January 2013

County of Orange RACES

NetControl

Newsletter of the County of Orange Radio Amateur Civil Emergency Service

The Next OCRACES Meeting Is

January 7, 2013
1930 Hours

840 N. Eckhoff Street, Suite 104, Orange

Presentation on D-STAR by Cypress RACES Member Ed Kane, W6ONT

Orange County Sheriff's Department Communications & Technology Division

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

Checking Signal Quality

One of the purposes of the weekly OCRACES 2-meter net is to check transmitter signal quality. The net control operator normally responds to each check-in with a simple "Roger." However, if a station checks in with a weak or broken signal, or has audio hum or has audio that is too bassy or too tinny or distorted, net control needs to advise him/her of the problem. Even when simply communicating with another ham, listen carefully to the received signal and give an honest signal report. Many hams hesitate to report that a signal is of poor quality, for fear of upsetting the other ham. Admittedly, some hams cannot accept the fact that their signal sounds bad, and will make excuses that it's band conditions or a poor receiver on the other end. I am disappointed when net control fails to tell a station checking in that he/she sounds terrible, or that gives an inaccurate description of what the signal sounds like.

One cause of poor transmit audio is an after-market microphone. A handheld microphone plugged into an HT is a common problem. Some microphones are too bassy, others are distorted, and some are too "hot," picking up background noise at a level almost as high as the operator's voice. If you purchase an accessory microphone for your HT, have a fellow ham (who is known to give accurate signal reports) listen for you and let you know how it sounds. If you have another transceiver on the same frequency, listen to yourself (while avoiding feedback) and try to detect any problems with audio quality. Listen to your HT's transmit audio before and after plugging in an accessory microphone.

A common problem especially on HF SSB is RF feedback—that is, radio-frequency energy being picked up by modulation circuits, causing severe distortion on transmit audio peaks. This can be due to poor grounds, ground loops, antenna too close to the ham shack, RF propagating down the shield of the coax back into the ham shack, etc. Amplified microphones are often part of the problem, and switching off the amplification sometimes is a cure. In some cases, 100 µH RF chokes in series with each signal and ground lead coming from the microphone may eliminate the problem. More often, though, an RF isolation choke (such as the Radio Works T4) at the antenna output of your transceiver is more effective. In some cases, a single-point ground should be used (all equipment grounds, tuner ground, and ground wire to your ground system all connected together). In other cases, the jacks on the RF isolation choke should not have a common ground and need to be isolated from each other. A current balun should be used at the antenna or at the transition between balanced line and coax.

RF feedback can occur on some bands and not on others, so check your signal on all bands. If you don't have a second receiver to use as a monitor (without antenna), while transmitting on your suspect primary transceiver, ask a local ham to listen for you on each HF ham band, and to give you a critical report.

OCRACES Celebrates at Holiday Dinner

County of Orange RACES members and their spouses or other family members, joined by staff of the Orange County Sheriff's Department, Communications & Technology Division, celebrated the season at the annual OCRACES Holiday Dinner at the Katella Grill in Orange on Monday, December 3, 2012.

OCSD Emergency Communications Manager Delia Kraft, KF6UYW, presented the Member of the Year Award to Kenan Reilly, KR6J, who attended with his wife Poay. Congratulations Kenan, and also to Officer of the Year Sgt. Chuck Dolan, KG6UJC, who was not able to attend. OCSD 800 MHz CCCS Next Generation Project Manager Marten Miller, KF6ZLQ, listed the many activities performed by OCRACES members throughout 2012. Division Director Robert Stoffel, KD6DAQ, thanked OCRACES members for their service. It was also good to see Assistant Director Joe Saddler, WA6PAZ, and his wife Rachelle, KB6JIE, at the Dinner.

