**January 2017**

**County of Orange RACES**

# NetControl

**Newsletter of the County of Orange Radio Amateur Civil Emergency Service**

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**The Next OCRACES Meeting Is**

**January 9, 2017**
**1930 Hours**

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

**Featured Speaker: Randy Benicky, N6PRL GP-5/SSB Receiver**

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Orange County Sheriff's Department
Communications & Technology Division

# Captain's Corner
## *by RACES Captain Ken Bourne, W6HK, Chief Radio Officer*

### Signal Reports

It amazes me that many hams transmit bad audio, while the hams they are working do not mention the problem. Sure, it's not good practice to mention poor operating procedures over the air. (That should be done in person or by e-mail or telephone, to avoid embarrassing someone over the air.) But it *is* good practice to give a bad signal report over the air, such as distorted audio, over-deviation, "broken" transmission, etc.

One of the prime reasons for running weekly ACS/RACES nets is to check our equipment. It is the responsibility of the net control operator to comment if the signal is bad (weak, broken, distorted, hum, etc.). By doing so, the ham with the bad signal can take steps to rectify the problem before he has to use his radio during an emergency. By the way, hum is sometimes produced when a handheld radio is used while sitting in a charger.

Why do some hams avoid giving bad signal reports? Do they not want to hurt the other ham's feelings? Do they not want a confrontation with an "overly sensitive" ham?

Use common sense when giving a signal report. If, on an FM repeater, a signal is full quieting but the transmit audio is low, don't tell the ham that he needs to increase power or change his location. Audio level has nothing to do with power. He needs to adjust his mic gain or perhaps his deviation.

Speaking of FM deviation, too much will cause dropouts on voice peaks, either by deviating beyond the passband of the repeater receiver or by "overriding" the repeater receiver's subaudible tone decoder.

If you receive a bad signal report, receive it graciously, thanking the other ham for letting you know that you don't sound good. Then work on correcting the problem.

Sometimes signal distortion is not caused by a problem in a transmitter, so be careful about telling a ham that he has a problem. It could be due to multipath distortion, caused by a direct signal being out of phase with a reflected signal. This can be common on VHF and UHF FM due to reflections off of hills or buildings. It can also occur on HF AM due to multiple paths off the ionosphere (called selective fading). Learn to recognize the characteristics of various types of distortion, so you can be accurate in describing the possible source of distortion.

Some distortion is caused by radio energy feeding back into the modulator of a transmitter. This is often the case in ham shacks with poor grounding or by antennas with high SWR. The problem is sometimes solved with a balun coil or RF isolator to prevent RF from traveling back to the ham shack from the antenna. Once, while testing signal quality on all bands with the Elecraft K3 transceiver in the EOC RACES Room, we noticed severe transmit audio distortion on 20 meters, while the audio was clean on all the other bands. We determined that RF was getting back into the transceiver through the microphone cable. We installed a Fair-Rite clamp-on ferrite core on the mic cable, but the problem remained. We used a

# Captain's Corner *Continued from page 1*

mix 31 core, which is effective at HF. We installed a second core, but still no effect. However, after installing the third core, the problem disappeared. Perhaps the mic cable was resonant at 20 meters, and a different mic with a different length of cable might not have exhibited the problem.

The other day, I heard a local ham on the DMR SoCal talk group using a TYT MD-380 handheld radio. It sounded great, like all MD-380s do—until he plugged in a speaker mic that he had just purchased. Ugh! It sounded terrible—mushy and too bassy (typical of many plug-in speaker mics). But the ham he was talking to said he sounded fine, when asked. In my ripe old age, I'll admit my ears have seen (heard) better days, but I know bad audio when I hear it. More hams need to learn to be critical when evaluating transmit audio quality.

Another local ham on DMR has several different radios. On one radio, his mic level is too low, and he crowds the mic to compensate, which picks up the sound of his breathing. The breathing noise is often louder than his voice, resulting in some syllables not being heard. Although he has been a ham for many years, he has never learned how to use a hand mic or handheld radio properly. He needs to speak across the mic (held to the side of his mouth), not directly into it. On another radio, his mic level is much too high, resulting in severe distortion when he speaks, especially as he crowds his mic.

Some hand mics are inferior to desk mics or headsets, but, especially in mobile applications, are the most common. Hand mics typically pick up handling noise, and are usually not held at a consistent distance from the mouth. Headsets keep the mic element at a consistent distance. Transmit audio level, then, will stay the same, in accordance with mic-gain adjustment. However, headsets are typically not recommended for mobile operation.

