June 2009

The Next OCRACES Meeting is

June 1, 2009
1930 Hours

840 N. Eckhoff St., Suite 104, Orange

Featured Topic:
Field Day

Orange County Sheriff's Department
Communications & Technology Division

County of Orange RACES

NetControl

Newsletter of the County of Orange Radio Amateur Civil Emergency Service

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

Nukes Disrupt Communications

On May 25, 2009, North Korea exploded an atomic weapon about the size of the atomic bomb dropped on Hiroshima in 1945. Meanwhile, Iran is reportedly working on their nuclear weapons program (possibly with the assistance of the North Koreans), and the Taliban (and maybe Al-Qaeda) are threatening to take over nuclear-armed Pakistan. What if one of these nuclear weapons were to reach our area, either by missile or smuggled by container to U.S.-based terrorists, and be detonated? Could it have a devastating effect on our communications capabilities (let alone our bodies!)?

Upon detonation, the horrible effects would include the blast itself, a thermal pulse, neutrons, x-rays, gamma-rays, radiation, electromagnetic pulse (EMP), and ionization of the upper atmosphere (ionosphere). As radio amateurs, we are hoping for sun spots to affect the ionosphere to cause long-distance communications, but we certainly don't want such conditions to be caused by a nuclear blast!

A tremendous amount of energy is liberated per unit mass in a nuclear detonation. Temperatures of several tens of million degrees are produced in the detonation area., vaporizing the nonfissioned parts of the nuclear weapon. The atoms do not release kinetic energy but, rather, release large amounts of electromagnetic radiation. In an atmospheric detonation,

1945 atomic explosion at Hiroshima

this electromagnetic radiation, which is mostly soft x-ray, is absorbed within a few feet by the atmosphere, heating it to extremely high temperatures and forming a fireball of air and gaseous weapon residues. Within a millisecond after detonation of a 1-megaton air burst, the diameter of the fireball is 500 feet. This increases to a maximum of 7,200 feet within 10 seconds, while the fireball is rising at 330 feet per second. The rapid expansion severely compresses the sur-

Captain's Corner *Continued from page 1*

rounding atmosphere, producing a powerful blast wave.

An air burst occurs at an altitude below 100,000 feet, but high enough so that the fireball does not contact the earth's surface. This blast causes much damage and injury. Initial radiation will be a significant hazard with smaller weapons, but fallout will be minimal. Air bursts are most effective against ground forces.

A surface burst, which is likely to be produced by a terrorist's smuggled weapon, affects a smaller area than an air burst, regarding blast, thermal radiation, and initial nuclear radiation, while destruction is concentrated at ground zero.

A high-altitude burst, above 100,000 feet, can have a devastating effect on communications and electronic equipment (except the old tube stuff—so save your classic radios!). The detonation generates soft x-rays that dissipate energy as heat in a much larger volume of air molecules. The fireball is much larger and expands much more rapidly. The ionizing radiation travels for hundreds of miles before being absorbed. The ionosphere can be ionized significantly, disrupting communications. The burst can also generate an intense electromagnetic pulse (EMP) that would destroy solid-state electronic equipment, including our RACES radios.

A nuclear EMP consists of three components (E1, E2, and E3). The E1 pulse is very fast and has an intense electric field that can quickly induce very high voltages in electrical conductors, thus destroying computers and communications. It is produced by the gamma radiation from the detonation knocking electrons out of the atoms in the ionosphere (ionization).

The electrons travel downward at more than 90 percent of the speed of light, producing a large pulse of electrical current vertically in the ionosphere over the entire affected area. The Earth's magnetic field acts upon this current to produce a very large, but brief, EMP over the affected area. The E2 component is similar to the electromagnetic pulses produced by lightning, and is easier to protect against. The E3 pulse is very slow, lasting tens to hundreds of seconds, similar to a geomagnetic storm caused by a huge solar flare. It can produce geomagnetically induced currents in long electrical conductors, which can damage power-line transformers.