800 MHz CCCS Next Generation Project Manager Marten Miller, KF6ZLQ, lists 2012 OCRACES activities.

In addition to Kenan, other members at the Dinner included: Sgt. Jack Barth, AB6VC, and his wife Carolyn; Randy Benicky, N6PRL, and his wife Lee Anne, KI6VUH; Capt. Ken Bourne, W6HK, and his wife Carol, N6YL; Jim Dorris, KC6RFC; Ray Grimes, N8RG, and his wife Carol, WB6VMH; Martin La Rocque, N6NTH, and his son; Marty Oh, KJ6RWE; Tom Tracey, KC6FIC; and Brian Turner, KI6WZS. Also attending the Holiday Dinner were OCRACES Applicants Sue Mickelson, KJ6LCJ, and Fran Needham, KJ6UJS, and his wife Sharon and daughter Mona.

OCSD ECM Delia Kraft, KF6UYW, presents Member of the Year Award to Kenan Reilly, KR6J.

Director Robert Stoffel, KD6DAQ, thanks OCRACES members.

Next OCRACES Meeting: January 7th

The next County of Orange RACES meeting will be on Monday, January 7, 2013, at 7:30 PM, at OCSD Communications & Technology Division, 840 N. Eckhoff Street, Suite 104, in Orange. Our guest speaker will be Cypress RACES Member Ed Kane, W6ONT, demonstrating his team's low-speed data capability via D-STAR to pass simplex traffic. They use "DSTARChatUSB" for keyboard-to-keyboard chat and exchanging e-mails using any e-mail client, even with attached files. Ed has found that any USB-to-serial adapter cable with an FTDI chip set works.

Heads up on Yaesu FT-60 Battery Pack

Thanks to Laguna Beach RACES Member Arlene Schwartz, KE6GFI, for forwarding the following information from John Powell, KF6EOJ, in an e-mail to the Downey Amateur Radio Club. This will be of interest to anyone with a Yaesu FT-60 or FT-60R HT. John advises to take a look at the factory-supplied battery pack inside. If the last cell has metal exposed, that actually completes the charger circuit if you use the stock "wall-wart" (via the chrome spring contact near the bottom of the HT). According to Blue Grass Batteries & Electronics, that battery pack has been discontinued by Yaesu, and replacement packs will *not* work with the Yaesu wall charger. John bought one from them and now he needs to use a base charger. They sold him one for $25 plus shipping, which he considers to be a fair price.

"So," says John, "if you replace your original pack, check the new one carefully. If there's no bare cell, then the original charger will not work. It's not a simple fix like cutting some plastic off, they said, probably because the original cells have a metal skin and the replacement cells may not.

GRE Temporarily Stops Scanner Production

GRE America Inc. has advised its dealers and customers that, due to circumstances beyond its control, General Research of Electronics of Japan (GRE) is temporarily not able to manufacture the GRECOM and Radio Shack branded radio scanners. "The Chinese government's plan to redevelop the area where the GRE factory has been in operation for over ten years finally forced its closure. Anticipating this eventuality, GRE was in the process of building a new factory but unfortunately the cost of raw materials, labor, and increased taxes created a heavy financial investment burden that could not be effectively recovered."

GRE America continues to market, support, and service the GRECOM branded scanners and is contractually committed to keep the Library Database updated and current. GRE America says it "will continue to market, service, and support Alinco's radio products without any interruption."

GRE America says, "GRE is proceeding to establish a contract with a new factory and believes it will be able to restart the manufacturing in the near future.

Newport Beach CERT Hosts Ham Radio Class

Matt Brisbois, Community Preparedness Coordinator, Newport Beach Fire Department, announced that the Newport Beach CERT program will be hosting a three-day ham radio class on Tuesday, February 5, 2013, from 6:30 PM to 9:00 PM, Thursday, February 7th, from 6:30 PM to 9:00 PM, and Saturday, February 9th, from 8:00 AM to 5:00 PM, at the Newport Beach Fire Station #7, 20401 Acacia, Newport Beach (near John Wayne Airport). The class will be taught by Gordon West, WB6NOA. This is the fifth CERT ham radio class that he has taught for Newport Beach CERT. Interested CERT volunteers can register for the class directly through Gordon at 714-549-5000. CERT volunteers, VIPS, other Citizen Corps volunteers, and government employees are welcome to attend. A materials fee of $99.00 includes a Gordon West textbook and five audio CDs for learning radio, a prestudy workbook, a PC computer Technician Class course with questions and answers, band charts for frequency privileges, a three-month ham magazine subscription, and beverages and Saturday lunch provided by Newport Beach CERT. Multiple-choice ham radio license exams will be conducted in class on Saturday, with a $15.00 FCC test fee. Included will be live equipment demonstrations, including emergency radio communications, radio demonstrations of radio Internet linking plus computer communications, training on how to operate through local repeater systems, and study questions reorganized for easier classroom learning.