On DMR, one talk group (9998), called "Parrot," allows a ham to speak into his mic while transmitting, and then to hear his audio retransmitted back. He can then be his own judge on the quality of his audio. Another talk group (9999), found on a few systems, allows a ham to hear his transmit audio via audio streaming on the Internet. If you are on a Brandmeister system, go to http://hose.brandmeister.network and select "Scanner." Then fill in "9999" under "Talk groups" and click "APPLY." You must use a Chrome browser for the audio level meter to work. If the audio level goes into the red, the transceiver's mic gain should be reduced.

Heil microphones are popular for use with HF transceivers, and they are of fairly high quality. However, some hams prefer to use other microphones, such as those used by professional entertainers. Hams active on ESSB or AM are quite fussy about the quality of their audio, and some have spent thousands of dollars on professional studio mics, such as Neumann microphones. An example of a popular, more economical, studio mic is the Shure SM58 dynamic microphone, available for slightly less than $100. A similar microphone, the ES-58, is available from GLS Audio in Garden Grove for $40. These studio mics require a stand and a push-to-talk switch, which could be a small push-button switch in a cable or a foot switch. Typical frequency response is 50 Hz to 15,000 Hz, but who needs that kind of response for ham radio?!!!

Very high quality transmit audio on HF SSB can be achieved with a cheap computer electret mic. Cheap computer headsets work fine, especially on transceivers with adjustable transmit audio frequency response. I use a Yamaha CM500 headset (less than $60), which



**Yamaha CM500 headset.**

combines comfortable, closed-ear, noise-reducing headphones with a sensitive electret mic. For push-to-talk, I use a $12 foot switch that I purchased from Orvac Electronics in Fullerton. Adjusting frequency response is easy if the transceiver has a built-in monitor for listening to transmit audio, If it does not, it can be tricky to listen on another receiver because of feedback, or relying on audio reports from another ham (who might have bad ears or poor judgment of audio quality).

I often admire (or despise) the audio quality of some transmitters on HF AM. (AM is now much less prevalent than SSB on HF, but audio quality is more discernable on AM.) A few years ago, on a 6-meter AM net, I was impressed with the audio quality of a station in Westminster. He was using an old "boat anchor" transmitter. Eventually, he homebrewed a new transmitter, with the modulator designed in accordance with studio broadcast standards. If he were transmitting music (illegal on ham radio), the quality would have been great. However, for amateur communications, especially under noisy or weak-signal conditions, the communications quality was awful! With the old transmitter, he had great high-frequency response. But with his homebrew transmitter, he introduced low frequencies into his audio. He lost the crisp quality, replaced by too much bass response for effective communications.

# Next OCRACES Meeting: January 9th

Due to the January 2nd holiday (New Year's Day Observed), there will be no meeting or net on the first Monday of January. Rather, the next OCRACES meeting will be on the second Monday of the month, January 9, 2017, at 7:30 PM, at OCSD Communications & Technology Division, 840 N. Eckhoff Street, Suite 104, in Orange. Our featured speaker at this meeting will be Randy Benicky, N6PRL, who will talk about the CountyComm Model GP-5/SSB FM stereo/MW/SW-SSB DSP receiver. The radio covers medium wave from 520 to 1710 kHz and shortwave from 2300 to 30000 kHz and the FM broadcast band (stereo). It provides LSB and USB single-sideband reception. There are also 450 regular memories (100 AM, 100 FM, and 250 shortwave). Digital Signal Processing (DSP) improves reception. Another feature is a sleep timer.


GP-5/SSB receiver.

# Next Cooperative T-Hunt: January 16th

Due to holiday activities, there was no cooperative T-hunt in December. The next cooperative T-hunt will be held on Monday, January 16, 2017, immediately following the OCRACES 2-meter net (approximately 7:20 PM). The fox will transmit on the input (146.295 MHz) of the 146.895 MHz repeater. Hunters will compare bearings via the 448.320 MHz repeater (while the 449.100 MHz repeater is down), and are encouraged to beacon their positions via APRS throughout the hunt. The fox will be hiding in a city or sector of Orange County (to be announced a few days prior to the hunt) on paved, publicly accessible property. No fees will be required to drive directly to the fox. We are looking for a volunteer to be the fox, and a "fox box" will be available.

The cooperative T-hunts are usually held on the third Monday of each month. 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. 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. Other useful tools are the Foxhunt app for iPhones and the Triangulate app for Android phones. For some excellent information on T-hunting, see http://www.homingin.com.

