

October 2006



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

Are cell phones obsoleting amateur radio, especially for emergency communications? On the contrary, the susceptibility of cell sites to overload or failure during disasters enhances the value of amateur radio as a communications backup. Furthermore, cell phones as well as established public-safety radio systems can be ineffective in isolated canyons, where communications are critically important during an emergency. RACES members are available in such cases for setting up temporary hill-top amateur-radio or public-safety repeaters for canyon coverage.

Cellular networks are among the first to fail during an emergency. In emergency, not only do emergency workers use cell phones, so does everyone else—to call home or to call relatives and friends to see if they are OK. This causes the cellular network and the entire telephone network to get congested. The telephone network is designed to have a call success rate of 99 percent, but that rate can drop to 10 percent during major disasters such as Hurricane Katrina, the Northridge earthquake, terrorist attacks, or a pandemic.

Cellular carriers realize that, to allow communications during an emergency, they must keep existing capacity running, add capacity where possible, and prioritize communications steps such as hardening cell sites and switches.

Because there is more demand for communications during an emergency, capacity is critical. Using temporary cell sites to supplement or replace the existing infrastructure and adding alternate forms of communications such as amateur radio (especially RACES) for public-safety requirements can take the load off of the commercial communications systems.

RACES... ...when cellular fails

Prior to 9/11, a priority service for wired telephones was in place. The White House, after 9/11, ordered that WPS (Wireless Priority Service) be established for prioritizing wireless (cellular) traffic. WPS manages the queue for calls coming into the wireless network, or calls to cell phones. If there is a wait for a slot on the cell, the WPS puts the highest priority calls in the queue first. Currently, WPS does not bump existing calls, even though the system has that capability.

Now all GSM (Globular System for Mobile Communications) carriers offer nationwide WPS access. These carriers include Cingular, T-Mobile, and Nextel's Integrated Digital Enhanced Network (IDEN). Verizon Wireless is the only CDMA (Code Division Multi-

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The Next
OCRACES
Meeting is

October 2, 2006
1930 Hours

840 N. Eckhoff St., Orange, CA

At this meeting we will review recent activities and our preparations for the City/County RACES Exercise on October 7th



Orange County Sheriff's Department
Michael S. Carona, Sheriff-Coroner

Captain's Corner *Continued from page 1*

ple Access) carrier to offer WPS. Sprint is scheduled to offer WPS next spring.

Cellular carriers are spending vast sums to overcome their emergency reliability problems. For example, according to *eWEEK*, Cingular has spent \$17 million to ensure it can repair a damaged network quickly. Their emergency response equipment includes two MACH (mobile access command headquarters) units. MACH 1 is about 1,000 square feet, houses up to 30 people, and is built into an expandable 65-foot trailer designed to work with an external communications unit. MACH 2 is a smaller unit for quick deployments. These two vehicles provide satellite connectivity and can handle radio, VoIP (voice over Internet protocol), and video, with 6 Mb/s transmission rates.

Cingular and other carriers are adding generator backup power to some of their cell sites, but failures are still likely during large disasters, necessitating the availability of amateur radio, especially RACES. T-Mobile claims to have N+1 (two times) redundancy on its backup power in case its generators fail. They are investing in permanent generators and in backups for the telephone company backhaul. They have a fleet of COWs (cellsites on wheels), COLTs (cellsites on light trucks), and portable generators. Verizon Wireless has permanent generators at every cell site where they are allowed, and the rest have portable generators. Verizon Wireless also



COW (cellsite on wheels).

uses two special fixed command centers, one on each coast, for backup.

Sprint Nextel, focusing on the ability for direct communications between handsets without a switch, has not eliminated the requirement for backup power to its cell sites. Much of their critical infrastructure is located where they believe it is safe from most threats. Switches are developed to back up each other, and traffic is moved to switches that are less crowded. Sprint also keeps a fleet of COLTs and emergency generators on standby.

These expensive and elaborate measures of the cellular carriers still will not prevent failure during extended, widespread emergencies, or provide coverage deep into unpopulated, remote canyons. This is where RACES members are highly valuable, for setting up portable repeaters and other communications systems.

