

January 2014



Newsletter of the County of Orange Radio Amateur Civil Emergency Service

**Inside this issue:**

Captain's Corner	1
Holiday Dinner	2
OCRACES Meeting	3
City/County Meeting	3
Cooperative T-Hunt	3
Two New Sergeants	4
Heathkit Resurfaces	5
Tokyo Hi-Power	5
AuxComm Guide	5
RACES/MOU News	6

## Captain's Corner

by RACES Captain Ken Bourne, W6HK, Chief Radio Officer

### Experimenting with NVIS

The OCRACES VHF and UHF repeater systems cover most of Orange County extremely well. However, there are some areas deep in the canyons of the Santa Ana Mountains and below the bluffs in some beach areas where repeater signals cannot be copied.

Some OCRACES and City RACES members have been experimenting with NVIS (Near Vertical Incident Skywave) propagation on 75 meters and 40 meters to reach those areas not covered by our VHF and UHF repeaters. NVIS would also be effective on 160 meters, although the larger antenna requirements are a challenge for mobile and portable operation, and on 60 meters. We have found that 40 meters is most effective during the day and 75 meters at night. Conditions depend on the *critical frequency*, which is the highest frequency that the F layer of the ionosphere will reflect at 90 degrees. NVIS propagation is below the critical frequency. The D layer, which is below the F layer, is heavily ionized during the day, and absorbs 40-meter and lower frequency signals especially at lower propagation angles. Ions are less dense at 90 degrees, and signals will pass through the D layer to the F layer, where they are reflected almost straight down.

For NVIS propagation to be effective, it is desirable to minimize groundwave propagation, by carefully orienting the antennas or selecting a desirable location for portable operation. A groundwave signal might arrive out of phase with the skywave

signal, causing signal cancellation. The signals might drift into phase, and then out of phase, resulting in signal fading ("QSB") or multipath distortion.

Our NVIS experiments require using antennas with a very high angle of radiation (approaching 90 degrees or straight up). This would disqualify vertical antennas. Half-wave dipole antennas are much too large for mobile operation, and can be impractical for portable operation if no trees or other supports are available. Smaller horizontal antennas for portable operation are available, however, such as the Buddipole and MFJ BigEar (MFJ-2289). Two coil-loaded HF mobile whips can also be connected into a center bracket to form a dipole. One configuration would be the MFJ-2275 (75 meters) or MFJ-2240 (40 meters) rotatable dipole, using two "HamTenna" whips (about 14 feet fully extended) or two "Short" HF mobile whips (about 6 feet total) into an MFJ-347 "HF Stick" mini-dipole mount that mounts on a mast up to 1¼ inches OD with an optional balun to isolate the feedline.



MFJ-2240 miniature dipole and coax balun.

**The Next  
OCRACES  
Meeting Is**

January 6, 2014  
1930 Hours

840 N. Eckhoff Street,  
Suite 104, Orange

Enhanced Training  
and Plans for 2014



Orange County Sheriff's Department  
Communications & Technology Division

# OCRACES Members Celebrate Holiday Dinner

OCRACES celebrated its annual Holiday Dinner at the Katella Grill in Orange on Monday, December 2, 2013. OCSD Emergency Communications Manager Delia Kraft presented several awards, including “Member of the Year” to Fran Needham, KJ6UJS (see photo at right) and “Officer of the Year” to Lt. Ralph Sbragia, W6CSP. Ralph was not at the Dinner but picked up his award the next day at Eckhoff (see second photo at right).

Others attending the Holiday Dinner included (see photos below, in order) Capt. Ken Bourne, W6HK, and his wife Carol, N6YL, OCSD Communications & Technology Division Assistant Director Joe Saddler, WA6PAZ, and his wife Rachelle, KB6JIE, Ray Grimes, N8RG, and his wife Carol, WB6VMH, Randy Benicky, N6PRL, and his wife Lee Anne, KI6VUH, Division Director Robert Stoffel, KD6DAQ, Lt. Harvey Packard, KM6BV, Tom Tracey, KC6FIC, Bob McFadden, KK6CUS, Applicant Michael Butler, W0MTB, John Bedford, KF6PRN, Sue Mickelson, KJ6LCJ, Martin La Rocque, N6PRL (right) and his son Rod, KK6DBP, Ken Tucker, WF6F, and his wife Vickii, and Fran Needham, KJ6UJS, and his wife Sharon (left) and Mona.

