

April 2008



Newsletter of the County of Orange Radio Amateur Civil Emergency Service

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Captain's Corner

by Ken Bourne, W6HK, Chief Radio Officer

Digital ATV

Several OCRACES members have considerable experience and expertise in amateur television (ATV). During past emergencies and drills, they transmitted images to (and throughout) the EOC that revealed incident conditions. OCS/ Emergency Management personnel have commented that our video coverage has been very useful. We need to continue and enhance our ATV capabilities in our service to OCS. To enhance, do we need to consider digital ATV (D-ATV)?

Many, if not most, radio amateurs involved in ATV are uncomfortable with the thought of going digital. They have invested considerable time and money in developing their analog systems, and claim that replacing the existing analog "infrastructure" would be too expensive. Furthermore, digital transmitters are not commonly available, especially for 430 MHz ATV.

Even basic cell-phone digital cameras produce higher resolution images than typical analog cameras in a closed-circuit TV (CCTV) system. Analog cameras see and store less detail. Image quality is typically about 288 horizontal lines on a CCTV video screen, equivalent to about 0.4 megapixel. On the other hand, a 1-megapixel digital image produces approximately 900 lines.

A high-resolution digital camera can produce detailed images of an area that normally requires two or three analog cameras to cover.

Consider what you could include in your D-ATV system! How about one of those new digital camcorders that produce

high-definition video on the same consumer SD cards as your digital camera? That would be more reliable than tape formats. One such camcorder (admittedly fairly expensive) records 1080i video and still images for up to six hours on a 32-GB SDHC card.

HDTV monitors are becoming less expensive, smaller, and lightweight. Analog TVs will soon be obsolete (without a converter, unless on cable), as TV broadcast must go all digital by February next year.

Most currently available ATV transmitters are spectrum hogs, transmitting two sidebands with a bandwidth of 10 MHz. Analog vestigial-sideband TV transmissions occupy about 4.5 MHz of a 6-MHz wide channel, and are being replaced by digital TV transmissions with an even narrower bandwidth. ATVers need to go modern and go digital, like they have in Europe. Image quality will be much better (although weak digital signals will not be viewable, contrary to weak analog signals, which are viewable but with "snowy" images), and we will have advanced processing and recording capabilities.

D-ATV transmitters and other equipment such as modulators are not readily available yet, except for some low-power 2.4 GHz equipment in a spectrum that is much too crowded to be practical. Many difficulties need to be overcome, such as error protection, QPSK modulation challenges, multipath, etc., when using DVB-S, the recommended standard for D-ATV. More information is available at <http://www.atco.tv> and at <http://www.d-atv.nt>.

The Next
OCRACES
Meeting is

April 7, 2008
1930 Hours

840 N. Eckhoff St.,
Suite 104, Orange

Featured Speaker:
Ray Grimes, N8RG,
on 406-MHz ELT



Orange County Sheriff's Department
Communications Division

Support Rebuilding Together Orange County

by Marten Miller, KF6ZLQ, OCSD Emergency Communications Coordinator

As we have done in past years, OCRACES will once again provide logistics communications support for the annual Rebuilding Together Orange County event. Although we do not yet know the number of sites and their addresses, I still need to find out how many communicators are available.

Formerly known as Christmas in April, the Rebuilding Together Orange County organization partnerships with the community to rebuild owner-occupied homes, shelters, and nonprofit facilities for low-income residents. Services are provided particularly for the elderly and those with disabilities, so that they may live independently in warmth and safety. Although Rebuilding Together provides services throughout the year, the national rebuilding day is Saturday, April 26, 2008. This is the largest event of the year and when communication support is needed the most. As we have done in the past, OCRACES will be seeking assistance from any interested City RACES unit. The event is too large for us alone, and we are seeking communicators for this day-long activity. RACES volunteers must have a 2-meter/440-MHz handheld radio, and have the ability to drive their personal vehicle between several locations throughout the day. This event usually starts by 0800 and runs as late as 1700 hours, although many shifts may end earlier, depending on how quickly the work is completed. If you are available for only half the day, let me know and we can accommodate that as well. If you plan to support the DonateLIFE walk/run event being coordinated by Fullerton RACES the same day, you are still welcome to support Rebuilding Together OC when the DonateLIFE event is completed. The DonateLIFE event should be completed by 1000 hours and we will need communicators throughout the day for Rebuilding Together OC. Our communications link allows the various teams to make quick contact with the main office should any emergency or safety issue occur or when questions arise about resources or staffing.

