauma center.

As I stated earlier, this type of assignment can be a lot of responsibility, especially when you look at the role PSRs are filling. We work very closely with Orange

(Continued on page 5)

Preventative Search and Rescue *Continued from page 4*

County Parks and they place a lot of trust in the Sheriff's Department and the SRRU in order to fulfill this assignment. There is no other role that PSRs are placed into where we can be directly responsible for people's lives and for their treatment prior to medical aid arriving, if needed. We rely on our PSAR leadership and our experienced members and team leaders, as well as the continued training that the SRRU provides to its unit members to make sure that we are able to complete this assignment to the highest standards in care. It is something that I am proud to be a part of and I look forward to every PSAR shift that I am assigned.

If you would like some more info about the PSAR program, there is a video on the OCSD YouTube channel about the PSAR program, titled, "Preventative Search & Rescue." ✸

September Is National Preparedness Month

National Preparedness Month is an observance each September to raise awareness about the importance of preparing for disasters and emergencies that could happen at any time.

In 2021, FEMA's Ready Campaign and the Ad Council broke ground by producing the first-ever national preparedness campaign specifically targeting the Latino community for National Preparedness Month. Released during Hispanic Heritage month, the advertisements centered around the Latino community's commitment to personal planning for occasions and family milestones as a bridge to also planning for disasters.

This one-of-a-kind campaign is committed to putting people first and reaching communities where they are. To continue these efforts, this year's National Preparedness Month campaign will feature a call to action for the Black and African American community.

This year's national public service announcements are being developed and will be released throughout the country this September, to help get preparedness information into the hands of those who live in underserved communities.

2022 Theme: A Lasting Legacy

The life you've built is worth protecting. Prepare for disasters to create a lasting legacy for you and your family.

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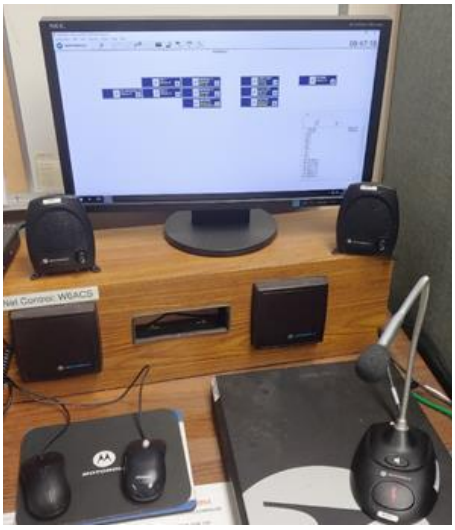
Public-Safety Radio Channels Series Ends

Thanks to Robert Stoffel, KD6DAQ, for an outstanding series of articles in *NetControl* on public-safety radio channels in Orange County. As a retired Director of OCSD's Communications & Technology Division, Robert has a vast amount of information to share with us. His articles began with the July 2021 issue of *NetControl* and concluded with the August 2022 issue. Those issues may be downloaded from the "Newsletters" page on the OCRACES website at https://ocraces.org/netcontrols.html.

RACES members are sometimes called upon to operate on public-safety radio channels, either from the Orange County Emergency Operations Center (EOC) at Loma Ridge, in the field with the Control 7 communications response vehicle, or using a public-safety radio at the scene of an incident or special event. In this series of articles, Robert shared information about these radio systems and channels, providing members with a better understanding on what they are and how they are used in Orange County. Robert's articles progressed from discussions about VHF low-band to VHF high-band, then to UHF, 700 MHz, and, finally, several articles about the many systems and channels on 800 MHz.

Robert is scheduled to present a look at the 800-MHz radio system at the November 7th in-person OCRACES meeting at Loma Ridge. At a later meeting, he will do a training session on using the 800-MHz CCCS portable radio. Finally, he will conduct OCRACES-only training on using the public-safety dispatch console in the EOC RACES Room. ✸



Public-safety dispatch console in EOC RACES Room.

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 and near Orange County, as well as from Cal OES and federal agencies.

