August 2012

County of Orange RACES
NetControl

Newsletter of the County of Orange Radio Amateur Civil Emergency Service

The Next OCRACES Meeting is

August 6, 2012
1930 Hours

Orange County EOC Loma Ridge

Severe Fire Weather Patrol Training

Orange County Sheriff's Department Communications & Technology Division

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

Cooperative DFing

Thanks to Joe Moell, KØOV, for his very interesting presentation on direction finding at the July 2, 2012, OCRACES meeting. He explained the pros and cons of various types of DF equipment, which we need to keep in mind if we intend to become prepared to locate the source of interference to our repeaters or to public-safety frequencies. We plan to practice together on locating simulated interference on reestablished OCRACES T-hunts, where all hunters will compare bearings (on a separate coordination frequency), using a GPS receiver to determine exactly from where the bearings are taken, and a compass to indicate the actual bearing. The bearings from all hunters may then be loaded into a central computer for triangulation, or into each hunter's smartphone, tablet, or laptop. Apps are available for this purpose, for both Android and Apple operating systems. In addition to T-hunting or locating interference, these apps may also be used by participants in severe fire weather patrols, to report bearings from exact locations to spotted fires or smoke plumes.

An Android app for finding the coordinates of a remote point, using GPS plus compass plus camera, is called "XYZworks Triangulate." The following information is taken from the XYZworks Web site. Triangulate is useful for reporting or locating wildfires, and is intended for landowners, firefighters, land surveyors, boaters, pilots, and anyone wanting to know the coordinates of a remote point without going

there—hikers, geocachers, scientific researchers, rangers, search and rescue, amateur radio T-hunters, and locators of radio-tagged animals. No cell-phone coverage is needed. No data plan is needed, unless you choose to e-mail the information to someone.

"Triangulate" uses the smartphone's or tablet's built-in GPS with an augmented reality compass on a camera view to get two points and bearings from each. It then computes the bearing intersection using spherical math. The three points and lines connecting them can then be displayed with your choice of mapping program (using KML files), online or offline, for both mobile and desktop computers. This makes it easy to determine which road is best to get to the computed remote point. A sample map may be seen at https://maps.google.com/maps/ms?ie=UTF&msa=0&msid=208093473308607160239.0004b82ddcc76689ba82a.

Phone reception or Internet access is not required to use the app. GPS coordinates and compass bearing for the second point can be sent on our coordination frequency. If another hunter has the "Triangulate" app, they can easily hit one button to collect and one button to e-mail their location and bearing, or they can radio the information to any of the hunters. One point and bearing is enough information to report a wildfire to Net Control (who would be in contact with Control One or OCFA), but if you get another bearing from over 1000 feet away, it's even better, since the app can compute a location for the remote

Captain's Corner *Continued from page 1*

point.

Firefighters who have this app can easily take the data from multiple reports, and even enter data from those who don't have this app but are using an old fashioned compass or handheld GPS, to locate the fire more easily and with less error than the old method of using paper maps and compass and plotting the positions and drawing lines to find the intersection.

You can choose between using the camera sight with crosshairs for the compass (default), or sight across the face of the phone to get better accuracy where you have a small camera or poor visibility.

The app displays your GPS coordinates, number of satellites in view, and the accuracy of your position. It automatically calculates the declination at your location to use True North (more accurate) compass bearings.

The app uses automatic compass calibration, and has an "Adjust" feature useful if, after calibration, your compass still reads wrong by a repeatable amount (for example, if the camera is not aligned with the compass). You can add an "Adjust" number, which is added to all compass readings. You can also use an old-fashioned compass and enter the bearings.

You can repeat and get bearings from more than two points and view them as overlays on a map. Data is stored as KML files so you can save as many bearings as you like and view them on the phone or desktop computer using various map programs, or e-mail them to others or yourself at home to view with a larger screen on Google Maps.

For those of you with an iPhone or iPad, don't feel left out because you can't run the "Triangulate" Android app. "FoxHunt" by RAI Laboratory is an app you can download for direction finding and search and rescue. Pinpointing the location of a target you can see or can identify by radio signal is easy with "FoxHunt."

Spot the target, point your iPhone or iPad at it, and tap on the on-screen button. Your position and heading are recorded. Move to another location and repeat. Two bearings on the target let "FoxHunt" plot the probable location of the target clearly on a map. Adding more bearings allows "FoxHunt" to pinpoint the target more accurately. Once the target has been mapped, driving directions are just a tap away on your iPhone.