At the Dinner, Delia and Robert graciously thanked the OCRACES members for their work throughout the year. Delia listed the many events in which the members participated. The members also thanked Delia for bringing her enthusiasm and professional leadership to the RACES program, and thanked Robert for his and the Division’s exceptional support of OCRACES. We also thanked Joe, who is in charge of the Division’s engineering department, for his great technical support of the RACES program. It is he and his engineers and technicians who keep our repeaters in operation and assist us when we have issues with our Winlink and other systems. OCRACES members are proud to serve OCSD’s Communications & Technology Division.



## Next OCRACES Meeting: January 6th

The next OCRACES meeting is on Monday, January 6, 2014, at 7:30 PM, at 840 N. Eckhoff Street, Suite 104, in Orange. At this meeting we will review our plans for 2014, including a greatly enhanced training schedule, certifications, and the use of newly developed forms to be used during activations.

## City/County RACES & MOU Meeting: Jan. 27th

The next City/County RACES & MOU Meeting is on Monday, January 27, 2014, at 7:15 PM, at 840 N. Eckhoff Street, Suite 104, in Orange. At this meeting, OCRACES will reveal its 2014 training program, which some City RACES units may wish to incorporate into their plans. We will also discuss plans for the next City/County RACES & MOU drill, which will occur on May 5, 2014. City RACES and MOU representatives are invited to present brief presentations on their latest activities.

## MESAC and OCRACES Members Find the Fox!

A vehicle full of MESAC (Costa Mesa RACES) members was the first to find the fox on the OCRACES Cooperative T-hunt Monday night, December 9, 2013. The fox was Ron Allerdice, WA6CYY, and the MESAC crew consisted of Ted Bohrer, N7QY, Tom Pastore, N6HAM, Gordon West, WB6NOA, Patrick Williams, KJ6PFW, and Dennis Litton, KI6WJZ. The MESAC team, using a Doppler direction-finding system, quickly determined, as they were driving on Placentia Avenue in western Costa Mesa, that the fox was hidden to the west of Estancia High School. Ken Bourne, W6HK, and his son Don, KB6TVK, using a portable three-element yagi and a loop antenna, started from the Ikea parking lot on the north end of Costa Mesa, and drove southwest to the Fairview Park area, based on initial bearings and information supplied by the MESAC team over the 449.100 MHz OCRACES repeater. Bob McFadden, KK6CUS, started from the eastern edge of Costa Mesa, using a three-element portable yagi and loop, and proceeded toward Fairview Park, based on MESAC's bearings. Sue Mickelson, KJ6LCJ, hunted for the first time, and was quite successful with her new loop antenna, arriving quickly at the fox's location on the edge of Fairview Park, near the Santa Ana River.

After everyone found the fox, the hunters and the fox headed to Avila's El Ranchito restaurant and had a great time visiting with each other and sharing direction-finding techniques.

These cooperative T-hunts provide excellent practice in working together to quickly locate interference, whether accidental or malicious. Comparing bearings and confining the hunts to a specific area, such as within a city's limits or a quadrant of the county, make the hunts relatively short, which is important for those who need to get up early the next morning for work. Confining the hunts to a particular city encourages members of that city's RACES unit to participate, as was the case with this hunt. Nevertheless, we encourage county and city RACES members from all over the county to participate, no matter which city the fox has announced he will hide in.

The next cooperative T-hunt will be on Monday, January 13, 2014, immediately following the OCRACES 2-meter net (about 7:20 PM). The fox will be Jim Dorris, KC6RFC (unless he arranges for a substitute fox). He will announce which city or county quadrant he will be hiding in, prior to the hunt. Jim recently built a fox box based on an Arduino microcontroller, and will be transmitting tones on the input (146.295 MHz) of the OCRACES 2-meter repeater. His fox box includes a PL to key up the repeater, so hunters will know he is transmitting, even if they are out of range of his direct signal on the repeater input. Hunters using smartphones are encouraged to use the "Foxhunt" iPhone app or the "Triangulate" Android app, and to beacon their locations via APRS.



MESAC members in vehicle at right were the first to find the fox, Ron Allerdice, WA6CYY, in vehicle at left.