A nuclear EMP from a high-altitude burst can affect command, control, communications, computers, and intelligence. Satellite-to-satellite communications, satellite-to-aircraft links, or satellite-to-ground links could be disrupted, although many such links are "hardened" against an EMP. Hopefully, signals from GPS satellites and ground-based differential GPS transmitters will be usable shortly after a nuclear explosion, as well as traditional communications channels, only some of which are protected. An EMP can threaten military systems located a thousand miles away. It can disable communications systems and even power grids at significant distances from the burst. This type of threat could be used by North Korea, as it continues developing and testing missiles that they claim could eventually reach the West Coast of the United States. Even reaching the ionosphere west of California could cause us problems. Hopefully, our anti-ballistic-missile defense system will thwart such an attack.

Chuck Dolan, KG6UJC, Promoted to Sergeant

We are pleased to announce that Chuck Dolan, KG6UJC, has been promoted to RACES Sergeant (Assistant Radio Officer). Chuck is a valued OCRACES member, eagerly performing many tasks for our RACES unit and the Sheriff's Department. He sets a great example for us all to follow.

Chuck will be responsible for Operations (training and activation) for South Squad. We recently restructured our RACES unit into two squads, North and South. Each squad has two Sergeants, one for Technology, and the other for Operations. The Sergeants are responsible for training and activations in these two areas. The Technology Sergeant for South Squad is Jim Carter, WB6HAG. Jack Barth, AB6VC, is the North Squad Technology Sergeant, and Ernest Fierheller, KG6LXT, is the North Squad Operations Sergeant.

RACES Sgt. Chuck Dolan, KG6UJC

We are establishing an OCRACES Training Council, which will consist of the four Sergeants plus any other members who are interested. Tom Tracey, KC6FIC, has already offered many excellent training ideas to the Council.

Next OCRACES Meeting: June 1st

The next OCRACES meeting is on Monday, June 1, 2009, at 7:30 PM, at 840 N. Eckhoff Street, Suite 104, in Orange. At this meeting we will discuss our plans for Field Day on June 27th and 28th.

Field Day: June 27th and 28th

OCRACES will participate in Field Day on June 27-28, 2009, at Craig Regional Park, 3300 N. State College Boulevard, in Fullerton (near the border with Brea). RACES Lt. Ralph Sbragia, W6CSP, our Field Day Chairman, plans to use this event as an opportunity to practice using the NIMS/ICS forms and procedures.

We will be operating from the highest point in Craig Park. We plan to keep at least two operating stations on the air throughout the 24 hours of the event, utilizing the OCRACES emergency communications response vehicle (ECRV) and Ralph's communications trailer. We plan to study propagation effects and experiment with various antennas to achieve optimum communications.

This will be an opportunity to introduce amateur radio and our emergency communications capabilities to visitors in the park during this last weekend in June. All OCRACES members are requested to participate. Family members are also invited, especially for the pot-luck supper on Saturday evening.

Ralph is e-mailing Field Day plans to all members, and will discuss these plans in detail at the OCRACES meeting on June 1st (7:30 PM at 840 N. Eckhoff Street, Suite 104, Orange).

Next City/County/MOU Meeting: June 29th

The next City/County RACES/ACS & MOU meeting is on Monday, June 29, 2009, at 7:00 PM, at 840 N. Eckhoff Street, Suite 104, in Orange. Discussions will include plans for the City/County RACES & MOU drill on Saturday, October 3, 2009, with a scenario of civil unrest.

OCRACES at OC Fair: August 7th

OCRACES is sharing the ham radio booth at the Orange County Fair on the evening of Friday, August 7, 2009, with the new Santa Ana Response Team (SART) ACS unit. Booth duty is from 5:00 PM to 11:00 PM. This is an excellent opportunity to recruit ham visitors into RACES, to explain the role of amateur radio emergency communications to other visitors, and to introduce the excitement of amateur radio to the many kids who visit the ham radio booth, which will be in a new building this year. OCRACES members are urged to sign up for booth duty at this enjoyable event.