"FoxHunt" was designed specifically to support amateur radio direction finding. It can also be used in other applications where bearings to the target are available by other means, including visual spotting of landmarks (or wildfires).

The latest version (1.2.1) of FoxHunt fixes several bugs related to selection of bearings in the bearing table, and deleting bearings.

OCRACES Displays Van at Ham Jam

OCRACES displayed its emergency communications response vehicle at Ham Radio Outlet's Ham Jam in Anaheim on Saturday, July 21, 2012. Jim Dorris, KC6RFC, drove the van to and from its parking space at OCSD/Communications & Technology on Eckhoff Street in Orange. Sgt. Chuck Dolan, KG6UJC, had taken care of washing and tidying up the van before it was deployed to Ham Jam. Lt. Harvey Packard, KM6BV, checked out the condition of the van, and wrote a detailed report after the event. Also at Ham Jam were Randy Benicky, N6PRL (with Lee Anne, KI6VUH), Capt Ken Bourne, Lt. Ralph Sbragia, W6CSP, Applicant Tom Riley, K6TPR, and OCSD/Communications & Technology Director Robert Stoffel, KD6DAQ. Several radio amateurs dropped by our van for a tour and to learn about OCRACES.

Our van was parked next to a Red Cross emergency vehicle, with several of their communicators at the event. The Hospital Disaster Support Communications System (HDSCS) also had several members at their exhibit just outside HRO's store.

Some of the OCRACES members at Ham Jam included (left to right) Ken Bourne, W6HK, Randy Benicky, N6PRL, Chuck Dolan, KG6UJC, Jim Dorris, KC6RFC, and Harvey Packard, KM6BV.

Thanks to HRO's Anaheim Store Manager Janet Margelli, KL6MF, for arranging an excellent parking spot for our van, and to all of the HRO crew for hosting an excellent event and their support of emergency communications. The event included Gordon West, WB6NOA, talking about various aspects of amateur radio, Clint Bradford, K6LCS, talking about AMSAT and satellite communications, Technician Class test sessions, and some great door prizes.

Next OCRACES Meeting: August 6th

The next County of Orange RACES meeting will be on Monday, August 6, 2012, at 7:30 PM, at the Orange County EOC on Loma Ridge. Angela Garbiso, an Education Specialist with the Orange County Fire Authority, will provide training for participating in Severe Fire Weather Patrols. All OCRACES members and City RACES members who wish to participate with OCRACES in the patrols are required to attend this annual training.

We will discuss the use of GPS receivers or smartphones and tablets for getting bearings on wildfires, using "Triangulate" (Android) and "FoxHunt" (Apple) apps. (See "Captain's Corner" in this issue.)

OCRACES officers are requested to arrive at Loma Ridge at 6:00 PM, to conduct two applicant interviews.

ARRL Changes Field Day Rules

Due to concerns regarding extreme heat and weather conditions in many parts of the country, the ARRL Board of Directors in its 2012 Second Meeting on July 20-21, 2012, in Windsor, Connecticut, voted to change the Field Day rules to permit Class A and B stations to begin to set up earlier. Prior to the rule change, these stations were not allowed to begin setting up their stations before 1800 UTC on the Friday before Field Day. Now these stations can begin setting up as of 0000 UTC on the Friday before Field Day (Thursday afternoon or evening, local time). Even though the rule change permits setup to begin 18 hours earlier, cumulative setup time shall not exceed 24 hours. This is the first major change to the Field Day rules since 2003, when a new class—Class F for EOC stations—was added.

Heathkit Bites the Dust

Many radio amateurs, including some in OCRACES, got their start building do-it-yourself electronics kits made by Heathkit. Simple low-powered transmitters as well as more sophisticated transceivers and amplifiers were particularly popular. Unfortunately, Heathkit is no more.

The remnants of the company that once employed up to 1,800 people in St. Joseph Township, Michigan, is now on the auction block. The company, down to half a dozen employees at the end, defaulted on its lease and filed for bankruptcy, owner Don Desrochers told the *Herald-Palladium* of St. Joseph.

The company was last known as Heathkit Educational Systems. The business was primarily dependent on federal and state funding for schools. Spending in education continued to decline, and it was economically unfeasible to continue operating, according to Desrochers.

Founded in 1926 as an aircraft company, the Heath Company shifted its focus to electronics after World War II when it bought surplus electronic parts to build kits.

In 1947, Heath introduced its first electronic kit, the O1 oscilloscope that sold for $50.00. After the success of the oscilloscope kit, Heath went on to produce dozens of Heathkit products, including amateur radio, test instruments, and hi-fi audio.