Carriers face their greatest challenges with providing communications to government agencies, first responders, and nongovernmental organizations (NGOs) such as the Red Cross. For example, communications after Hurricane Katrina was delayed because technicians were prevented from splicing fiber after curfew (due to lack of credentials).

Generators on cell towers near major evacuation routes and command posts might run out of gas, due to the logistics of bringing gas to those sites. RACES members could set up along those routes and at CPs. We must be well-equipped to do so, with charged high-Ah batteries, generators, portable repeaters, gassed-up communications vehicles, etc.



COLT (cellsite on light truck).

Next OCRACES Meeting: Monday, October 2

The next County of Orange RACES meeting is on Monday, October 2, 2006, at 1930 hours, at 840 N. Eckhoff Street, Suite 104, Orange, CA. We will discuss recent activities (such as our September 8th mission and the September 30th Southwest ACS meeting) and preparations for the City/County RACES Exercise on Saturday, October 7th. We will also discuss RACES support for the General Election on Tuesday, November 7th.

City/County RACES Drill: Saturday, October 7

With the scenario of an Avian Flu Pandemic, County of Orange RACES, most all City RACES units, and the Hospital Disaster Support Communications System (HDSCS) will conduct their annual City/County RACES exercise on Saturday, October 7, 2006, from 0900 to 1100 hours. County and City EOC RACES Rooms will be activated for this drill. State of California OES ACS, American Red Cross, San Bernardino County ECS, and other adjacent county RACES units are invited to participate. This annual exercise provides an opportunity to exchange messages between the various City and county EOCs using the RACES radio equipment inside those EOCs.



The focus of this exercise will be communicating by voice, primarily between City EOCs and, secondarily, with the County EOC. Those RACES units that wish to test PSK31, ATV, and/or SSTV may also do so. The exercise will identify SSTV/ATV video paths between City and County EOCs, required antennas and transmitter power levels for providing F4 or better video to receiving stations, and a means to promote SSTV/ATV capabilities and methodology for multiple City operations during major events.

The Countywide RACES Message Form should be utilized by all participants in this drill, and will help to ensure common radio traffic passing techniques. The form can be downloaded from the County of Orange RACES Web site at <http://www.ocraces.org>.

The Frequency Plan and the SSTV/ATV Operations Plan for this exercise were emailed to all participants.

OCRACES Receives Weather Spotter Training

Thanks to Miguel Miller, Spotter Program Manager, National Weather Service San Diego, for the great training he gave us on weather spotting at the September 11th OCRACES meeting. As a result of this training, at least five new SKYWARN members were recruited. Thanks also to Orange County SKYWARN Coordinator Mike McLaughlin, KJ6EQ, and Southwest California SKYWARN Region Coordinator Steve Smith, WB6TWL, and Assistant Region Coordinator Jim Courter, KF6RWF, for their fine presentations. OCRACES is working with SKYWARN on developing an MOU that will enable communications between the two groups during a RACES activation, especially important during severe weather conditions.



OCRACES Chief Radio Officer Ken Bourne, W6HK (left), and Chuck Dolan, KG6UJC (right), surround Southwest California SKYWARN Region Coordinator Steve Smith, WB6TWL, at the SKYWARN booth at the ARRL Southwest Division Convention in San Diego on Saturday, September 23, 2006.

OCRACES Sets up Repeater for OCSD Mission

On Wednesday, September 6, 2006, County of Orange RACES Chief Radio Officer Ken Bourne, W6HK, was contacted by the Orange County Sheriff's Department regarding the need for reliable 800-MHz coverage during a "marijuana-bust" mission that was to occur that Friday morning, September 8th, deep in the Cleveland National Forest in the Santa Ana Mountains. The OCRACES emergency communications response vehicle was to be used at the command post, and a portable 800-MHz repeater was to be provided for OCRACES members to set up on a high spot overlooking the canyon where the mission was to take place. Bourne contacted OCSD Emergency Communications Coordinator Marten Miller, KF6ZLQ, to confirm RACES activation.

After learning that the command post would be deep into the mountains and inaccessible by the OCRACES van, and considering transportation requirements in and out of the mountains, it was decided to limit the RACES activation to the first three people who were immediately available for the mission, beginning at a Friday morning 0530-hour briefing at Loma Ridge and extending to about 1600 hours, and who could provide off-road transportation. Joining Bourne at the briefing at Loma Ridge were Radio Officer Scott Byington, KC6MMF, and Chuck Dolan, KG6UJC.