REST IN PEACE

With great sadness we report that Gloria Ann Fabian Stoffel, the beloved mother of OCSD Communications & Technology Division Director Robert Stoffel, KD6DAQ, died on May 22, 2009.

Mass of Christian Burial is May 29th at St. Mary's Church in Fullerton, followed by burial at Holy Sepulcher Cemetery in Orange.

Please keep Robert and his father, brothers, and sisters in your prayers.

RACES and HDSCS Serve Statewide Election

County and City RACES and Hospital Disaster Support Communications System (HDSCS) members activated on Tuesday evening, May 19, 2009, to support the Statewide Special Election. Net Control was at Control 2 in the OCSD Samantha II communications vehicle at the Vote Tally Center. The main priority for RACES communications from the Collection Centers was to advise Net Control of the precinct numbers of the JBC boxes loaded into a van, immediately after the van departed enroute to the Vote Tally Center. Operating Net Control were Tom Tracey, KC6FIC, on 2 meters and RACES Lt. Harvey Packard, KM6BV, on 440 MHz. Also at the Vote Tally Center were RACES Sgt. Jack Barth, AB6VC, RACES Lt. Scott Byington, KC6MMF, and RACES Sgt. Chuck Dolan, KG6UJC, helping with traffic control.

OCSD Reserve Sgt./RACES Sgt. Jim Carter, WB6HAG (left), and RACES Capt. Ken Bourne, W6HK, at the Tustin Collection Center; Jim provided ballot transportation security and Ken provided communications to the Vote Tally Center

Other OCRACES members operated from Collection Centers, including RACES Capt. Ken Bourne, W6HK, at Tustin, Nancee Graff, N6ZRB, at Laguna Woods, and Walter Kroy, KC6HAM, at Garden Grove.

This was the first election for the Santa Ana Response Team (SART), which recently became an ACS unit. Several of their members enthusiastically participated at their city's Collection Center, to receive training for future elections. They included Emergency Manager/Fire Department Capt. Steve Snyder, KI6EYQ, Sandra Lindsey, KG6ABN, Robert LaBarge, KI6HXF, Kathleen Nelson, K6IBH, Dennis Fink, KC6STF, and Armando Encalada, KG6UJJ.

SART member Austin Miller, KF6RVK, served at the Anaheim PD Collection Center. Anaheim RACES members Ken Pruzinski, K8CZB, and Debbie Heilman, KI6CUN, were also at that Collection Center. Other Anaheim RACES members, Tom Baldwin, KA6ZPY, and Bob Templeton, KI6CWA, served at the Canyon Hills Collection Center. At the Buena Park Collection Center was James Payne, KB6WUM. Costa Mesa RACES (MESAC) Chief Radio Officer Mike Oviatt, KE6IWM, was at the Collection Center in his city.

Fountain Valley RACES Assistant Radio Officer Glen Langer, W6GTL, served at his city's Collection Center. Fullerton RACES Radio Gene Thorpe, KB6CMO, was at the Fullerton Collection Center. Huntington Beach RACES Events Officer Steve Albert, KE6OCE, was at the HB Collection Center. At the Irvine Collection Center were IDEC members Joe Volpe, KI6QJD, and Candice Sheir, KI6CVT. Laguna Beach RACES Chief Radio Officer John Kountz, KE6GFF, served at the LB Collection Center.

Brea RACES Member Ken Mirabella, KM6YH, served at the La Habra Collection Center. Los Alamitos RACES Assistant Radio Officer Tom Rothwell, K6ZT, was at his city's Collection Center. City of Orange RACES (COAR) Chief Radio Officer Rich Helmick, KE6WWK, and Steve Carmichael, KI6DDE, served at the Orange Collection Center. Seal Beach RACES Assistant Radio Officer Mike Maronta, KC6YNQ, provided communications from the Rancho Santa Margarita Collection Center. Placentia RACES President John McCauley, KD6PGC, was at his city's Collection Center. Tri-Cities RACES Radio Officer Joe Lopez, W6BGR, communicated from the San Clemente Collection Center.