Although the list of job sites has not been finalized yet, we have been told there will likely be sites in Huntington Beach, Santa Ana, Garden Grove, Orange, and Tustin. More cities likely will be added to this list. It would be great if we could provide a communicator at each site, but if we can't, some communicators will be asked to check up on more than one site.

Please contact me if you would like to participate in this event and let me know what area of the County you prefer and the times you are available.

Robert Stoffel Attends DCS Meeting

OCSD/Communications Director Robert Stoffel, KD6DAQ, attended and represented Orange County at the Los Angeles County semi-annual DCS meeting at the Burbank EOC on March 17, 2008. Over 200 DCS members from all over Los Angeles County attended the meeting. Several emergency vehicles were on display as well as other emergency related equipment. During the meeting DCS members received an overview of activities for the past year, and awards were also presented to several DCS members.



Burbank RACES (BEARS) Radio Officer Eric Christensen, K6EJC, and Wanda Penner, KG6GTA, in EOC radio room



Bears member Rick Penner, W6RJP, inside radio room at Burbank EOC



DCS Program Coordinator Sgt. Jeff Jablonsky, KI6EXP, LASD, provides overview of DCS activities to attendees at semi-annual meeting

Preparations Continue for Baker to Vegas 2008

by Ralph Sbragia, W6CSP, OCRACES Radio Officer

Preparations for Baker to Vegas 2008, the 24th running of the Challenge Cup Relay, are proceeding toward their climax on April 19 and 20, 2008. Runners are completing their final practice runs. The Race Committee Communications group is reviewing the communications forms submitted by the teams and preparing slot numbers for the APRS boxes. The volunteers for the various teams are dotting I's and crossing t's.

OCRACES, like other groups, is making final preparations for our support activities. One of our most important efforts is working with the three OCSD teams to determine their needs from us, as well as preparing the APRS beacon boxes for deployment and confirming our plans for the Pahrump Command Post.

We are currently planning to directly support seven teams this year: the three OCSD Teams, two OCDA teams, the California Department of Insurance Investigators, and the State of Arizona District Attorney's Team. We will also provide indirect support, through our monitoring of the repeater systems, to any and all Orange County Teams that might come up on the repeaters in an emergency.

There have been some changes to our traditional communications plan due to the failure of the BARN repeater on Mt. Potosi. Ken Bourne, W6HK, has contacted RACES personnel in San Bernardino County and obtained permission for us to utilize a repeater under their control. More information and details will be discussed during the April 7th OCRACES meeting.

Field Day: June 28-29, 2008

Field Day will once again occur on the last full weekend in June, Saturday and Sunday, June 28-29, 2008. Leading our effort is Radio Officer Ralph Sbragia, W6CSP. The event will occur once again at Craig Regional Park in Fullerton, near the border with Brea. All members are requested to participate. This will be a great training exercise in setting up emergency communications in the field and becoming more familiar with our emergency communications response vehicle. Members and their families will also bring a variety of delicious food for "dinner in the park," which adds to the enjoyment of the event. City RACES members are welcome to participate with us. Additional information will be provided in the June issue of *NetControl*.

Next OCRACES Meeting: April 7th

The next OCRACES meeting is on Monday, April 7, 2008, at 7:30 PM, at 840 N. Eckhoff Street, Suite 104, in Orange. Our featured speaker is OCSD/Communications Engineering Manager Ray Grimes, N8RG, who will give a presentation on the new 406-MHz Emergency Locator Transmitter (ELT) changes that affect aircraft, marine, and personal distress devices. The U.S. is terminating support of SARSAT satellite tracking and reporting services for 121.5/243-MHz ELTs on February 1, 2009. These VHF ELTs may still be operated according to the FAA/FCC but will not be satellite tracked. A new 406-MHz digital tri-band ELT is being offered and is required for aircraft operating in many foreign countries. The new 406-MHz ELT is efficient, operating for at least 50 hours, is tri-band, and can support close proximity location in minutes or high-accuracy GPS location when interfaced with an aircraft GPS, also providing aircraft N number and owner/operator positive identification.