On Thursday night, prior to the early-Friday briefing, Steve Sobodos, KN6UX, OCSD/Communications, delivered a portable 800-MHz repeater and a gain antenna to Byington. At the briefing, Bourne, Byington, and Dolan discussed potential repeater sites in the mountains with a U.S. Forest Service enforcement officer, who had a set of detailed maps of the area. A site was chosen, which later proved ideal for excellent radio coverage.



Capt. Ken Bourne, W6HK, at repeater site.



Lt. Scott Byington, KC6MMF (left), and Chuck Dolan, KG6UJC, set up portable repeater.

After the briefing, Bourne, Byington, and Dolan, using Byington's and Dolan's well-equipped SUVs, followed OCSD vehicles into the mountains, far beyond the end of Silverado Canyon Road, and drove further to the prechosen high location overlooking the canyon into which deputies were hiking. The OCRACES members quickly set up the repeater and antenna on a 40-foot pole that Byington provided (anchored on a special plate under his front-left tire), along with his large gell-cell battery that powered the repeater for several hours. Communications were solid during the entire mission, which was a resounding success with the confiscation of 3,800 marijuana plants.

OCFA Open House: October 14

County of Orange RACES will exhibit its emergency communications response vehicle at the Orange County Fire Authority's Regional Fire Operations & Training Center Open House on Saturday, October 14, 2006, at 1 Fire Authority Road, in Irvine. All OCRACES members are asked to attend at least a portion of this event (in a Class A or Class B uniform), to provide tours of our van and to explain our capabilities. The event runs from 0900 to 1400 hours. Radio Officer Harvey Packard, KM6BV, will drive the OCRACES van to the event and arrive between 0700 and 0730 hours. Some members will be needed at that time for setup.

Watching The Web

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

K²RF Communications Products
<http://www.k2rf.com>



K²RF offers a line of communications and video products for broadcast, commercial, amateur, and other radio applications. Their product line includes audio processing, speech-limiting modules, and speech equalizers designed for repeater and other audio applications. Their new video product, the VDI-100, is a video data inserter and corrector unit that improves all video signals and corrects to an amplified broadcast-quality signal..

The DSL-100 dynamic speech limiter is an audio processing board for an HF, VHF, or UHF transmitter. It maintains quality speech content, keeping deviation levels within set parameters. It provides ± 12 dB gain to transmitted audio levels with low distortion and no clipping of the signal. The new DSL-200 (not released yet) will have adjustable gain controls to adapt to any impedance and audio application.. Gain is ± 18 dB.

The SAGE-300 three-stage speech audio gain equalizer enhances or suppresses low, mid, and high band speech audio frequencies before application to any HF, VHF, or UHF transmitter. Low-band $F_c = 500$ Hz, mid-band $F_c = 1.7$ kHz, and high-band $F_c = 2.8$ kHz. Each band's gain is adjustable.

The UPX-300 universal port extender turns any radio controller port into two additional ports.

Deadline Passes for Completing IS-100 Test

As mentioned in the last four issues of *Net Control*, all department employees and volunteers (including RACES) must complete two NIMS training classes in order for the Sheriff's Department to be in compliance with NIMS requirements. Most of our personnel have already completed the FEMA IS-700 on-line course, but a few still need to pass the required IS-100 on-line course, Introduction to ICS. This class and the on-line test was to have been completed by no later than September 30, 2006. If you have not already done so, on-line classes are taken at the FEMA Web site, and the IS-100 course can be found at:

<http://www.training.fema.gov/EMIWeb/IS/is100.asp>

Most OCRACES members reviewed the IS-100 study guide at the July 10, 2006, monthly meeting. To retain membership, any member who has not yet taken the on-line test must do so immediately. If you have questions or need assistance, please contact Marten Miller. Please don't put it off any longer.



RACES News from Around the County

**"RACES News"
provides an
opportunity to
share
information from
all City & County
RACES
organizations in
Orange County.
Please send your
news to:
w6hk@
ocraces.org**

Anaheim

Debbie Heilman, KI6CUN, Anaheim Fire Department, Office of Disaster Preparedness, advises that Lt. Chris Kielich, K6CF, is their RACES Chief Radio Officer. Anaheim RACES meetings are held on the second Tuesday of each month at 1900 hours at the Office of Disaster Preparedness.