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

kbourne.ocsd@earthlink.net

Orange County SKYWARN

Orange County SKYWARN Coordinator Scott O'Donnell, WX6STO, activated SKYWARN on Tuesday, August 9, 2022, at about 10:30 a.m., at the request of the National Weather Service (NWS), for thunderstorm activity in the mountains and deserts. A Flood Watch had been issued for those areas and went into effect at noon. Storms were not forecasted along the coast but were possible in the local mountains. NWS asked for reports of lightning, heavy rain, fire starts, flooding, and impacts from thunderstorms. Showers were predicted to become more numerous in the afternoon, along with a chance of thunderstorms. More widespread showers were predicted to continue into the evening. Spotters were asked to report rainfall, such as how much rain in a given time (e.g., 1 inch in 20 minutes), and flooding—urban streets, ponding of water in low-lying areas, poor drainage, and flash flooding (swift moving and greater than 6 inches. Reports were requested of flooding that threatened life or property or disrupted traffic. Wind gusts greater than 40 mph were also to be reported, and all wind-related damage (e.g., tree or power poles down). Forecasters wanted photos to affirm situations, including day/time and specific location.

Orange County Amateur Radio Club

The next OCARC meeting will be on Friday, September 19, 2022, at 1900 hours. The guest speaker, Dr. Ed Fong, WB6IQN, will present a program on the design and fabrication of the J-pole antenna. The presentation will be from Sunnyvale, California, via Zoom. OCARC most likely will meet at the American Red Cross (George M. Chitty Building), 600 Parkcenter Drive, in Santa Ana, and will have the Zoom setup there for the presentation. This will be a hybrid meeting, to attend in-person or via Zoom.

Undersheriff Jeff Hallock Meets with OCRACES PSRs

On Tuesday, August 23, 2022, Undersheriff Jeff Hallock met with RACES PSRs Ken Bourne, W6HK (Chief Radio Officer), Robert Stoffel, KD6DAQ (retired Communications & Technology Division Director), Randy Benicky, N6PRL, Scott MacGillivray, KM6RTE, and Eric Bowen, W6RTR, at Hidden House Coffee in Santa Ana, to discuss OCRACES activities.

Left to right are Scott MacGillivray, KM6RTE, Ken Bourne, W6HK, Undersheriff Jeff Hallock, Eric Bowen, W6RTR, Robert Stoffel, KD6DAQ, and Randy Benicky, N6PRL.

September 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3 Weekly 60 m ACS Net
4	5 Labor Day (no net, no meeting)	6	7	8	9	10 Weekly 60 m ACS Net & PSR Prescreen
11	12 Weekly 2 m ACS Net & OCRACES Meeting	13 WEA Test	14	15	16 Orange County Amateur Radio Club Meeting	17 Weekly 60 m ACS Net
18	19 Weekly 2 m ACS Net	20	21 Orientation for PSR Applicants	22	23	24 CPR Training & Weekly 60 m ACS Net
25	26 ACS Nets on 4 Bands	27	28	29	30	

Upcoming Events:

- **September 5:** Labor Day; no net, no meeting
- **September 12, 1930-2130 hours:** OC-RACES meeting online on Zoom
- **September 10, 0900 hours:** Prescreen for PSR Applicants, OC Sheriff's Regional Training Academy
- **September 10:** Winlink Peer-to-Peer Exercise (informal)
- **September 13, 1000 hours:** WEA Test, Silverado Canyon
- **September 16, 1900 hours:** Orange County Amateur Radio Club Meeting
- **September 21, 1830 hours:** Orientation for PSR Applicants, OC Sheriff's Regional Training Academy
- **September 24, 0800-1700 hours:** CPR Training, Katella Training Academy
- **October 1, 0900 hours:** Prescreen for PSR Applicants, OC Sheriff's Regional Training Academy
- **October 1, 0900-1200 hours:** City/ County RACES & EmComm ACS Exercise
- **October 3, 1930-2130 hours:** OCRACES meeting online on Zoom

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

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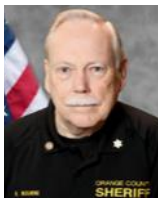
"W6ACS ... Serving Orange County"

Meet Your County of Orange RACES Members!

Officers



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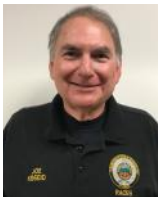

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