Also at this meeting, Radio Officer Ralph Sbragia, W6CSP, will lead our discussions on supporting the Baker to Las Vegas Challenge Cup Relay on April 19-20, 2008 (see his article at the top of this page).

OCRACES Assists Vision Quest Bike Event

OCRACES members assisted Tri-Cities RACES in the Vision Quest Mountain Bike Pow Wow on Saturday, March 1, 2008. Leading the OCRACES effort was Radio Officer Scott Byington, KC6MMF. The OCRACES emergency communications response vehicle was deployed at 4:30 AM. Tom Tracey, KC6FIC, assisted early in the morning. Radio Officer Ralph Sbragia, W6CSP, also arrived early in the morning to resolve problems with some of the APRS tracker boxes that were used. Chuck Dolan, KG6UJC, and Chief Radio Officer Ken Bourne, W6HK, were also at the OCRACES van at O'Neill Regional Park. Operations were on the 449.180 MHz, using portable repeaters.

The Vision Quest bicycle race covered 57 miles through the Orange County portion of the Cleveland National Forest, with an 11,000-foot elevation gain. The event began at 5:30 AM, from Black Star Canyon Road, and concluded at O'Neill Regional Park.

The race communications director was San Juan Capistrano RACES Radio Officer Joe Lopez, W6BGR. (SJC RACES is part of Tri-Cities RACES.). Joe operated net control from the OCRACES van. Other Tri-Cities RACES members participating included Chief Radio Officer Dave White, N6NLD, Mike Morgan, KE6IBH, Tim Wendel, KI6LOP, Robert Thompson, KE6RKG, Donna Ducharm, KI6IYZ, Drew Holtz, KI6IZD, Clark Croisette, KI6IZE, and Douglas Croisette, KI6KSA. Members of SOARA (South Orange Amateur Radio Association) also participated in the event. They included Heiko Peschel, AD6OI, Patricia Peschel, AD6OH, Tom Hobbs, AE6SH, Vlad Boyko, KI6BLP, Richard Saunders, K6RBS, Matt Mendenhall, KE6ALM, Mike Slygh, KI6IRA, Jerrod Bickler, K6TEK, and Greg Scott, N6REG.



OCRACES Radio Officers Scott Byington, KC6MMF (left), and Ralph Sbragia, W6CSP, check programming of APRS tracking boxes at OCRACES van in O'Neill Regional Park



San Juan Capistrano RACES Radio Officer Joe Lopez, W6BGR (who was also the race communications director), operates net control from the OCRACES emergency communications response vehicle

OCRACES to Exhibit at OC Fair on July 27th

County of Orange RACES members will occupy the ham radio booth again this year at the Orange County Fair on Sunday, July 27, 2008, from 5:00 PM until 11:00 PM. It will be a 20-foot booth, equipped with HF, VHF, and UHF radios, and antennas on the roof. The theme for this year is "Say Cheese." The chairman for the ham radio exhibit on all days of the fair is Jerry Fullerton, KD6JBL. Event coordinators are Cheryl Day, KI6AFL, and Susan Roatch, KF6VBO.

Watching The Web

*Web Sites of Interest to RACES Personnel
by Ken Bourne, W6HK, OCRACES Chief Radio Officer*

Free Online Calculators

<http://www.calculatoredge.com>

Calculatoredge
now calculation made easy!

Thanks to Gordon West, WB6NOA, who mentioned this Web site on a recent Red Cross net. Calculator Edge is a large set of online free calculators for engineers, students, and others, and is especially useful to radio amateurs. The Web site features more than a few hundred calculators for solving complex equations and formulas in the fields of electrical, mechanical, chemical, electronics, civil, metallurgy, oil and gas, optical, plastics, ceramics, physics, mathematics, etc.

General calculators include volume, pressure, temperature, weight, area, mass length, speed/distance/time, scientific, periodic table, scaling triangle, personal weight, vehicle speed, line segment to angle, and torque.

