August 2004

NET CONTROL

Newsletter of the County of Orange Radio Amateur Civil Emergency Service

Captain's Corner
by Ray Grimes N8RG, Chief Radio Officer

The Next
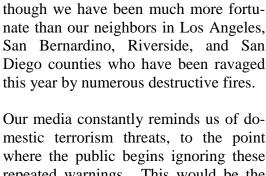OCRACES
Meeting is

August 2nd
1930 Hours

840 N. Eckhoff St.
Orange, CA

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

I hope you are enjoying a few quiet moments this summer. We in Orange County always face a threat of wildfire though we have been much more fortunate than our neighbors in Los Angeles, San Bernardino, Riverside, and San Diego counties who have been ravaged this year by numerous destructive fires.

Our media constantly reminds us of domestic terrorism threats, to the point where the public begins ignoring these repeated warnings. This would be the time to take such warnings seriously, for if we drop our guard we become most vulnerable. As OCRACES members and first responders, we need to remain ready and available. Check your radios, batteries, and duty bags at least monthly, and make sure that your pagers are receiving the weekly test pages.

I would like to thank RACES Program Coordinator Robert Stoffel, KD6DAQ and Assistant Radio Officer Scott Byington, KC6MMF for an outstanding OCRACES Emergency Communications Vehicle display and presentation at the IDEC meeting on July 22. Robert and Scott presented an overview of the entire vehicle project, answered questions and provided an "open house" so that IDEC members could tour the vehi-

cle and see it firsthand.

Scott and members of the Vehicle Committee continue to work on the vehicle, completing the last few items on our punch list. I would also like to thank Joe Saddler, WA6PAZ and Steve Sobodos, KN6UX for their generous support of OCRACES in providing the antenna tuner and antennas to complete the Low Band Local Government radio installations in the OCRACES Vehicle.

August 2 is the next OCRACES general meeting. I will be on vacation that week but will see you at the September meeting. I am also attending the APCO International Conference in Montreal. This is a particularly important event in that a session is planned to discuss the FCC's recent approval of a modified Nextel Consensus Plan that promises to greatly reduce or eliminate 800 MHz public safety interference and will help to open the doors toward true public safety radio communications interoperability. And finally, one of the largest County exercises is coming September 15th and OCRACES has been asked to participate. See page 2 of this newsletter for all the details!

August 2nd OCRACES Meeting
Our August meeting will start at 1930 hours at 840 N. Eckhoff Street in Orange.

OCRACES REQUESTED FOR OA DRILL
By Jim Carter, WB6HAG

The Sheriff's Department has requested OCRACES assistance for a multi-disciplinary field exercise to be held on Wednesday, September 15, 2004. Two locations will be utilized for this exercise, the Orange County Fairgrounds and the OCSD Training Facility in Orange. The time will be approximately 0700 hours until 1600 Hours.

Requested services for this exercise will be ATV and SSTV. A total of 12 OCRACES members are required to support this major event which will have local, state and federal agency participation. This event will provide high visibility to our OCRACES capabilities and performance.

The RACES vehicle will be deployed for this exercise. All ATV and SSTV images will be transmitted to the vehicle, and then routed to various other command post vehicles at the fairgrounds.

OCRACES personnel will be needed for staffing the vheicle, operating ATV and SSTV equipment in the field, and assisting those communicators as they work in the field.

If you have wanted to learn ATV or SSTV operations, now is the time! I need two members who would like to take an SSTV camera and send video using their HT. Training will be provided.

I am still looking for additional volunteers for this assignment. Please contact me at jimcarterocraces@sbcglobal.net with your interest no later than August 1, 2004. This is one event you won't want to miss!

RACES INTEROPERABILITY
By Ray Grimes, N8RG

An interesting article caught my attention recently that appeared on the Internet, written by a United Press International (UPI) staff writer. This article states that on September 11, 2001 major vulnerabilities were exposed in U.S. communications systems where first responders could not communicate due to incompatible radio systems and cellular telephone networks being down.