ARRL Petitions FCC for 472-479 kHz MF Band

At the 2012 World Radiocommunication Conference (WRC-12), delegates approved Agenda Item 1.23: a 7-kilohertz-wide secondary allocation between 472-479 kHz for the Amateur Radio Service, with a power limit of 5 W EIRP (or 1 W EIRP, depending on location). Before this portion of spectrum is made available to radio amateurs in the US, the FCC must first approve its use and amend its rules to reflect the change. As such, the ARRL filed a Petition for Rulemaking on November 29, 2012, asking the FCC to amend Sections 2 and 97 of its rules and create a domestic Amateur Radio allocation at 472-479 kHz, conforming to the allocation status and limitations set forth in the international Radio Regulations.

"The subject of a low-frequency (LF) allocation and/or a medium-frequency (MF) allocation in the lower portion of that range for the Amateur Radio Service has a long history at the Commission," the ARRL pointed out in its Petition. "As yet, however, the Commission has not created either one." Presently, the lowest domestic frequency allocation for the Amateur Service—and the only MF allocation—is at 1800-2000 kHz.

The ARRL also pointed out that there is an Amateur Radio allocation in all other areas of the radio spectrum, providing for experimentation in virtually all types of radio frequency communications. "Technical self-training and furtherance of radiocommunications development in the Amateur Service (which is in essence an experimental radio service) would be greatly enhanced by an LF allocation and an allocation in the lower portion of the medium-frequency (MF) range," the ARRL maintained. "It is now timely, in response to actions taken at the 2012 World Radiocommunication Conference (WRC), to create a new, domestic MF allocation at 472-479 kHz for the Amateur Radio Service." The ARRL pointed out that while it is also desirable and timely to have an allocation in the LF portion of the spectrum, that matter was addressed in the Notice of Proposed Rulemaking and Order, just released in ET Docket 12-338 on November 20. (See the December 2012 issue of *NetControl*, page 4.)
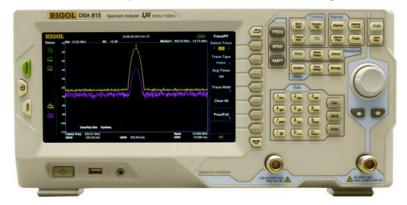
The ARRL, in its Petition, offered a proposed change to Section 97.305(c) to permit use of RTTY and data emissions in this new secondary allocation; as per the existing Section 97.305(a), radio amateurs would also be permitted to utilize CW emissions in the band. The Petition also proposes to permit General and Amateur Extra Class licensees access to the band. Technician class licensees would not be permitted to utilize the band.

Rigol Offers 9 kHz-1.5 GHz Spectrum Analyzer

There is nothing like a spectrum analyzer to check the quality of your signal! However, spectrum analyzers are very expensive—until now! Rigol Technologies has been advertising their DSA815 spectrum analyzer in *QST* magazine for $1,295.00.

The instrument's frequency range is 9 kHz to 1.5 GHz. Its displayed average noise level (DANL) is typically –135 dBm. Phase noise is –80 dBc/Hz at 10 kHz. Total amplitude uncertainty is less than 1.5 dB. Resolution bandwidth (RBW) is 100 Hz minimum.

The DSA815 features a widescreen display, compact design (14.2 inch width, 7.0 inch height, 5.0 inch depth), light weight (9.4 lbs), and easy-to-use interface and operations. It offers the ability to measure smaller signals using Rigol's digital IF filter, which allows for smaller bandwidth settings and reduces displayed noise levels. The instrument also distinguishes between signals with a frequency difference as little as 100 Hz.

