

June 2011



Newsletter of the County of Orange Radio Amateur Civil Emergency Service

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Captain's Corner

by RACES Capt. Ken Bourne, W6HK, Chief Radio Officer

Elecraft KX3

OK, I admit it. I'm an Elecraft fanatic. I love the Elecraft K3 transceiver that we have in the EOC RACES Room. So please indulge me while I talk about the new KX3 that Elecraft introduced at the Dayton Hamvention on May 20, 2011.

Weighing only 1.5 pounds and drawing only 150 mA on receive, the KX3 all-mode 160-6 meter transceiver fits in the palm of your hand and is ideal for portable or mobile use. Its ultra-compact size is 3.4" H x 7.4" W x 1.7" D. Transmit power output is 10 W PEP (or 100 W with the external KXPA100 amplifier). It features a built-in speaker and an optional internal wide-range antenna tuner (ATU). Advanced DSP provides dual watch, noise reduction, noise blanking, autonotch, and stereo audio effects. Roofing filters in this software-defined radio (SDR) provide excellent dynamic range. It operates SSB, CW, AM, FM, and four data sub-modes (PSK31/RTTY) with or without a PC, and includes RX I/Q soundcard outputs.

The KX3 has rear tilt feet that fold out for use on a desktop or picnic table, for example. A mobile-mount bracket is also available. An eight-cell AA battery pack can be added with an NiMH charger. An adjustable KXPD3 keyer paddle with spacing adjustment can be attached for use with the 8-50 WPM internal keyer. With a whip antenna, the KX3 can even be operated hand-held.

The KXPA100 100-watt home/mobile external home/mobile amplifier integrates



Elecraft KX-3 all-mode 160-6 meter radio.

with the KX3 as well as with other 5-10 W transceivers. It has its own internal ATU option (KXAT100) with dual antenna jacks.

The 160-6 meter KX3 has a general-coverage 1.6-30 MHz receiver and an optional broadcast-band filter module that covers 0.5-1.6 MHz.

The KX3 design is based on a high-performance 32-bit floating-point DSP that is even more advanced than the chip in the K3. Its low-noise synthesizer has 1-Hz resolution. Firmware is updateable via provided application software.

In the receiver is a quadrature down-sampling mixer compatible with PC-based SDR applications. A narrow roofing filter option is available in four bandwidths (500 Hz, 1500 Hz, 2700 Hz, and 3800 Hz). The roofing filters automatically track DSP filter settings. Automatic and manual notch filtering is provided, plus adjustable noise reduction and noise blanking. Also included is an eight-band receive audio equalizer.

Availability is projected by the end of the year, at below \$800 for the basic unit.

**The Next
OCRACES
Meeting is**

**June 6, 2011
1930 Hours
Orange County EOC
Loma Ridge**

**ATV/SSTV Training
by RACES Sgt. Jim
Carter, WB6HAG**



Orange County Sheriff's Department
Communications & Technology Division

OCRACES Supports Golden Guardian at EOC

OCRACES provided communications during the Golden Guardian exercise at the Orange County EOC on Loma Ridge on Wednesday, May 18, 2011. Our primary role was to conduct roll calls on the OA-1 and OA-2 VHF low-band frequencies and give signal reports to the EOCs, plus handle some traffic regarding simulated flood conditions. Participating were RACES Sgt. Chuck Dolan, KG6UJC, and RACES Capt. Ken Bourne, W6HK.

RACES Sgt. Chuck Dolan, KG6UJC, calls roll on OA-1 and OA-2 from Centra-com Console in EOC RACES Room.



City/County/MOU Units Participate in Drill

Severe flooding was the scenario for the City/County RACES & MOU Drill on Saturday, May 21, 2011, following a plan issued by OCSD Emergency Communications Manager Marten Miller, KF6ZLQ. OCRACES members joining Marten at the Orange County EOC on Loma Ridge included Chief Radio Officer Ken Bourne, W6HK, Radio Officers Harvey Packard, KM6BV, and Ralph Sbragia, W6CSP, Assistant Radio Officers Jack Barth, AB6VC, Jim Carter, WB6HAG, Chuck Dolan, KG6UJC, and Ernest Fierheller, KG6LXT, Members Nancee Graff, N6ZRB, Brian Lettieri, KI6VPF, Kenan Reilly, KR6J, and John Roberts, W6JOR, and Applicants John Bedford, KF6PRN, Jim Dorris, KC6RFC, and Hannah Kilbourne, KJ6LDW. Also at the EOC RACES Room, operating at station 2, was HDSCS Member Joe Moell, KØOV.

Radio Officer Scott Byington, KC6MMF, spent the drill assisting cities with their Winlink systems, so they could communicate with each other and with Loma Ridge. He had Westminster RACES up and running quickly, but could not establish an Internet connection at City of Orange RACES (COAR), nor find an open port. COAR thinks the problem has been resolved, and Scott will check their system again soon. RACES Lt. Ralph Sbragia, W6CSP, ran the Winlink station at Loma Ridge and exchanged a fair amount of traffic.