Buena Park

Congratulations to Buena Park DCOMM (RACES) Radio Officer Jim Reynolds, N6MIP, who passed his Extra Class exam on Saturday, September 23rd, at the ARRL Southwest Division Convention in San Diego.

Newport Beach

Newport Beach RACES Radio Officer Ed Karagozian, K6JGN, advises that their next RACES event will be *Public Safety Day* scheduled for Sunday, October 15th. This is a major public event sponsored by the Newport Beach Police and Fire Departments. RACES members will man the table in front of the command post to hand out material and answer questions about RACES. Also, RACES members will man the radio room during the day.

HDSCS

April Moell, WA6OPS, Emergency Coordinator, Hospital Disaster Support Communications System, invites two members from any group participating in the October 7th City/County RACES Exercise to attend the October 4th HDSCS meeting at Fountain Valley Medical Center. There will be a presen-

tation on Avian Flu from the Orange County Health Care Agency. Following that will be a discussion of what would likely be a realistic interface in this scenario with cities, county, and Red Cross. Please contact April by October 2nd if there are members of any city or county RACES group wanting to attend the meeting.

At 8:20 AM on September 10, 2006, April Moell, WA6OPS, was alerted by the Orange County Communications Central Point that Chapman Medical Center was on internal diversion status due to a telephone failure. OC Communications had received this information by ReddiNet and calls to the hospital were unanswered. April immediately began dispatching HDSCS members to that 114-bed facility in the city of Orange. First to arrive at 8:42 was Ken Simpson, W6KOS, who found that all internal telephone extensions were inactive. Only one non-PBX line to the outside was working. He began amateur radio communications to the outside immediately. Additional operators soon arrived and were deployed to critical areas such the Emergency Department and the Medical/Surgical patient unit. Fortunately, the hospital's telephone technician arrived quickly and was able to diagnose and fix the switching system problem in relatively short order. Phones were fully back up at 10 AM and HDSCS operations secured following their usual 30 minute hold after that. In addition to Ken Simpson, here is an alphabetical list of the responding hams: Paul Broden K6MHD, Joe Moell KØOV, Jon Schaffer, W6UFS, and Clay Stearns, KE6TZR. Three other members were on standby and ready to respond. April was the outside base station contact.

October 2006

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2 <i>Monthly Meeting & Weekly Net</i>	3	4 <i>HDSCS Meeting on Avian Flu</i>	5	6	7 <i>City/County RACES Exercise</i>
8	9 <i>Weekly Net</i>	10	11	12	13	14 <i>OCFA Open House</i>
15	16 <i>Weekly Net</i>	17	18	19	20	21
22	23 <i>Weekly Net</i>	24	25	26	27	28
29	30 <i>Weekly Net</i>					

Upcoming Events:

- **Oct 2:** OCRACES monthly meeting, 840 N. Eckhoff St., Orange
- **Oct 4:** HDSCS meeting on Avian Flu
- **Oct 7:** City/County RACES Exercise
- **Oct 14:** OCFA Open House
- **Nov 6:** OCRACES monthly meeting
- **Nov 7:** General Election
- **Nov. 15-16:** EMS Drill



www.ocraces.org

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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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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It's Where It's @!

Questions or Comments?
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**“W6KRW ...
Serving
Orange County”**

Meet your County of Orange RACES Members!



Ken Bourne W6HK Scott Byington KC6MMF Harvey Packard KM6BV Joe Selikov KB6EID Ralph Sbragia W6CSP Marten Miller KF6ZLQ Robert Stoffel KD6DAQ



Jack Barth AB6VC Bill Borg KG6PEX Chuck Dolan KG6UJC Ernest Fierheller KG6LXT Nancee Graff N6ZRB Ray Grimes N8RG Bryan Hovde KD7CRA Walter Kroy KC6HAM



Martin LaRocque N6NTH John Roberts W6JOR Tony Sanchez AE6QT Steve Sobodos KN6UX Tom Stroud N6FDZ Tom Tracey KC6FIC