HDSCS member Ken Simpson, W6KOS, was at the Saddleback Collection Center. Westminster RACES members Dick Ingwerson, N6PFY, and Antonio Zelaya, AF6II, were at the Westminster Collection Center. Tri-Cities RACES Radio Officer Mike Morgan, KE6IBH, provided communications at the Laguna Niguel Collection Center. Laguna Hills ACS member Gary Bakirci, KI6DB, served at the Aliso Viejo Collection Center.

The entire operation was smooth and ended relatively early, partly due to this being a small election. The Orange County Sheriff's Department, Communications & Technology Division, deeply appreciates the efforts of the many RACES and HDSCS members who participated.

Watching The Web
Web Sites of Interest to RACES Personnel
by RACES Capt. Ken Bourne, W6HK, Chief Radio Officer

EcomScs Packet Radio E-Mail Client for Emergency Communications
http://www.qsl.net/kb2scs/ecomscs.html

EcomScs

This Web site provides free software (currently Version 0.2.5) called EcomScs, a packet-radio e-mail client program that runs on XP or Vista. Designed for emergency communications, it can also be used for day-to-day packet-radio e-mail. This complete RF-based e-mail client works like a typical Internet e-mail client. It uses any full-service packet BBS to transport e-mails. It may also be used with a Winlink or GateWayScs station.

EcomScs is able to send and receive attachments. It includes a fully integrated address book. It sends and receives e-mails with a one-button click. It will reply to and forward e-mails. Included is a macro list of user-supplied commands. Users can design and make their own forms. The file size of JPG, GIF, TIF, and BMP files can be reduced from inside the program. It can also be used as a packet radio terminal program.

The author of EcomScs has also released GateWayScs, an Internet gateway program that will send and receive e-mails from the Internet from RF. See http://www.qsl.net/kb2scs/gatewayscs.html for more information.

EcomScs also has formatted messages, similar to the ARRL NTS format. However, the ARRL message format does not allow punctuation. For example, says the author, the period character in an ARRL message would be changed to either an R or X or dot. The punctuation in EcomScs formatted messages does not count in the check field.

EcomScs requires Microsoft .NET Framework Version 2.0 or higher to work. The setup program does not make any changes to a PC. It can be uninstalled simply by deleting the C:\EcomScs directory.

AGWPE is not needed to use EcomScs, but it is another method to interface EcomScs with the outside world. With AGWPE, EcomScs can use a sound card instead of a TNC.

OCRACES Exhibits at Red Cross Training Day

OCRACES displayed its emergency communications response vehicle (ECRV) at the American Red Cross—Orange County Chapter May-Day emergency communications exercise and seminar on Saturday, May 2, 2009, in Santa Ana. OCRACES members participating in the event included Sgt. Jack Barth, AB6VC, Randy Benicky, N6PRL, Capt. Ken Bourne, W6HK, Lt. Scott Byington, KC6MMF, Sgt. Chuck Dolan, KG6UJC, Lt. Harvey Packard, KM6BV, John Roberts, W6JOR, and Tom Tracey, KC6FIC. Chuck drove the ECRV to the event early that morning, after spending a couple of days making it highly presentable. All members gave tours of the ECRV to the many visitors, and Scott gave a thorough presentation of its capabilities to a large group of onlookers. He also covered Winlink and other modes used by OCRACES. Jack brought his portable ATV system to the event and demonstrated its capabilities.