The DSA815 includes a wide range of standard functions including AM/FM demodulation and a preamplifier. Options include an EMI filter and quasi-peak detector kit and a 1.5-GHz tracking generator (useful for testing RF band-pass filters, for example).

Interfaces include USB host and device, LAN, GPIB (optional), 10 MHz reference input, 10 MHz reference output, and external trigger input. Trigger source is free running, video, and external (5 V TTL level).

Rigol offers other spectrum analyzers covering up to 3 GHz, some with advanced measurement capabilities and including 1 GB of internal storage and noise levels down to a DANL of –148 dBm.

Watching the Web
Web Sites of Interest to RACES Personnel

Unified Microsystems
http://www.unifiedmicro.com

UM — **Unified Microsystems**
Products for Amateur Radio and Electronic Development

Unified Microsystems specializes in developing unique products for radio amateurs and modules for electronic engineers, students, and hobbyists.

The VK-64 is a voice keyer and CW memory keyer in the same package. You can operate the VK-64 manually with the front-panel controls, or under software control through your PC or laptop's printer port. The voice keyer has four 15-second messages. To record, press the record button followed by a message number button and start talking. Press the stop button when you are finished. Messages are stored in a non-volatile memory, remaining stored until recorded over with a new message. The CW portion is an iambic memory keyer with four programmable messages, each one capable of storing over 300 Morse characters. A front-panel knob adjusts speed from 8 to 45 WPM. Selectable keyer configurations include mode A or B keying, adjustable weighting, adjustable side-tone frequency, side tone on/off, right or left handed paddle, and tune function. The VK-64 also includes a built-in LPT CW interface. Most contest logging programs support sending CW through the printer port. Computer keying works in parallel with the internal CW keyer. Message 1 for both CW and voice modes can be set up for auto repeat. The delay time can be adjusted from approximately ½ to 12 seconds with a front-panel control. The VK-64 is compatible with the major contest logging programs, including N1MM Logger, NA, WriteLog, TRLog, CT, and LogEQF. To install the VK-64, unplug the microphone and plug the VK-64's transmitter audio/PTT cable into your radio. Plug the microphone into the VK-64's microphone input cable. The VK-64 automatically switches the microphone for recording and playback. The rest of the time your microphone audio and PTT signals pass through the VK-64 and connect directly to the transmitter, even when the VK-64 is powered off. CW setup is accomplished simply by plugging your paddle into the VK-64. CW out connects to the CW jack of your transceiver. Adding computer control only needs a standard 25-pin shielded computer cable between the computer and the VK-64.

The SCI-6 PC sound-card interface kit gets you on PSK31, RTTY, WSJT, Echolink, and other digital modes. Included are transformer isolation on both transmit and receive audio. Control the transceiver PTT with the built-in optically isolated interface circuit. The SCI-6 requires no external power source.

The XT-4 is a battery-operated CW keyer. Four memories let you store your Morse code and contest exchanges. Unified Microsystems says its small size is great for Field Day, DXpeditions, county-hunting mobile operations, VHF rover, and other portable operations.

The BCD-10 and BCD-14 band decoders/antenna selectors are designed for hams building their own custom automatic band-switching systems. It uses the band data output of the Elecraft K3, certain Yaesu transceivers, or PC logging programs to automatically select the proper antenna or band-pass filter when changing bands.

The HSD-9 high-side driver board is the easy way to adapt a BCD-10 or other low-side switching band decoder to a high-side antenna or filter switch.

The XT-4BEACON is a CW IDer for a VHF/UHF beacon or other project. Programming an ID message is accomplished simply by plugging in a keyer paddle. Its non-volatile memory allows messages up to 90 seconds at 25 WPM.

BullDog paddles are lightweight miniature iambic paddles. They are ideal for the XT-4 keyer.

The ATS-1 Terminal Shield adds a user interface to an Arduino project. It provides a 16×2 alphanumeric LCD display, six user navigation buttons, plus a programmable LED and buzzer. It uses two of the Arduino's digital I/O lines.