Of particular use to radio amateurs, electrical engineering calculators include, pressure, Ohm's law, mass length, temperature, velocity of sound, RMS value, Wheatstone bridge, parallel resistor, L-C resonance, LED resistor, microstrip inductor, reactance, skin effect, RF amplifier, whip antenna, voltage divider, wire parameter, pinhole sizing, Friis path loss, IC 555 timer, HF filter, Zener diode, line of sight, speed-distance-time, pi attenuator, voltage drop, PCB circuit trace width, laser real-time unit converter, Tee attenuator, air-core inductor inductance, resistor and capacitor value, frequency and wavelength, maximum flux density, MSP430 UART register, heat-sink temperature, inductance of straight wire, inverting op-amp resistor, helical antenna, Butterworth pi low-pass filter, Butterworth pi high-pass filter, Chebyshev pi low-pass filter, Chebyshev pi high-pass filter, single-layer coil, decibel, RF power density, subwoofer vent length, voltage-current-resistance-power, capacitance-frequency-inductance, resistance-frequency-capacitance, resistance color-code value, pressure ranges of vacuum pumps, capacitor energy and time constant, flyback transformer power supply, BJT transistor bias voltage, noninverting op-amp resistor, capacitor parallel-plate capacitance, A-S-Y-Z parameter conversion, Butterworth Tee low-pass filter, Butterworth Tee high-pass filter, Chebyshev Tee low-pass filter, Chebyshev Tee high-pass filter, equal-component low-pass filter, equal-component high-pass filter, Sallen-Key Butterworth low-pass filter, Sallen-Key Butterworth high-pass filter, polyester capacitor color code, efficiency bandwidth product, subwoofer box tuning frequency, vented ported subwoofer box, and subwoofer vent minimum port diameter.

OCRACES to Exhibit Van at Red Cross Event

County of Orange RACES will exhibit its emergency communications response vehicle at the Orange County Chapter of the American Red Cross communications training event on Saturday, May 31, 2008, from 0700 to 1600, at 601 N. Golden Circle Drive, in Santa Ana. Radio Officer Scott Byington, KC6MMF, will team up with Bill Prats, K6ACJ, of ARC to give a Winlink demonstration. Other planned Red Cross demonstrations include HF NVIS antenna, UHF ATV, portable go kits, emergency vehicles and trailers, solar power, APRS with GPS, mapping, and geocaching, IRLP, Echolink, D-Star, portable PA system, crossband systems, battery power, emergency coax splicing, soldering PL-259s, DSP speakers, T-hunting, J-poles, etc. All OCRACES members are requested to attend this event, in class A or class B uniform.

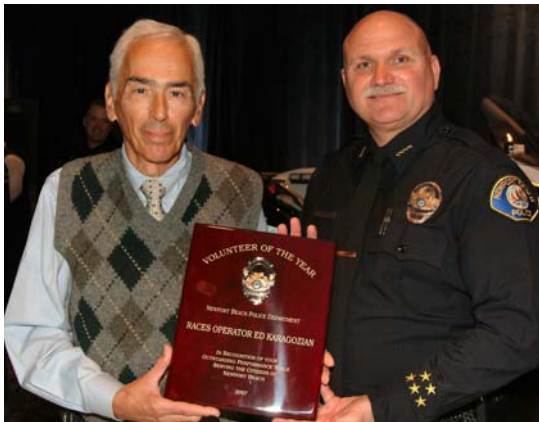
ACS/RACES News from Around the County

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

**Please send your news to:
w6hk@ocraces.org**

Newport Beach

The 37th annual Police Appreciation Breakfast was held on Thursday morning, March 20, 2008, at the Newport Beach Hyatt Regency Hotel. The event was hosted by the Newport Beach Chamber of Commerce and sponsored by Wells Fargo Bank and other organizations throughout the community. Officers and civilians were honored at the banquet attended by over 400 people. Congratulations to Ed Karagozian, K6JGN, who was honored as "Volunteer of the Year" for his involvement with Newport Beach RACES. Ed served for many years as the city's RACES Radio Officer.



Ed Karagozian, K6JGN (left), who served many years as Newport Beach RACES Radio Officer, accepts "Volunteer of the Year" Award from Newport Beach Police Chief John Klein

Anaheim

Bob Templeton, KI6CWA, was appointed Chief Radio Officer, Anaheim RACES, in December 2007. He retired in 2005, after working for 36 years in the city's Public Utilities Department. He now works part time in the department's Electrical Engineering Division.