# Cal OES ACS Meeting: January 7th

OCSD Emergency Communications Coordinator Lee Kaser, KK6VIV, and OCRACES Chief Radio Officer Ken Bourne, W6HK, are planning to attend a Cal OES Southern Region ACS leadership meeting on Saturday, January 7, 2017, at the Cal OES Southern Region EOC, located at the Los Alamitos Joint Forces Training Base. The purpose of the meeting, which was called by Jeff Lee, KF6NXQ, Deputy Chief ACS Officer/State RACES Officer for Southern California, is to create and maintain a leadership working group for the various ACS units in the Southern Region. (A similar effort is underway for the rest of the state.)

There are 11 counties (operational areas) and two Mutual Aid Regions within the Southern Administration Region. Within Mutual Aid Region I are Orange, Los Angeles, Ventura, Santa Barbara, and San Luis Obispo Counties. Within Mutual Aid Region VI are San Diego, Imperial, Riverside, San Bernardino, Inyo, and Mono Counties. Within the Southern Region are 226 incorporated cities.

The event, to be attended by the RACES/ACS Chief Radio Officer and RACES Program Coordinator from each county in the Southern Region, will begin with a business meeting and outline the framework for the group. Afterwards, the host agency (Cal OES ACS) will demonstrate and discuss its various resources.

Future meetings will be rotated around the region, where the hosting agency will be able to showcase their assets.

# OCRACES Celebrates at Holiday Dinner

OCRACES members had a great time at the annual Holiday Dinner at Ricardo's Don José in Orange on Monday, December 5, 2016. They were joined by OCSD Communications & Technology Division Director Dave Fontneau, who gave a warm thank you to the members for their service, and Program Support Manager Delia Kraft, KR6AFT. OCSD Emergency Communications Manager Lee Kaser, KK6VIV, thanked the members and presented awards and certificates, including Officer of the Year to Chief Radio Officer Ken Bourne, W6HK (whose wife Carol, N6YL, was recognized for bringing her culinary treats to each meeting), and Member of the Year to Tony Scalpi, N2VAJ. Former Division Director Robert Stoffel, KD6DAQ, gave a nice recognition of Ken's service to OCRACES, which began in 1978. Ken recently celebrated 60 years in amateur radio and RACES (including Illinois and State of California OES).

Others at the Holiday Dinner included Randy Benicky, N6PRL (with wife Lee Anne, KI6VUH), Roger Berchtold, WB6HMW, Ray Grimes, N8RG (with wife Carol, WB6VMH), Walter Kroy, KC6HAM (with wife Terey), Martin La Rocque, N6NTH (with son Rod, KK6DBP), Matt Luczko, KM6CAO, Bob McFadden, KK6CUS, Fran Needham, KJ6UJS (with wife Sharon and daughter Mona), Harvey Packard, KM6BV (with wife Jan), Tom Tracey, KC6FIC, Ken Tucker, WF6F (with wife Vicki), and Tom Wright, KJ6SPE (with wife Debi).

# FEMA Interoperability Exercise Is a Success

Laura Goudreau, KG7BQR, Regional Emergency Communications Coordinator for FEMA Region X, said the December 21st Region X interoperability communications exercise on 60 meters went well.

"We had 48 check-ins, of which 42 were amateurs," she said. "It was very successful and also included our first digital test."

The "COMMEX" consisted of check-ins from authorized state, tribal, federal, and amateur radio stations to test HF interoperability in case of an emergency or disaster response. FEMA Region X is made up of Alaska, Idaho, Oregon, and Washington.

The interoperability aspect between federal stations and Amateur Radio licensees was coordinated and authorized by the NTIA and the FCC. The net included a digital component, intended as a one-way broadcast to test FEMA's ability to send messages and for remote stations to receive them.

Goudreau said that while there's still room for improvement in the digital area, overall, she was happy with how the exercise played out. She said FEMA would continue these exercises in 2017.

# City/County RACES Meeting: Feb. 13th

The next City/County RACES & MOU meeting will be on Monday, February 13, 2017, at 7:30 PM, at 840 N. Eckhoff Street, Suite 104, in Orange. At this meeting we will discuss plans for upcoming ACS exercises.

# Harvey Packard, KM6BV, Retires as RO

Harvey Packard, KM6BV, has asked to step down as one of the OCRACES Radio Officers. Harvey has been a highly valued member and Radio Officer for many years (since June 1991), and we deeply appreciate his service. He will continue to be an active OCRACES member and an OCSD PSR (Professional Services Responder).

Throughout the years, Harvey has worked on many projects in OCRACES, including considerable work on the OCRACES van, helping to keep it shipshape until it was finally decommissioned recently. He has participated in many important events, such as Field Day, Severe Fire Weather Patrols, HRO Ham Jam, Radio Rodeo, elections, drills, and activations. He has mentored many new members, answering questions and offering advice whenever needed.