The VR-x series of power-supply voltage regulator kits include a PCB, heat sink and hardware, 78xx voltage regulator IC, and capacitors. The different kits supply an output voltage of 3.3, 5, 8, 9, 12, or 15 volts, with 2% regulation, and with an input voltage of the output voltage + 2 volts (minimum) to 25 volts (maximum). Current is 1 ampere maximum (500 mA for the 3.3-volt model). PCB size is 1 inch $\times$ 1.5 inches.

The LA-10 kit provides a circuit board and constant-current drive components for a project requiring an array of LEDs. The LEDs are not supplied.

RACES/MOU News from Around the County

Anaheim RACES

Anaheim RACES is sponsoring an amateur radio license exam session on Saturday, January 12, 2013, at 1:30 PM, at the North Net Fire Training Center, 2400 E. Orangewood Avenue, in Anaheim. Walk-ins are allowed. Contact Richard Lewis, AF6TM, at af6tm.testing@yahoo.com.

Hospital Disaster Support Communications System (HDSCS)

The annual California Statewide Medical Health Exercise took place on Thursday, November 15, 2012. HDSCS members communicated from 19 hospitals plus the Health Operations Center of Orange County Emergency Medical Services agency (OC-EMS). The drill scenario was a series of earthquakes causing physical damage and loss of electrical power around the county. The HDSCS emphasis was a realistic response using their established Core Team procedures. Members received their assignments just a few hours before the event. Instead of going into the hospitals and setting up prior to the drill start, they pre-staged nearby and went inside a few minutes after the simulated large earthquake took place. This taught the members what it is like to enter, get to Command Centers, and get on the air quickly with their portable equipment under stressful conditions. In the individual Hospital Command Centers, members were shoulder-to-shoulder with the Incident Commander, the Logistics Officer, and other staff members in Hospital Incident Command System positions. Some of the hospitals simulated damage that required movements of patients and staff and a change in location of the Hospital Command Center. Responding to the hospitals were Paul Broden, K6MHD, Allen Bullock, KD6LCL, Louie DeArman, K6SM, Richard Deen, KI6HWY, Tom Gaccione, WB2LRH, Bill Greganti, KG6EEK, Bill Hegardt, K6WIL, Roman Kamienski, KG6QMZ, Glen Lowe, KJ6YTN, Pete Martinez, K2PTM, Bob McCord, K6IWA, Justin Miller, KI6AFZ, Joe Moell, KØOV, Dale Murry, KJ6WFP,

Cindy Orrico, W6WGA, Dale Petes, KI6ANS, Dave Reinhard, KJ6REP, Ray Rittenhouse, KF6WZN, Gary Sanders, KC6TWZ, Ken Simpson, W6KOS, Clay Stearns, KE6TZR, Alex Valdez, K9BLK, Fred Wagner, KQ6Q, Dave West, KI6EPI, and Larry Woolf, KF6YCM. Net Controls and outside base station operators were April Moell, WA6OPS, and Cheryl Simpson, KD6MWZ. Jim McLaughlin, AB6UF, operated from the OC-EMS facility. Only two of the HDSCS participants are hospital employees. The rest are ham operators of many occupations who have attended HDSCS specialized training sessions and took time off to support this valuable mission by being dedicated medical communicators.

County of Orange RACES

Tom Riley, K6TPR, has passed background checks and is now a member of County of Orange RACES. Tom is a construction executive and senior principal consultant in real estate development and management. He is the principal consultant (EPC) on design, procurement, and construction at Gallic, Inc. Tom is now employed by First Solar headquartered in Tempe, Arizona, and assigned to their Topaz Solar Farm. Topaz is the largest solar project in the world today. First Solar (FSLR) is also the largest manufacturer of thin-film photo voltaic (PV) panels, which produce electricity from the sun with no moving parts. Over 8.2 million of these 4-ft $\times$ 2-ft panels will be installed at completion. These panels will produce slightly over 550 MW of power. The project has been sold to Warren Buffett's Mid America Power Group prior to starting construction. After learning the process for several months, Tom expects to become a director of International Operations in one or more countries.