RACES Sergeants Jim Carter, WB6HAG, and Jack Barth, AB6VC, resolved many issues regarding the ATV system at Loma Ridge, but an interference problem from the 431.100 MHz Winlink system still needs to be resolved. If this is a desensing problem, a Winlink frequency change might not be the answer.

Most of the City RACES units participated, as well as HDSCS and Red Cross-Orange County Chapter.



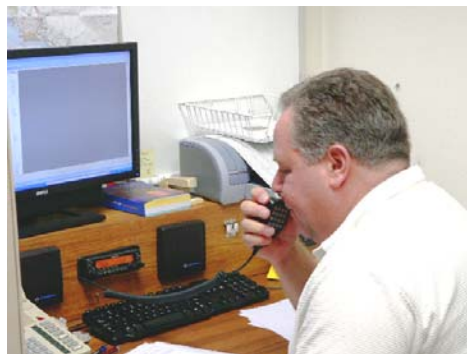
Hannah Kilbourne, KJ6LDW, and Marten Miller, KF6ZLQ, observe Nancee Graff, N6ZRB.



John Bedford, KF6PRN, observes Kenan Reilly, KR6J.



RACES Sgt. Chuck Dolan, KG6UJC.



Brian Lettieri, KI6VPF.



RACES Lt. Ralph Sbragia, W6CSP.

Next OCRACES Meeting: June 6th

The next County of Orange RACES meeting is on Monday, May 2, 2011, at 7:30 PM, at the Orange County EOC on Loma Ridge. RACES Sgt. Jim Carter, WB6HAG, will give us training on ATV and SSTV at this meeting, so we will be able to operate the equipment in the RACES Room while maintaining its proper configurations. Also at this meeting we will review the May 21st City/County RACES & MOU Drill and discuss our preparations for Field Day.

Field Day: June 25th-26th

Planning meetings are being held in preparation for Field Day on June 25-26, 2011, at Craig Regional Park in Fullerton. OCRACES will deploy its emergency communications response vehicle, and Field Day Chairman Ralph Sbragia, W6CSP, will bring his communications trailer. Besides practicing for field deployment during emergencies, using ICS procedures, we plan to have more of a contest operation this year, with efficient point-gathering HF stations. At our planning meetings we have been discussing how to make use of our Cushcraft A-3S three-element triband beam that was donated to OCRACES by Jim Carter, WB6HAG. Using this antenna should reduce the interference between our HF stations. So far, we have not found a solution to mounting this relatively heavy antenna at a reasonable height. We are looking for volunteers to assume the responsibility of station captains. City RACES units are invited to participate with us, and to bring their equipment, trailers, etc. We plan to have a Field Day potluck late Saturday afternoon, June 25th.

City/County RACES & MOU Meeting: June 27th

The next City/County RACES/ACS & MOU Meeting is on Monday, June 27, 2011, at 6:30 PM, at OCSD/Communications & Technology Division, 840 N. Eckhoff Street, Suite 104, in Orange. At this meeting we will review the May 21st City/County RACES & MOU drill. Each organization at this meeting will give a brief review of their current activities.

OCRACES at Orange County Fair: July 27th

OCRACES members will occupy the Ham Radio Booth at the Orange County Fair on Wednesday, July 27, 2011, from 1700 to 2300 hours. This is a great opportunity to show our emergency communications capabilities to the public and to introduce young people to the mysteries of radio propagation and other adventures in amateur radio.

Radio Amateurs Assist after Joplin Tornado

On Sunday, May 22, 2011, at 5:41 PM (CDT) an EF5-category (over 200 mph winds) tornado swept through the southwestern Missouri city of Joplin, directly hitting St. John's Regional Medical Center. The tornado killed at least 139 people, and 39 are still missing as of this writing. As soon as the storm cleared, area radio amateurs responded to requests from the American Red Cross and local hospitals to help provide communications support.

ARRL Missouri Section Emergency Coordinator Ken Baremore, WØKRB, and Greene County Emergency Coordinator William Gilmore, KCØTCF, arrived in Springfield at 9 PM and used a newly installed 2-meter beam to talk to the Joplin repeater, establishing communications between the two Red Cross offices. Cell phone coverage was mostly non-existent, and the circuit was overloaded most of the time, according to Baremore.

Amateur radio communications were provided between Freeman Hospital in Joplin and hospitals in Springfield, about 70 miles east of Joplin, as the tornado took down telephone lines and cell towers. Members of the Southwest Missouri Amateur Radio Club and Christian County Emergency Coordinator Pat Conway, WA6JGM, used mobile radios set up inside the doors of the hospital. John Howard, KØVET, activated the Missouri Emergency Services Net, and steered people to the proper Web site for health and welfare messages.