In 1954, Heath was bought by Daystrom Company. Daystrom was absorbed by oilfield service company Schlumberger Limited in 1962. In 1974, Heathkit started "Heathkit Educational Systems" to produce general electronics and computer training manuals. Heathkit also expanded into digital and, eventually, computerized equipment, including digital clocks and weather stations.

In 1978, Heath introduced the Heathkit H8 computer. Seeing the potential in personal computers, Zenith Radio Company bought Heath Company from Schlumberger in 1979, and renamed the computer division Zenith Data Systems. When Zenith eventually sold ZDS to Groupe Bull in 1989, Heathkit was included in the deal.

Heathkit left the kit business in 1992, focusing on educational materials. In 1995, Bull sold Heathkit to a private investor group, when then sold it to another investment group in 1998. Wanting to concentrate on the educational products, this group sold the Heath/Zenith name and products to DESA International, a maker of specialty tools and heaters. DESA filed bankruptcy in December 2008. The Heathkit company existed for a few years as Heathkit Educational Systems. It announced it was getting back into the kit business in 2011. However, it was losing the educational business faster than it could grow the electronics business, which was not sustainable, according to Desrochers.

Many hams continue to operate Heathkit equipment, and are now saddened at the demise of this famous name.

FCC Denies Emergency Calling Frequency

Saying that it believes that the Amateur Service "allows flexibility to provide emergency communications in a way that takes into account channel availability and other local conditions," the FCC denied a Petition for Rulemaking to create a nationwide emergency calling frequency. The Petition—filed by Bryan Boyle, WBØYLE, of Morrisville, Pennsylvania, and Jim Dixon, WB6NIL, of Alhambra, California—called upon the FCC to designate 146.550 MHz as a "non-exclusive nationwide Amateur Radio Service emergency communications channel using FM wideband modulation."

Doyle and Dixon noted in their Petition that other services, such as the Citizens Band Radio Service, the Aviation Service and the Maritime Service, have specific channels set aside for emergency communications. They claimed that use of these channels "to good effect by those in distress [and that this] is a testament to the need for individual services to have a readily accessible and publicized" emergency communications channel. In denying the Petition, the FCC said in part that Boyle and Dixon "had not shown an existing problem that would be addressed by a rule change designating a nationwide Amateur Service emergency calling frequency."

The FCC told Boyle and Dixon that the rules of the Amateur Radio Service allow "an amateur station to transmit one-way messages necessary to providing emergency communications," maintaining that these messages may "be transmitted on any frequency authorized [by] the control operator of the amateur stations transmitting the messages. Additionally, the rules require that, at all times and on all frequencies, each control operator must give priority to stations providing emergency communications. Administration of these rules is accomplished primarily through voluntary frequency planning by, and cooperation among, Amateur Radio operators."

Pointing out that the its Wireless Telecommunications Bureau had previously considered establishing a nationwide common calling or distress channel "in a service where transmission of such communications is permitted but not required...and the channels are shared by all users," the FCC said that it had concluded that "it was not necessary to designate a Family Service Radio (FRS) channel for establishing emergency communications because emergency communications have a priority on all FRS channels and the record did not demonstrate that FRS users were having any difficulty establishing communications."

The FCC did note, however, that unlike channels in the Citizens Band Radio Service and the Maritime Service, channels in the FRS are not routinely monitored by emergency first-responders: "Like the FRS, the Amateur Service differs from the services in which our rules designate a nationwide emergency calling channel in that it is not routinely monitored by safety entities such as the police or the Coast Guard. Additionally, those services do not require an individual to have an operator license or otherwise demonstrate the ability to operate the station by performing such functions as selecting transmitting channels to avoid interference. Therefore, we believe the administration of these services primarily through operational rules that specify the use of a channel and transmitter technical standards is reasonable."

The FCC observed that under the current rules of the Amateur Radio Service, operators can use "multiple channels on the same or different amateur band if needed for an event, or use multiple channels in the same band when multiple, but different events occur." It also mentioned that the Boyle and Dixon's proposal "that the channel be a 'non-exclusive nationwide' channel is, substantively, no different from current channel priorities because all Amateur Service channels are shared and may be used for providing emergency communications. If such a 'non-exclusive nationwide' channel is needed, nothing in our rules prevents the amateur community from voluntarily agreeing to designate a channel for this purpose. We conclude, therefore, that you have not shown an existing problem that would be addressed by a rule change designating a nationwide Amateur Service emergency calling frequency."