Rep. Christopher Shays-R.-Conn., Chairman of the National Security, Emerging Threats and International Relations Subcommittee of the House Government Reform Committee, stated at a hearing recently that "Almost three years later, the critical communications networks first responders bank on every day to save lives remain fragmented and vulnerable". This hearing was called to look at the problems in government planning and the barriers created by incompatible communications equipment among emergency safety agencies. This news report goes on to say that there are more than 2.5 million first responders-police officers, fire fighters, emergency medical personnel, public-health officials and others, with more than 50,000 public safety agencies nationwide, according to the Wireless Public Safety Interoperable Communications Program that is housed within the Department of Homeland Security. Of significance is the fact that volunteers constitute 85% of fire personnel, and nearly as many emergency management technicians are volunteers with elected leadership. An array of technologies, equipment types and radio spectrum are used by various agencies, making communications between agencies difficult during times of crisis.

RACES INTEROPERABILITY
Continued from Page 2

The reasons that mutual aid communications have not evolved since September 11 are those of money, and lack of an overall national public safety mutual aid telecommunications plan. Though the FCC has designated 700 MHz for mutual aid public safety emergency communications, this band may not be available until after 2008, and the money required to purchase 700 MHz capable radio equipment simply isn't there. Large cities and counties must somehow plan to set aside funds to purchase new 700 MHz compatible radio equipment and to secure the required FCC radio licenses.

Small cities and counties, particularly those in rural areas, do not have the revenue to invest in costly new radio systems, nor do their needs go much beyond what they now operate, such as Low Band, VHF, or UHF simplex and basic repeater systems. For the most part, these rural cities and counties have very little need to be interoperable with distant large cities, unless state or federal direction and funding makes it possible and necessary.

John Muleta, the FCC's Chief of the Wireless Telecommunications Bureau states that the problem of interoperability is not just one of compatible technology, but a bigger issue in that there is a lack of planning. Most all of the these government experts say the same thing, that the fundamental barrier to interoperable public safety communications has been a lack of effective, collaborative, interdisciplinary and intergovernmental cooperation and planning. William Jenkins, Jr., the Director of Homeland Security and Justice at the Government Accountability Office said it best when he commented that "this is a classic example of how everybody's in charge and therefore nobody is".

The consensus seems to be that there is no clear plan for interoperability, with no timeline, and certainly no funding to speak of. The Department of

Homeland Security recently created the Office of Interoperability and Compatibility which should be operational by November of this year. That implies that it we are a year or more away from an interoperability plan, and it's anybody's guess when and where funding would come from.

I would like to take these thoughts a little further. While we clearly have interoperable public safety communications challenges, we also have some excellent resources such as amateur radio. Even the best city and county public safety radio networks only provide optimal coverage for their primary areas of operation, and rarely include communications links for high capacity inter-county or statewide telecommunications. RACES units across the nation have the resources and technical expertise to supplement vital public safety disaster communications, and with little or no cost to the public.

There are also commercial cross-band patch solutions for public safety that allow different radio system technologies to operate together, though throughput is usually limited to one conversation at a time per link. The success of these unique and readily available solutions require technically expert people that can setup the right solutions, providing training for end-users, and minimizing radio interference between radio systems.

That pool of technical expertise and know-how comes from the radio amateur community, and in particular, from RACES units that are already government affiliated and staffed by certified disaster service workers.

ANTENNA MAGIC
by John Roberts W6JOR

Most of our readers and other local RACES organizations know that County of Orange RACES completed a year long project to design, manufacture, assemble, and construct an emergency communications vehicle out of a surplus County vehicle.

One of the operational requirements that was identified in the selection of radios, antennas, and accessories was to be able to communicate with the Red Cross, Water Districts, and Public Safety on the VHF Low band spectrum. The range is roughly from 36 MHz to 49 MHz. Most communications in this band uses the common spring and ball mount with a 56 to 96 inch stainless steel whip to cover a range of band width of 1 MHz or less before a different length of whip is required to keep the SWR (reflected power from the antenna) under 10%.

The other very common practice is to use base loading coils with 36 to 49 inch stainless steel whips configured into the famous "NMO" mount style found in most Ham radio antenna styles. The problem with these coil loaded antennas is that their bandwidth is usually too small (2 to 3 MHz) to cover our operational need of nearly 12 MHz! To overcome this difficulty we chose an arrangement using two baseloaded NMO style whip antennas and a coaxial switch to select either antenna "A" or "B" (this places a requirement that the operator must select the proper antenna for the Agency to be contacted).