## Two Sergeants Appointed to OCRACES Staff

Congratulations to Tom Tracey, KC6FIC, who has been appointed OCRACES Training Sergeant. Tom has been working with OCSO Emergency Communications Manager Delia Kraft, KF6UYW, on developing an enhanced training program for OCRACES, to be instituted during 2014. Tom has a strong background in public-safety communications, and served as a dispatcher for Care Ambulance. He is well qualified in NIMS and ICS procedures. Details of the new training program will be covered at the next OCRACES meeting on January 6, 2014.

Congratulations also to Bob McFadden, KK6CUS, who has been appointed Sergeant in the OCRACES South Squad. Bob is a relatively new member in OCRACES, and has already provided his strong technical and leadership skills to our RACES unit. He has solved several issues in our Winlink system, is improving the configuration of our EOC RACES Room, is enhancing our D-STAR system (including 1.2 GHz operations), participates in our monthly cooperative T-hunts (including being the fox in our first hunt), shares his knowledge of amateur-radio smartphone apps, and much more. His enthusiasm for discovering and teaching computer and RF technology is a great asset to OCRACES, and is an inspiration to our members.

## Is Heathkit Resurfacing?

On December 18, 2013, “The Heathkit Management Team” e-mailed those who had responded several months ago to a survey on an obscure page on the <http://www.heathkit.com> Web site, indicating that the bankrupt and shuttered Heath Company had new owners looking for ideas on new products to offer. The e-mail said, “The response to our survey has been formidable. There’s no question that many people—many thousands of people—want Heathkit to succeed and flourish. We thank you for your good will and interest.”

The e-mail also mentioned that Facebook users could stay up-to-date by joining Heathkit’s Facebook page and “Like” the company at <http://www.facebook.com/heathcompany>.

On Friday, December 20th, Heath conducted a special “Ask Me Anything” event on Reddit.com, where a member of Heathkit’s Board of Directors was available for three hours to chat live and answer questions about the company’s progress and plans. Nearly 50 questions were fielded. You can read these questions and answers at [http://www.reddit.com/r/tabled/comments/1tdf45/table\\_iama\\_member\\_of\\_the\\_heath\\_company\\_heathkit/](http://www.reddit.com/r/tabled/comments/1tdf45/table_iama_member_of_the_heath_company_heathkit/). Here are just a very few of the comments made by the Heath board member:

- ◆ “We’re working on several [ham radio] projects simultaneously.”
- ◆ “Historically Heathkit has had about seven or eight major product lines. None of them is off the table in the new Heathkit. In fact, most have at least one product currently in some degree of planning or design now. Examples of these areas are: hobby electronics and ham radio; home entertainment and appliances; security/automation; computing; educational publications and materials; robotics; test equipment.”
- ◆ “There are some major ways that SDR (software-defined radio) is done today, and frankly we think both of them are wrong—there’s a lot of room for doing digital right. Similarly, we see before us some spectacular opportunity in microwave, we just have to be sure there are enough people interested in building those kits.”
- ◆ “Test equipment is definitely on our radar. The real challenge is that we need to know which test equipment you want most—this is one area where we both welcome and need feedback from our customers.”
- ◆ “We recognize that if we introduce SMT (surface mount technology) kits, we’re going to have to help people with the new technology. We’re happy to be the company that solves this problem. There’s a huge pent-up demand of people looking to learn SMT.”

## Tokyo Hy-Power Files for Bankruptcy

ARRL reports that Tokyo Hy-Power, a manufacturer of amateur radio amplifiers, antenna tuners, and other equipment, is in bankruptcy, and its plant, in Saitama Prefecture near Tokyo, has been shuttered. Company CEO/President Nobuki Wakabayashi, JA1DJW, blamed “the recent depression in the industrial RF power products area [which] has led to the very difficult financial position.” Among its latest products were solid-state HF amplifiers, as well as amplifiers for 6 and 2 meters.

# DHS Releases AuxComm Field Ops Guide

The US Department of Homeland Security, Office of Emergency Communications, has released their new 144-page *Auxiliary Communications Field Operations Guide (AUXFOG)*. It is a reference for auxiliary communicators who directly support backup emergency communications for state/local public-safety entities or for an amateur radio organization supporting public safety. *AUXFOG* is a collection of technical reference and training information to aid trained volunteer auxiliary communications (AuxComm) personnel, and the agencies they serve, to supplement local emergency communications when AuxComm support is requested.