Paul Dominic Loeb, KH6HME, SK

Once a year, a brief tropo opening from Southern California to Hawaii is common on 2 meters. We have been alerted to that condition by a beacon set up by Paul Lieb, KH6HME, at the 8,500-foot level on the slopes of Mauna Loa Volcano on the big island of Hawaii. We are sad to report that Paul passed away on July 16, 2012. He was born in Anaheim on November 23, 1927. Paul was Anaheim's oldest continuously licensed electrical contractor and owner of World Electric Corporation. He was also a licensed electrical contractor on the big island of Hawaii. To reach his beacon was a treacherous 3-mile hike. He welcomed many radio amateurs to his outpost, a closet-size tin shack. With the aid of Paul and his beacon, thousands of West Coast hams were able to set numerous distance records, and Paul set many of his own. Paul was the keynote speaker at the 1999 Dayton Hamvention, and received the Special Achievement Award, which cited "his pioneering and record-setting work in tropospheric ducting and VHF, UHF, and microwave communications."

Watching the Web
Web Sites of Interest to RACES Personnel

IRLP Topic Channels
http://www.irlptopics.net/

The Internet Radio Linking Project (IRLP) was introduced to amateur radio in 1998 by Dave Cameron, VE7LTD, in Vancouver, BC, Canada. IRLP is now global, allowing hams to communicate worldwide. The Oregon Internet Radio Group and its founder, Michael Bloom, W7RAT, has gathered node owners around the world to widen that global communications and friendship. Individual node owners are dedicating specific channels on their IRLP reflectors to "IRLP Topic Channels," which will make it possible to find other hams all over the world with similar interests. History, DX, movies, and music are some of the topics being offered. Some channels will adjust, depending on the interests of the day. The following channel descriptions are listed on the http://www.irlptopics.net/ Web site:

♦ IRLP Lounge—The place to meet and greet; discuss topics not listed.
♦ The Scouting Channel—Radio Scouting USA / JOTA; for all Scouts; see http://www.k2bsa.net/on-the-air.
♦ DX Channel—Track rare DX, make schedules, discuss propagation and operating technique.
♦ Sports—Baseball, football, soccer, basketball, golf, tennis, any sport, local or international.
♦ History & Current Events—History and history in the making, yesterday's events and today's news.
♦ Media—From the silent screen to Imax, from Milton Berle to Robin Williams, big bands to rap.
♦ Election 2012—Politics of the United States respectfully discussed.
♦ The Meaning of Life—Philosophy, psychology, and science: what makes us tick, where did we come from, and where are we heading.
♦ The Food Channel—Pizza, BBQ, or recipes. Whatever stirs your appetite.
♦ Stamp Collecting—Gathering philatelist hams from around the world.
♦ Emergency Communications—Prepare for the next hurricane, tsunami, tornado, or man-made catastrophe.
♦ Hams in Broadcasting—Broadcast central for hams involved in radio or TV broadcasting.

The IRLP Topic Channels Web site goes on to explain how the elements of IRLP fit together. Every node (which is a computer and a radio) is identified with four digits, such as 3039. However, in the real computer world, computer addresses are referred to as "IP addresses" and look something like 235.235.23.45. In the IRLP world, the IP addresses are converted to those four-digit node numbers. When one node ("Joe") wants to talk to another node ("Tom"), Joe tries to call Tom using the four-digit identifier. Tom authenticates Joe's node to make sure Joe's node is an authentic IRLP station. This checking is known as "handshaking." Once handshaking has taken place, the communication can begin. If Joe has an HT, he could transmit to his node's radio. The node's radio would pick up Joe's signal and output analog audio to Joe's computer sound card, which converts the analog audio into digital packets. These packets are actually Voice over Internet Protocol (VoIP) packets, similar to Skype or VoIP telephones. The packets travel over the Internet. The voice packets would arrive at Tom's node computer, where the sound card converts the voice packets into analog voice signals. These analog signals are passed to the microphone input of Tom's node radio and a voice signal is transmitted and is received by Tom's base-station radio. Tom now hears Joe's voice coming out of the speaker of his base-station radio. This is a one-to-one connection. To have a three-way or four-way conversation, a reflector is used. A reflector is kind of a computer server that takes in voice packets from one IRLP node and sends them out to all other nodes that are connected to the reflector. There are about 30 reflectors around the world, each having 10 available channels. Reflectors have four-digit ID codes also, but they begin with the number "9."

RACES/MOU News from Around the County

Fountain Valley RACES

Fountain Valley RACES will support the City's Police Department during National Night Out on Tuesday, August 7, 2012.