Anaheim RACES received an 8-ft by 16-ft trailer that was a retired fire-prevention resource from the city's Fire Department. The trailer will be retrofitted into a new emergency communications and technology resource to support RACES and CERT as well as countywide disaster response activities. It

is outfitted with awnings, a generator, and a fold-down side that doubles its usable space.

Fullerton

Fullerton RACES Radio Officer Gene Thorpe, KB6CMO, reports that 20 more amateur radio operators (for a total of 35) are needed for the DonateLIFE 5K/1K Run/Walk on Saturday, April 26, 2008, at California State University Fullerton. Hours are 7:00 AM to 10:00 AM or earlier. Contact Gene at kb6cmo@arrl.net if you can help

La Palma

La Palma Police Sgt. Raul Morales, who is the city's RACES Coordinator, is looking for suggestions on adding members to his RACES unit. He would consider teaming up with surrounding cities to form a program similar to Tri-Cities RACES or Seal Beach/Los Alamitos RACES.

Placentia

Eddie De La Torre, Management Analyst, is the new RACES Coordinator for the City of Placentia. He reports that their RACES meetings are held on the second Tuesday of the month at 1900 hours, at the Placentia City Hall, 401 E. Chapman Avenue.

Orange County

With great sadness we report that Donna Byington, mother of OCRACES Radio Officer Scott Byington, KC6MMF, passed away Sunday morning, March 23, 2008. We hold Scott and his family in our prayers.

State of California OES

Greg Allen, K6GMA, became a member of California OES ACS on February 25, 2008. Until then, he was a member of Costa Mesa Emergency Service Amateur Communications (MESAC), the city's RACES unit. Greg attended the monthly MESAC meeting on February 29th at the city's new EOC and received the "Volunteer of the Year" award. Congratulations to Greg.

April 2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7 <i>Monthly Meeting & Weekly Net</i>	8	9	10	11	12 <i>RACES/ MOU Breakfast</i>
13	14 <i>Weekly Net</i>	15	16 <i>OCCCCC Advisory Council Meeting</i>	17 <i>Baker to Vegas In-stalls at Eckhoff</i>	18	19 <i>Baker to Vegas</i>
20 <i>Baker to Vegas</i>	21 <i>Weekly Net</i>	22	23	24	25	26 <i>Rebuilding Together Orange County</i>
27	28 <i>Weekly Net</i>	29	30			

Upcoming Events:

- **Apr 7:** OCRACES Meeting, 1930, 406-MHz ELT by Ray Grimes, N8RG
- **Apr 12:** ACS/RACES/MOU Breakfast, 0800, Katella Grill
- **Apr 19-20:** Baker to Vegas
- **Apr 26:** Rebuilding Together Orange County
- **Apr 26:** Southwest ACS Meeting, Loma Ridge, 0830
- **Apr 26:** DonateLIFE 5K/1K Run/Walk, CSUF, 0700
- **May 31:** OC Red Cross Communications Training Event
- **Jun 28-29:** Field Day, Craig Park, Fullerton



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:

- 6m: 52.62 MHz output, 52.12 MHz input, 103.5 PL
- 2m: 146.895 MHz output, 146.295 MHz input, 136.5 PL *
- 23cm: 1282.025 MHz output, 1270.025 MHz input, 88.5 PL
- 1.25m: 223.76 MHz output, 222.16 MHz input, 110.9 PL
- 70 cm: 449.180 MHz output, 444.180 MHz input, 107.2 PL

* Primary Net - Mondays, 1900 Hours

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**“W6KRW ...
Serving
Orange County”**

Meet your County of Orange RACES Members!



Ken Bourne
W6HK



Scott Byington
KC6MMF



Harvey Packard
KM6BV



Ralph Sbragia
W6CSP



Joe Selikov
KB6EID



Marten Miller
KF6ZLQ



Robert Stoffel
KD6DAQ



Jack Barth
AB6VC



Jim Carter
WB6HAG



Ernest Fierheller
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Randy Benicky
N6PRL



Bill Borg
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Chuck Dolan
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Nancee Graff
N6ZRB



Ray Grimes
N8RG



Walter Ruy
KC6HAM



Martin La Rocque
N6NTH



John Roberts
W6JOR



Tony Sanchez
AE6QT



Steve Sobodos
KN6UX



Tom Stroud
N6FDZ



Tom Tracey
KC6FIC