As a PSR, Harvey has spent countless hours at Eckhoff on equipment and vehicle maintenance.

As Harvey relinquishes his position as South Squad Radio Officer, Lt. Scott Byington, KC6MMF, will move into that position.

# OCRACES Members Attend Division Lunch

OCSD Communications & Technology Division held its annual Holiday Luncheon on Tuesday, December 20, 2016, at Prime Cut Café in Orange. Leading the event and expressing appreciation were Program Support Manager Delia Kraft, KR6AFT, Emergency Communications Manager Lee Kaser, KK6VIV, Director Dave Fontneau, and Assistant Director Steve Miller. We were honored by the presence of Sheriff Sandra Hutchens, Undersheriff Don Barnes, Executive Director Brian Wayt, and others from OCSD Executive Command.

OCRACES members (some of whom are Division paid staff) attending the event included Chief Radio Officer Ken Bourne, W6HK, Radio Officer Harvey Packard, KM6BV, David Corsiglia, WA6TWF, Robert Stoffel, KD6DAQ (retired Division Director), Brad Russo, WB6GPM, Tony Scalpi,



At the OCSD/Communications Holiday Luncheon are (left to right) Harvey Packard, KM6BV, Ken Bourne, W6HK, and Tony Scalpi, N2VAJ.

N2VAJ, and Randy Benicky, N6PRL (and his wife Lee Anne, KI6VUH). Also attending was former Emergency Communications Coordinator Walt Wilson, K7WWW.

# RACES/MOU News from Around the County

**"RACES/MOU News" provides an opportunity to share information from all City & County RACES/ACS units and MOU organizations in Orange County.**

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

**w6hk@ ocraces.org**

## Huntington Beach RACES

Steven Graboff, W6GOS, has stepped down as Huntington Beach RACES Chief Radio Officer. The new Chief Radio Officer, effective January 1, 2016, is Shelley Lothringer, KC6ZOW.

The Huntington Beach RACES Web site has moved to Facebook. The new URL is https://www.facebook.com/groups/hbraces/.

## Hospital Disaster Support Communications System (HDSCS)

On Monday, December 12, 2016, around 1:15 PM, phones went down at Anaheim Global Medical Center. In accordance with the hospital emergency plan, HDSCS was contacted using the HDSCS Call-Up sheet. The assistant disaster coordinator informed the HDSCS contact of the problem and the request for multiple operators to back up communications. A call over a local repeater used by HDSCS found two operators ready to put the system into action. Within a few minutes, a base station was established and a lead communicator was on his way to the hospital.

The base station and an assistant emergency coordinator made calls using the HDSCS "first wave" sheet. Over the next 15 minutes, another three operators were identified and began their responses to the hospital. An additional three operators were contacted in case more would be needed and indicated their availability. As the first operator arrived, a hospital command center had been established. In under an hour, four communicators were on site, with one operator staying in contact with the base station, and the other three backing up internal communications.

Training in Hospital Incident Command System was helpful for the radio operators knowing about 213 and 214 forms, and the hospital folks knowing about the job action sheet preferred by Orange County hospitals (not the 2014 HICS version). While this facility did have a backup phone system that provided some coverage for the most important areas and some walkie-talkies, the hams were wanted also. While some patient care staff could make a call on the walkie-talkies, they couldn't always listen and preferred the HDSCS operators to handle communications.

A relief operator, identified from the initial callup, did come on site about 4½ hours into the incident. The system was declared stable just over 6 hours after the activation, and, with that, the communicators on site were asked to participate in the debriefing with the hospital staff. This phone outage was the 123rd emergency and the 97th phone outage to which HDSCS has responded since 1980.

## Orange County SKYWARN

At 9:26 PM on Friday, December 23, 2016, the National Weather Service in San Diego issued an urban and small stream flood advisory for poor drainage areas for Orange County, until 3:15 AM the next morning. At 9:15 PM, Doppler radar indicated moderate to heavy rain was developing over Orange County. Pockets of very heavy rain were predicted to move southeast along a strong cold front over the next several hours, from northwest to southeast, across the region. This heavy rain with rates of up to 1 inch per hour was likely to cause urban and small stream flooding. Overflowing poor drainage areas were like to result in minor flooding in the advisory area. Additional rainfall of 1 to 3 inches was likely overnight. This additional rain was likely to produce minor flooding of low water crossings and poor drainage areas. Accordingly, Orange County SKYWARN Coordinator Scott O'Donnell, WX6STO, announced that NWS San Diego had activated all SKYWARN, including Orange County SKYWARN. Spotters were requested to report significant weather via computer or by amateur radio. Reports were to be sent of wind damage, rain total, urban flooding, debris flows, and any other significant weather or damage as a result of the weather. After 9:30 PM, SKYWARN staff monitored the 448.040 MHz Santiago Peak primary tactical repeater. After midnight, radio operation ended until the morning commute.