We continued our searches for solutions for a wideband physically small antenna with some interesting and amazing candidates.   One candidate was a half folded dipole that would cover 9 MHz of bandwidth but was 70 inches tall. This exceeds the USDOT that all vehicles be under 13'6" tall! The next candidate was a pudgey fattened half dipole that would have been 60 inches by 20 inches by 7.5 inches, again too tall and

it would have looked like we installed the tail section of a Cessna 150 on the roof of the Van!   The current model under consideration was found in the ARRL antenna handbook as a "DDRR" antenna. It looks like a 22 inch in diameter loop suspended 2 inches above the ground plane roof (see photos).

One of the recent decisions by the Vehicle Committee was to use a VHF antenna tuner (SGC Company) and a 55 inch stainless steel whip on a spring and ball mount … back to basics!

FCC ADOPTS SOLUTION TO INTERFERENCE FACED BY 800 MHz PUBLIC SAFETY RADIO SYSTEMS

For some time now, Public Safety users have been talking about the 800 MHz interference problem caused by cellular tower sites. More recently a lot of discussion has focused on the "Consensus Plan" that was offered by Nextel. After much anticipation, on July 8th the Federal Communications Commission (FCC) adopted a plan to resolve the ongoing and growing problem of interference to Public Safety radio systems operating in the 800 MHz band. This article provides an unofficial announcement of the action taken. The FCC notes that release of the full text of a Commission order constitutes official action and it is expected that this text will not be released for several months.

In recognition of the critical need for the Nation's first responders to have robust and highly reliable communications systems, the FCC based its decision on meeting three essential goals: first and foremost, resolving the interference problem to public safety radio systems; second, ensuring equitable treatment of all of the affected spectrum licensees with minimal disruption to users and the public alike; and third, as the Commission is the federal agency charged with administering the spectrum for the public good, exercising sound principles of spectrum management. The decision was unanimous.

"The Commission-derived plan requires Nextel to relinquish spectrum and reband 800 MHz and relocate incumbents in 800 MHz and 1.9 GHz. Nextel must also complete the reconfiguration within three years and obtain a letter of credit to guarantee its completion for public safety licensees," said FCC Chairman Michael K. Powell.

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

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.

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RACES News from Around the County

News, Information, Special Events ...

CYPRESS RACES – Jill Gassler is now the City RACES program coordinator for Cypress RACES, replacing Denise Davis. Jill may be reached at (714) 229-6692. Welcome Jill!

LOS ALAMITOS & SEAL BEACH RACES – On July 14, 2004, the regular Los Alamitos / Seal Beach RACES meeting was conducted. "It was a good meeting," reported Tom Rothwell, K6ZT. The meeting was held at the Los Alamitos Police Department and the featured speaker was Sgt. Bruce McAlpine, the emergency preparedness leader for the City of Los Alamitos. He teaches homeland security issues to other law enforcement agencies throughout the County. His objective for this meeting was to make RACES members aware of the types of terrorist threats we may face, such as chemical, biological, radiological and explosive. He also explained how to recognize their type, and the protective or evasive measures that are best to take. It was very interesting, and lots of good questions were asked. "We very much appreciated that both Cassandra Frye, Los Alamitos RACES Coordinator and Sgt. Tim Olson, Seal Beach RACES Coordinator, were able to attend and participate" added Tom.

CITY & COUNTY RACES – The annual City/County RACES exercise is Saturday, October 2, 2004, from 0900 until 1100 hours. All City RACES organizations, as well as County RACES and the HDSCS are encouraged to participate using radio equipment from their city Emergency Operations Center (EOC). This is our one chance each year to exchange messages between the various city and County EOC's using the RACES radio equipment located inside your EOC. The focus of this exercise will be communicating by voice, primarily between your EOC and all surrounding city EOC's and secondarily, the County EOC. Those organizations that wish to test ATV and/or SSTV may also do so. The scenario will be a toxic release that has impacted all parts of the county. A secondary theme will be high winds. An exercise plan will be developed prior to the drill, and distributed to all participants via e-mail. At a minimum, the following messages shall be prepared in advance by each participating RACES organization: one message from City to County, three messages from City to a minimum of four adjacent Cities, and one message from City to HDSCS. The County EOC will provide one message to each participating RACES organization. The exercise plan will be distributed via e-mail in early September for review by all participants. The final plan will be distributed in late September. This is our largest annual countywide RACES exercise, thanks in advance for your participation!