*AUXFOG* says that AuxComm covers a broad range of systems that could potentially be used during an incident to include: High Frequency (HF), Very High Frequency (VHF), Ultra High Frequency (UHF), satellite communications (SATCOM), microwave, Wi-Fi, digital, video, photos, Voice over Internet Protocol (VoIP), and other modes.

The purpose of *AUXFOG* is to increase efficiency in establishing communications during incidents, create a consistent knowledge base of communications channels and networks, and provide a helpful tool for preplanning and communications training and exercises. This reference guide contains information about AuxComm best practices, frequently used radio frequencies, mutual-aid channels, as well as tips and suggestions about auxiliary emergency communicators integrating into a NIMS/ICS environment to support communications for planned events or incidents. It can serve as a reference both for auxiliary emergency communicators and public-safety communications professionals. You can download *AUXFOG* by going to <http://www.publicsafetytools.info> and save it to your own storage device. It will only download as a PDF. **Every RACES member should have a copy of *AUXFOG*.**

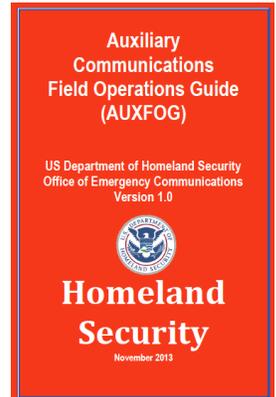
Printed copies are not available from DHS, but you may download an electronic copy to print as many hard copies as desired. To make *AUXFOG* easier to access, David Coursey, N5FDL, trimmed the pages of the PDF file so that it displays properly on a smartphone, or at least, as he says, on his iPhone. That version may be downloaded from <http://www.n5fdl.com/davids-blog/category/auxcom>.

Browsing through the Table of Contents, we see that *AUXFOG* includes:

1. Safety (Family, Personal, Situational Awareness, Local Hazards, Power, RF, and Equipment Safety)
2. Auxiliary Communications (Radio Service Rules and Regulations)
3. Deployment, Mobilization, and Demobilization (Definitions, Activation Etiquette, Pre-deployment, Go Kit, Mobilization, Deployment, and Demobilization)

A wealth of information is found in each Appendix:

- A. Auxiliary Communications (AuxComm) Point of Contact (POC) Information (AuxComm Contact List, Communications Unit Contact List, Local EMA Contact List, and State EMA Contact List)
- B. Telephone Network Communications (Priority Services including Government Emergency Telecommunications Service and Wireless Priority Service, Text Messaging, NOAA Weather Radio “All Hazards” Broadcasts, and Standard Time and Frequency Broadcasts)
- C. US Amateur Radio Band Plan (Band Recommendations Based on Time of Day, Amateur Radio VHF/UHF/HF Frequencies plus GMRS, MURS, FRS, Industrial/Business, etc., and Other Reference Frequencies, including VHF Low Band, VHF High Band, UHF Band, 700 MHz Band—Digital, 800 MHz Band, NOAA All-Hazards Alert Radio—Event Codes, Aviation Frequencies, Multi-Use Radio Service, CB Frequencies, Common Business Frequency Table, Railroad Frequencies, Search and Rescue Frequencies, and Emergency Support Functions)
- D. Field Expedient Antennas (VHF/UHF Ground Plane, VHF Coaxial Sleeve, HF Dipole) and Emergency Center of Activity Frequencies for Amateur Radio
- E. Connectors (RJ-45 Wiring, RS-232 Connectors including DB9 and DB25, and RF Connectors)
- F. Cable Properties
- G. Coded Squelch Systems (CTCSS, Digital Coded Squelch, and Network Access Codes)
- H. GMRS/FRS (Licensing and Channels)
- I. Incident Command System (Basic ICS Organization, including Organizational Chart, Logistics Section Communications Unit, Communications Unit Organizational Structure, and ICS Position Titles; Communications Unit Position Descriptions, including Auxiliary Communications, Communications Unit Leader, Incident Communications Center Manager, Radio Operator, Incident Communications Technician, and Technical Specialist; External Support to the Communications Unit and Communications Coordinator; ICS Roles and Responsibilities; and ICS Forms, including 205, 205A, 213, 214, and 217A)
- J. Standard Phonetic Alphabet and its Equivalents
- K. URL/Web Site Listing



# RACES/MOU News from Around the County

## Seal Beach RACES

### **Gary Maiten, WB6IJN, Silent Key**

We are very sad to report that former Seal Beach Police Captain and City RACES Program Coordinator Gary Maiten, WB6IJN, died on November 29, 2013.