# January 2017

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|---|---|---|---|---|---|---|
| 1 *Happy New Year!* | 2 *New Year's Holiday Observed, no meeting/net* | 3 | 4 | 5 | 6 | 7 *Cal OES Southern Region ACS Meeting* |
| 8 | 9 *Weekly 2 m ACS Net & OCRACES Meeting* | 10 | 11 | 12 | 13 | 14 *Weekly 40 m ACS Net* |
| 15 | 16 *Weekly 2 m ACS Net & Cooperative T-Hunt* | 17 | 18 | 19 | 20 | 21 *Weekly 40 m ACS Net* |
| 22 | 23 *Weekly Nets on Five Bands & Cal OES Nets* | 24 | 25 | 26 | 27 | 28 *Weekly 40 m ACS Net* |
| 29 | 30 | 31 | | | | |

**Upcoming Events:**

- **January 1:** Happy New Year!
- **January 2:** New Year's Holiday Observed, no meeting, no net
- **January 7:** Cal OES Southern Region ACS Leadership Meeting (no 40-meter ACS net)
- **January 9:** OCRACES Meeting, 840 N. Eckhoff Street, Suite 104, Orange; 1930 hours
- **January 16:** Cooperative T-Hunt on input of 2-meter repeater, 1920 hours
- **February 6:** OCRACES Meeting, 840 N. Eckhoff Street, Suite 104, Orange; 1930 hours
- **February 13:** City/County RACES & MOU Meeting, 840 N. Eckhoff Street, Suite 104, Orange; 1930 hours



www.ocraces.org

## Mission Statement

*County of Orange RACES has made a commitment to provide all Public Safety departments in Orange County with the most efficient response possible to supplement emergency/disaster and routine Public Safety communications events and activities. We will provide the highest level of service using Amateur and Public Safety radio resources coupled with technology, teamwork, safety, and excellence. We will do so in an efficient, professional, and courteous manner, accepting accountability for all actions. We dedicate ourselves to working in partnership with the Public Safety community to professionally excel in the ability to provide emergency communications resources and services.*

### County of Orange RACES Frequencies

40 m: 7250 kHz SSB (City/County/MOU Net—Saturdays, 1000 hours)
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 (out of service)
70 cm: 449.180 MHz output, 444.180 MHz input, 107.2 Hz PL (private)
23 cm: 1287.650 MHz, 1287.675 MHz, 1287.700 MHz, 1287.725 MHz, 1287.750 MHz, and 1287.775 MHz outputs, –12 MHz inputs, 88.5 Hz PL

*Primary Net—Mondays, 1900 hours

RACES Program Coordinator (Emergency Comm's Manager)
Lee Kaser, KK6VIV
714-704-8080

Chief Radio Officer (Captain)
Ken Bourne, W6HK
714-997-0073

Radio Officer (Lieutenant)
Scott Byington, KC6MMF

Assistant Radio Officers (Sergeants)
Jack Barth, AB6VC
Ernest Fierheller, KG6LXT
Bob McFadden, KK6CUS
Tom Tracey, KC6FIC

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Questions or Comments?
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*"W6ACS … Serving Orange County"*

# Meet Your County of Orange RACES Members!

| | | | |
|---|---|---|---|
| **Ken Bourne** W6HK | **Scott Byington** KC6MMF | **Harvey Packard** KM6BV | **Jack Barth** AB6VC |

**Ernest Fierheller** KG6LXT    **Bob McFadden** KK6CUS    **Tom Tracey** KC6FIC

**Randy Benicky** N6PRL    **Roger Berchtold** WB6HMW    **David Corsiglia** WA6TWF    **Jim Dorris** KC6RFC    **Nancee Graff** N6ZRB    **Ray Grimes** N8RG    **Walter Kroy** KC6HAM

**Martin La Rocque** N6NTH    **Matt Luczko** KM6CAO    **Fran Needham** KJ6UJS    **Kenan Reilly** KR6J    **Tom Riley** K6TPR    **Brad Russo** KB6GPM    **Tony Scalpi** N2VAJ

**Joe Selikov** KB6EID    **Robert Stoffel** KD6DAQ    **Ken Tucker** WF6F    **Tom Wright** KJ6SPE    **Lee Kaser** KK6VIV