"RACES News" provides an opportunity to share information from all City & County RACES organizations in Orange County.

Please send your news to:

OCRACES@ ocgov.com

August 2004

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2 *Meeting &* *Weekly Net*	3	4	5	6	7
8	9 *Weekly Net*	10	11	12	13	14
15	16 *Weekly Net*	17	18	19	20	21
22	23 *Weekly Net*	24	25	26	27	28
29	30 *Weekly Net*	31				

UPCOMING EVENTS:

- **August 2**: OCRACES monthly meeting, 840 N. Eckhoff Street, Orange, 1930 hours

- **September 13**: OCRACES monthly meeting, 840 N. Eckhoff Street, Orange, 1930 hours

- **September 15**: Operational Area Exercise, Orange County Fairgrounds, OCRACES activation

- **October 2**: Annual City/County RACES Exercise, 0900-1100 hours

- **October 4**: OCRACES monthly meeting, 840 N. Eckhoff Street, Orange, 1930 hours

FCC ADOPTS SOLUTION TO INTERFERENCE *CONTINUED FROM PAGE 4*

On July 8th the FCC adopted "Enhanced Best Practices" to address interference problems pending completion of the band reconfiguration process. The FCC rejected this as an exclusive remedy for the interference problem because the transactional costs of applying Enhanced Best Practices will continue to increase as new public safety and other non-cellular systems come on line and the commercial carriers using cellular-architecture increase the capacity of their systems by adding more cells. To accomplish the reconfiguration, the FCC will require Nextel to give up rights to certain of its licenses in the 800 MHz band and all of its licenses in the 700 MHz band. In exchange, the FCC will modify Nextel's licenses to provide the right to operate on two five-MHz blocks in a different part of the spectrum -- specifically 1910–1915 MHz and 1990-1995 MHz -- conditioned on Nextel fulfilling certain obligations specified in the FCC's decision.

The FCC recognized that, while it is essential to act promptly in light of the vital public safety interest served by this decision, the parties have raised novel issues regarding appropriations law, and the U.S. Comptroller General has agreed to review those issues. The FCC stated that, should the Comptroller General unambiguously conclude that the FCC's plan violates the appropriations statutes, the FCC will address – either on its own motion or on that of moving parties – whether it is appropriate to stay the effect of some aspects of the plan pending a final decision by the Court of Appeals on any application for review. "I know that some may say that the Commission moved too slowly to take this action. But I want to emphasize that the time has been very well spent. There simply is too much at stake to get this wrong," said Commissioner Jonathan S. Adelstein.

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[Visit Our Website
www.ocraces.org
It's Where It's @!]

Questions or Comments?
Contact the Net Control Editor
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County of Orange RACES History

The **Radio Amateur Civil Emergency Service** (**RACES**) was created in the early 1950's by the Federal government. On December 1, 1953, by resolution of the Orange County Board of Supervisors, the Orange County Communicators Club was authorized to become part of the *Orange County* Civil Defense. For the next 30 years, the **RACES** organization in Orange County was a group of Amateur Radio communicators that supported not only Orange County but also cities in the County during a time of emergency. In the mid-1980s, the cities in Orange County realized the benefits of Amateur Radio and began to form their own **RACES** organizations. Today, County of Orange **RACES** is recognized as one of the leading **RACES** organizations in the state. Our **RACES** program is administered by *OCSD/Communications* under the leadership of Emer-

gency Communications Coordinator Robert Stoffel, KD6DAQ, and Chief Radio Officer Ray Grimes, N8RG. Our volunteers provide disaster, emergency and special event communications support to *Orange County* Public Safety agencies, and meet monthly for training and special activities. **RACES** supports the County by using various modes of Amateur Radio communications including voice, Morse Code, amateur satellite, amateur television, slow-scan television and various digital modes. County of Orange **RACES** has a dedicated radio room at the Operational Area Emergency Operations Center (EOC) and an emergency response communications vehicle that provides both Amateur Radio and Public Safety communications support at any emergency, disaster or special event location.

"W6KRW …
Serving
Orange County"

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