RACES and MOU Members Assist RTOC

Members of OCRACES, City RACES Units, and the Hospital Disaster Support Communications System (HDSCS) participated in Rebuilding Together Orange County (RTOC) on April 30, 2011. Net control was handled by OCRACES Capt. Ken Bourne, W6HK, from the vehicle of RTOC Project and Volunteer Coordinator Mary Bloom-Ramos, who drove from site to site. Providing communications at the 16 RTOC sites were OCRACES Members Brian Turner, KI6WZS, Sgt. Chuck Dolan, KG6UJC, Lt. Harvey Packard, KM6BV, and Martin La Rocque, N6NTH, OCRACES Applicants Hannah Kilbourne, KJ6LDW, Jason Masterman, KJ6MOH, and Ed Gonzales, KJ6BGS, Laguna Niguel ACS Officers Ray Nienburg, KJ6AOX, and Mikkel Hansen, NR6E, HDSCS Members Richard Deen, KI6HWY, and Tom Smith, KB6A, Costa Mesa RACES (MESAC) Member Dennis Litton, KI6WJZ, Huntington Beach RACES Training Officer Jim Hansen, KG6ZDP, City of Orange RACES (COAR) Members David Friese, KG6RWU, and Alfredo Alba, K6EGA, Newport Beach CERT Member Tom Riley, K6TPR (ex-KJ6FGY), Newport Beach RACES Member Bill Wilkerson, N6BXD, Santa Ana ACS (SART) Member Kathleen Nelson, K6IBH, and Westminster RACES Members Anthony Tran, KI6SYT, and Chu Nguyen, KE6YSS.



OCRACES Sgt. Chuck Dolan, KG6UJC (left) at RTOC Anaheim-3 site.



OCRACES Lt. Harvey Packard, KM6BV, with Team Leader Karen at Anaheim-4 site.



Newport Beach CERT Member Tom Riley, K6TPR (ex-KJ6FGY) (left), relieves Newport Beach RACES Member Bill Wilkerson, N6BXD, at Westminster-1 site.



OCRACES Applicant Hannah Kilbourne, KJ6LDW (second from right) pitches in with RTOC crew members at Anaheim-2 site.

Watching the Web

Web Sites of Interest to RACES Personnel

Antennas, Radios, Amplifiers, Baluns, and Receiving Systems for HF

<http://www.w8ji.com>

W8JI.com

W8JI.com is a wealth of information on various topics. Just a few of the sections of this Web site include:

- ◆ **160 Meter History:** Links to a great collection of W1BB newsletters—an archive of the history of 160 meters.
- ◆ **NDB and Fish Net Beacons**
- ◆ **Amplifiers:** AL811H amplifier myths, changes, and information; AL811 reliability mods; AL811H airflow measurements; arc protection AL572; band-switch failures; cathode and grid bias; CB amplifiers converted to ham; Clipperton; HF RF SSB CW amplifier dynamic electronic bias; fault protection; FL2100 modifications and repairs; grid resonance; HF stability; load and tuning; metering; neutralizing; relay sequencing; relay amplifier buffer; relay contact burnishing; RM HLA-150 test; SB-221; shortwave broadcast amplifier; tank circuit; tank voltage; tuned input circuit; vacuum tubes; VHF stability; 572B problems and preconditioning; 8877 failures; SW BC amplifier; RF plate choke; ten biggest amplifier mistakes; and power-supply inrush protection.
- ◆ **Antennas:** balun and transformer core selection; baluns on log-periodic antennas; 1:1 current balun; 4:1 balun design and operation; combiner and splitters; common-mode current; crossfire phasing; curtain antennas; detuning towers; E-H antenna; end-fed vertical and J-pole; Rohn 65G project; G5RV; Gotham vertical; ground plane verticals; end-fed antennas; inductors and loading coil current (mobile and coil loaded antennas); lifting Rohn 45G and 25G tower; loading inductors; mobile antenna FS comparisons; NVIS; omega and gamma matching; phasing systems; cubical quad; radiation resistance; long wires; low-noise receiving antennas; rhombic, V-beam, and inverted V; rotating tower; short dipoles and problems; sleeve baluns; toroid balun winding; transmitting baluns; 75-ohm to 50-ohm transformers; transmission-line operation; traps; tuner baluns on input; VSWR reactive power; 5/8-wave mobile antenna vs 1/4 wave; windom off center fed; end-fed 1/2-wave matching system end feed; screw-in guy anchors, guy lines; antenna tuners; and horizontal loop loading methods.
- ◆ **Balun Test**
- ◆ **Steel-Wool Balun**
- ◆ **Boat Anchors**
- ◆ **Building a Current Meter**
- ◆ **Capture Area or Effective Aperture**
- ◆ **Checking Bandwidth with Receiver**
- ◆ **Coaxial Cable Leakage**
- ◆ **Coaxial Line, Shielded Ground, and Shielded Wires**
- ◆ **Unwanted Antenna Coupling**
- ◆ **Diversity Receiver and Transmission**
- ◆ **DX Sound Files**
- ◆ **Mixing Wide and Narrow Modes**
- ◆ **Radio Noise**
- ◆ **Radiation and Fields**
- ◆ **What Radio or Rig Do I Need**
- ◆ **Receivers:** tests (setup and measuring BDS, BDR, and IMDR) and myths (PIN-diode mods, Drake R4C, roofing filters)
- ◆ **RF Relay Contact Rating**
- ◆ **Skin Depth and Conductors**
- ◆ **Stacking Broadside Collinear**
- ◆ **Transmitter Bandwidth and Splatter**
- ◆ **Verticals and Common-Mode Current Isolation**
- ◆ **D-104 to Low Impedance**