Congratulations to Kenan Reilly, KR6J, and his wife Poay, on the birth of their healthy baby boy, Gavin, on Friday, December 21, 2012. Gavin was 8 lbs 9 oz at birth, and is ready to begin learning Morse code!

January 2013

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1 *Happy New Year*	2	3	4	5
6	7 *OCRACES Meeting* & *Weekly ACS Net*	8	9	10	11	12 *Winlink Committee Meeting*
13	14 *Weekly ACS Net*	15	16	17	18 *OCARC Meeting*	19 *VHF Contest*
20 *VHF Contest*	21 *Weekly ACS Net*	22	23	24	25	26
27	28 *City/ County Meeting* & *Weekly ACS Net*	29	30	31		

Upcoming Events:

- **Jan 1:** Happy New Year
- **Jan 7:** OCRACES Meeting, 1930, 840 N. Eckhoff Street, Suite 104, Orange. D-STAR presentation by Ed Kane, W6ONT
- **Jan 12:** Winlink Committee Meeting, 1000, 840 N. Eckhoff Street, Suite 104, Orange
- **Jan 18:** Orange County Amateur Radio Club Meeting, 1900, American Red Cross, 600 Parkcenter Drive, Santa Ana. Video on "Proper Grounding of Ham Station"
- **Jan 19-20:** ARRL VHF Contest
- **Jan 28:** City/County RACES & MOU Meeting, 1915, 840 N. Eckhoff Street, Suite 104, Orange

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

10 m: 29.640 MHz output, 29.540 MHz input, 107.2 Hz PL (off the air)
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: 147.480 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: 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)
23 cm: Off the air until reprogrammed to new coordinated frequencies

*Primary Net—Mondays, 1900 hours

RACES Program Manager
Delia Kraft, KF6UYW
714-704-7979

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

Radio Officers (Lieutenants)
Scott Byington, KC6MMF
Harvey Packard, KM6BV
Ralph Sbragia, W6CSP

Assistant Radio Officers (Sergeants)
Jack Barth, AB6VC
Chuck Dolan, KG6UJC
Jim Carter, WB6HAG
Ernest Fierheller, KG6LXT

County of Orange RACES

OCSD/Communications & Technology
840 N. Eckhoff St., Suite 104, Orange, CA 92868-1021
Telephone: 714-704-7979 ● Fax: 714-704-7902
E-mail: ocraces@comm.ocgov.com

County of Orange RACES

OCSD/Communications & Technology
840 N. Eckhoff St., Suite 104,
Orange, CA 92868-1021

Telephone – 714-704-7979
Fax – 714-704-7902
E-mail – ocraces@comm.ocgov.com

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

Questions or Comments?
Contact *NetControl* Editor Ken Bourne, W6HK
w6hk@ocraces.org

"W6ACS ...
Serving
Orange County"

Meet your County of Orange RACES Members!

Ken Bourne W6HK	**Scott Byington** KC6MMF	**Harvey Packard** KM6BV
Ralph Sbragia W6CSP	**Delia Kraft** KF6UYW	**Marten Miller** KF6ZLQ
Robert Stoffel KD6DAQ		

Jack Barth AB6VC	**Jim Carter** WB6HAG	**Chuck Dolan** KG6UJC
Ernest Fierheller KG6LXT	**John Bedford** KF6PRN	**Randy Benicky** N6PRL

Bill Borg KG6PEX	**Jim Dorris** KC6RFC	**Nancee Graff** N6ZRB
Ray Grimes N8RG	**Walter Kroy** KC6HAM	**Martin La Rocque** N6NTH
Brian Lettieri KI6VPF		

Marty Oh KJ6RWE	**Kenan Reilly** KR6J	**Tom Riley** K6TPR
John Roberts W6JOR	**Joe Selikov** KB6EID	**Tom Tracey** KC6FIC
Brian Turner KI6WZS		