Gary was born on July 18, 1943, in Brooklyn, New York. He relocated to Torrance, California, with his family in 1963. In 1967 he became a police officer in Seal Beach. He was drafted into the United States Army in 1968 and served as an MP in Washington, DC. He then served a year in South Korea as a Criminal Investigation Division agent. After he was discharged from the Army in 1970, he returned to the Seal Beach Police Department. He was promoted to Sergeant in 1974, Lieutenant in 1977, and Captain in 1988. He retired on July 4, 2000, and the next day became a consultant for the Garden Grove Police Department. On July 1, 2013, Gary ended his contract with the City of Garden Grove due to health reasons.

## Hospital Disaster Support Communications System (HDSCS)

At 8:30 PM on Monday, November 18, 2013, HDSCS was notified by Orange County Emergency Medical Service Agency of a telephone failure at Anaheim Regional Hospital. No incoming calls were being received and there was concern about other aspects of the system. Paul Broden, K6MHD, who was monitoring the main HDSCS repeater, was prepared with his go-kit and immediately set out for the hospital. Besides serving as the outside base contact for the hospital, April Moell, WA6OPS, telephoned the Control One Supervisor at the county EOC and gave her number for contact in the event that the hospital needed to be reached by families, physicians, ambulance companies, and other agencies during the outage. K6MHD remained on the air at the hospital until 11:45 PM, when repairs

were complete and the phone system was stable. If the outage had lasted further into the night or if the internal phones had also failed, a "jump team" of additional HDSCS



**Paul Broden, K6MHD.**

members was standing by and monitoring the on-air activities. In that team were Dave Conklin, KI6LYZ, Justin Miller, KI6AFZ, and Dave Popko, AF6TN.

## County of Orange RACES

Congratulations to OCSD Emergency Communications Manager Delia Kraft, KF6UYW, on passing the General Class amateur radio examination. We appreciate her enthusiasm for amateur radio and the great support she gives to the Department's RACES program.



**OCSD ECM Delia Kraft, KF6UYW.**

**"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**

# January 2014

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 <i>Happy New Year</i>	2	3	4
5	6 <i>OCRACES Meeting &amp; Weekly ACS Net</i>	7	8	9	10	11
12	13 <i>Weekly ACS Net &amp; Cooperative T-hunt</i>	14	15	16	17	18
19	20 <i>Weekly ACS Net</i>	21	22	23	24	25
26	27 <i>Weekly ACS Net &amp; City/County/ MOU Meeting</i>	28	29	30	31	

**Upcoming Events:**

- **Jan 1:** New Year's Day
- **Jan 6:** OCRACES Meeting, 1930, 840 N. Eckhoff Street, Suite 104, Orange
- **Jan 13:** OCRACES Cooperative T-hunt, 1920, input of 2-m repeater (146.295 MHz), bearings compared on 449.100 MHz repeater
- **Jan 27:** City/County RACES & MOU Meeting, 1915, 840 N. Eckhoff Street, Suite 104, Orange



[www.ocraces.org](http://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

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: 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 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  
 Jim Dorris, KC6RFC  
 Ernest Fierheller, KG6LXT  
 Bob McFadden, KK6CUS  
 Tom Tracey, KC6FIC

### 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](mailto: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](mailto: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 Dorris  
KC6RFC



Ernest Fierheller  
KG6LXT



Bob McFadden  
KK6CUS



Tom Tracey  
KC6FIC



John Bedford  
KF6PRN



Randy Benicky  
N6PRL



Bill Borg  
KG6PEX



Chuck Dolan  
KG6UJC



Nancee Graff  
N6ZRB



Ray Grimes  
N8RG



Walter Kroy  
KC6HAM



Martin La Rocque  
N6NTH



Brian Lettieri  
K16VPF



Sue Mickelson  
KJ6LCJ



Fran Needham  
KJ6UJS



Tom Riley  
K6TPR



John Roberts  
W6JOR



Joe Selikov  
KB6EID



Ken Tucker  
WF6F



Brian Turner  
K16WZS