RACES/ACS News from Around the County

County of Orange RACES

Congratulations to Rich Grimes, W6RYS, who recently graduated from Yavapai County (Arizona) Sheriff's Academy. OCRACES Member and OCSD Re-



serve Captain Ray Grimes, N8RG, was proud to pin the badge on his son Rich at the graduation ceremony. Shown in the photo are Ray (left) and Rich enjoying

genuine "cop food." Several months ago Rich graduated from Embry-Riddle Aeronautical University in Prescott, and was commissioned a U.S. Army Reserve 2nd Lieutenant.

City of Orange RACES (COAR)

Below is a photo of Robbie Robinson, KB6CJZ, testing City of Orange Amateur Radio (COAR) RACES' new DATV 1.2-GHz "elephant gun" field antenna before the May 21st City/County RACES & MOU drill at the QTH of Ken Konecky, W6HHC. The testing was successful. SWR at 1.292 GHz was about 1.5:1. The loop-yagi antenna (from Directive Systems) has somewhere between 23 and 25 elements. Can you count the exact number of elements?

Many photos of the Orange Police Department Baker to Vegas runners and COAR RACES operators are now up on the Orange County Amateur Radio Club Web site with photo descriptions. More than 25 hams participated to support the OPD running team. The URL is <http://www.w6ze.org>. Click on the PHOTO GALLERY link that is on the left side of the



"RACES/ACS 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

June 2011

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6 <i>OCRACES Meeting & Weekly ACS Net</i>	7	8	9	10	11 <i>EmComm Breakfast</i>
12	13 <i>Weekly ACS Net</i>	14	15	16	17	18
19	20 <i>Weekly ACS Net</i>	21	22	23	24	25 <i>Field Day</i>
26 <i>Field Day</i>	27 <i>Weekly ACS Net & City/County Meeting</i>	28	29	30		

Upcoming Events:

- **Jun 6:** OCRACES Meeting, 1930, OC EOC, Loma Ridge
- **Jun 11:** EmComm Breakfast and Field Day Planning Meeting, 0800, Katella Grill, 1325 W. Katella Ave., Orange
- **Jun 25-26:** Field Day, Craig Regional Park, Fullerton
- **Jun 27:** City/County RACES & MOU Meeting, 840 N. Eckhoff St., Suite 104, Orange
- **Jul 27:** OCRACES at Orange County Fair Ham Radio Booth, 1700-2300
- **Sep 9-11:** HAMCON 2011, Marriott Torrance South Bay
- **Oct 1:** City/County RACES/ ACS & MOU Drill



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 (disabled)
 - 6 m: 52.620 MHz output, 52.120 MHz input, 103.5 Hz PL (disabled)
 - 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: 1282.025 MHz output, 1270.025 MHz input, 88.5 Hz PL
- *Primary Net—Mondays, 1900 hours

Program Coordinator

Marten Miller, KF6ZLQ
(714) 704-7917

Radio Officers (Lieutenants)

Scott Byington, KC6MMF
Harvey Packard, KM6BV
Ralph Sbragia, W6CSP

Chief Radio Officer (Captain)

Ken Bourne, W6HK
(714) 997-0073

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

Telephone – (714) 704-7917
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) 704-7917
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



Marten Miller
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Robert Stoffel
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AB6VC



Jim Carter
WB6HAG



Chuck Dolan
KG6UJC



Ernest Fierheller
KG6LXT



Randy Benicky
N6PRL



Bill Borg
KG6PEX



Nancee Graff
N6ZRB



Ray Grimes
N8RG



Walter Kroy
KC6HAM



Martin La Rocque
N6NTH



Brian Lettieri
KI6VPF



Kenan Reilly
KR6J



John Roberts
W6JOR



Joe Selikov
KB6EID



Tom Tracey
KC6FIC



Brian Turner
KI6WZS