Huntington Beach RACES

Huntington Beach RACES thanks Emergency Manager Brevyn Mettler, KI6RFG, and Eric Engberg, Division Chief of Operations and the Huntington Beach Fire Department, for allowing the unit to access the parking area at the beach for Field Day. Mayor Don Hansen and his wife and daughter visited the operation. The City's Police helicopter, HB1, performed several fly-bys and sent full-color, P5 ATV images of the shoreline and Field Day operation to HB RACES in the Emergency Communications Trailer.

Santa Ana ACS

Santa Ana Response Team (SART) will man booths and assist police at Martin Elementary School during National Night Out on Tuesday, August 7, 2012.

Hospital Disaster Support Communications System (HDSCS)

HDSCS has participated in the ARRL Field Day for many years. 2012 was the eleventh year that their Field Day has taken place at Huntington Beach Hospital (HBH), one of their supported facilities. The hospital's decontamination and surge capacity tents were set up to house the stations and HBH employees and staff were encouraged to visit the operation. Almost 30 Scouts from several troops in the area arrived for a

radio merit badge class in the HBH basement, taught by HDSCS member Rick Soikkeli, AE6RS. After that, all of the Scouts got on the air to make their required contacts. In the late afternoon was a ham radio licensing and upgrade session. Besides the voice operations, several members operated CW mode (Morse code) and there were contacts through orbiting amateur radio satellites as HDSCS used its special call sign: W6H. Field Day leader Ken Simpson, W6KOS, put together the event and prepared the results package to submit to the ARRL.

HDSCS frequently holds "radio coaching" sessions to help new members become proficient at operating their own portable equipment. The most recent session was Saturday, June 16, 2012, at Doctor's Ambulance headquarters in Laguna Hills. Tom Gaccione, WB2LRH, explained the basics of VHF/UHF repeaters, subaudible tones, and hand-held radio programming. Then the

attendees were assigned to individual radio coaches who helped them master the technique of quickly finding frequencies and programming memories. This is important because, during drills and activations, HDSCS members often have to quickly call to get resources from the Red Cross, local RACES units, and so forth by going to their net repeaters and simplex frequencies.

County of Orange RACES

Congratulations to Jim Dorris, KC6RFC, who is now an Extra Class licensee. Jim also recently acquired a Master's Degree in Information Technology from the University of Phoenix.

"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

August 2012

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4 *ARES Seminar*
5	6 *OCRACES Meeting* & *Weekly ACS Net*	7	8	9	10	11
12	13 *Weekly ACS Net*	14	15	16	17 *Orange County Amateur Radio Club Meeting*	18
19	20 *Weekly ACS Net*	21	22	23	24	25
26	27 *Weekly ACS Net* & *SWACS Freq. Test*	28	29	30	31	

Upcoming Events:

- **Aug 4:** ARES Seminar, 0900-1500, Perris Senior Center, 100 N. D Street, Perris
- **Aug 6:** OCRACES Meeting, 1930 hours, Orange County EOC, Loma Ridge. Annual Severe Fire Weather Patrol training.
- **Aug 17:** Orange County Amateur Radio Club Meeting, 1900, Red Cross, Santa Ana
- **Aug 27:** Southwest ACS Frequency and Radio Test.
- **Sep 10:** OCRACES Meeting, 1930, 840 N. Eckhoff Street, Suite 104, Orange. Coast Guard Auxiliary communications.
- **Oct 1:** OCRACES Meeting, 1930, 840 N. Eckhoff Street, Suite 104, Orange. Using a lensatic compass and basic map reading.
- **Oct 6:** City/County RACES & MOU Drill, 0900-1100 hours. Scenario: massive power outage.

www.ocraces.org

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

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.

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County of Orange RACES

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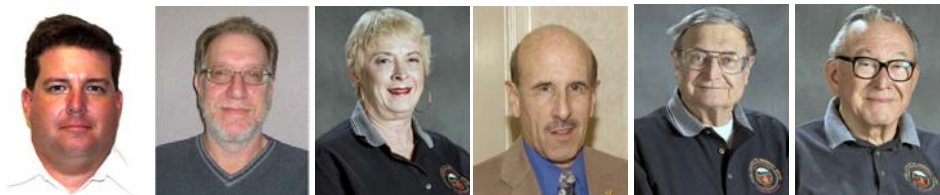w6hk@ocraces.org

"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** KF6ZLQ	**Robert Stoffel** KD6DAQ
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