RACES Lt. Scott Byington, KC6MMF (left), describes the OCRACES emergency communications response vehicle to onlookers at the Red Cross May-Day communications training exercise and seminar

RACES/ACS News from Around the County

Fullerton

Fullerton Radio Club President Robert Doige, KI6KYW, reports in the May 2009 issue of *Smoke Signals* (the club's newsletter) that the club (which includes several Fullerton RACES members) provided communications on April 25, 2009, for the Donate Life Run/Walk at Cal State Fullerton. They handled routine event radio calls, including water station supply status, lead runner tracking, first-aid coordination for two event participants, a lost-child report, and radio communications for the key event coordinators. Robert says, "We even had an opportunity to chat with the Mayor of Fullerton about our radio communications role at Donate Life." Robert thanks Fullerton RACES Radio Officer Gene Thorpe, KB6CMO, and Cheryl Thorpe, KE6TZU, for their tireless planning and preparation.

Irvine

The city of Irvine will hold an Emergency Preparedness Expo on Saturday, June 6, 2009, from 9:00 AM to 2:00 PM, at the LDS Church, 23 Lake Road. The keynote speaker is Randall Bell on "The Master of Disaster."

Demos and workshops include:
- Cooking in a Disaster
- Emergency Car Kits
- First Aid Kits
- 72 Hour Kits
- Water Purification & Storage
- Child Safety
- Basic Food Storage & Canning
- Basic First Aid

Booths include:
- American Red Cross
- Be Ready Inc. Preparedness Supplies
- Ready Reserve Foods
- Daily Bread Foods
- S.O.S Survival Products
- Surf City Animal Response Team
- Medical Reserve Corps
- San Onofre Nuclear Generating Station

- Mariners Disaster Response
- Tzu Chi Foundation
- Islamic Relief
- Storehouse Food Storage & Canning

Irvine Police Department displays include:
- MobileComm—Emergency Communications Vehicle
- Crime Prevention—Child IDs & Fingerprinting
- CERT—Community Emergency Response Team
- IDEC—Irvine Disaster Emergency Communications (RACES)
- Police Explorers
- SWAT
- K-9

Orange County Fire Authority will also have a display:
- OCFA Rescue 6
- OCFA Safety Education Trailer
- OCFA Explorers

OCSD's Search & Rescue Reserve Unit will display one of its bloodhounds, sand buggy, Humvee, and command Suburban.

OCRACES will likely display its Emergency Communications Response Vehicle. Members are asked to sign up for the event.

Activities for kids include:
- Face Painting
- Fire & Earthquake Education
- Fingerprinting & IDs
- Fire & Police Vehicles
- Police & Rescue Dogs
- Games & Take Away Items
- Home Depot Kids Projects

Seal Beach/Los Alamitos

Seal Beach/Los Alamitos RACES Field Day will be held on Saturday, June 27, 2009, at the Seal Beach Police Station.

Seal Beach Radio Officer Alan Ginsburg, WA6TOI, and Assistant Radio Officer Mike Maronta, KC6YNQ, report that substantial progress has been made towards RACES securing its own repeater, a site, and a frequency.

June 2009

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1 OCRACES Meeting & Weekly ACS Net	*2*	*3*	*4*	*5*	*6 Irvine Emergency Prepared-ness Expo*
7	*8 Weekly ACS Net*	*9*	*10*	*11*	*12*	*13 RACES Breakfast*
14	*15 Weekly ACS Net*	*16*	*17*	*18*	*19*	*20*
21	*22 Weekly ACS Net & SWACS Freq. Test*	*23*	*24*	*25*	*26*	*27 Field Day*
28 Field Day	*29 County/ City Meeting & Weekly ACS Net*	*30*				

Upcoming Events:

- **Jun 1:** OCRACES Meeting, 1930, 840 N. Eckhoff St., Suite 104, Orange
- **Jun 6:** Irvine Emergency Preparedness Expo
- **Jun 13**: RACES/MOU Breakfast, Katella Grill, Orange, 0800
- **Jun 22:** SWACS Radio/ Frequency Test, 2015, OC EOC
- **Jun 27-28:** Field Day, Craig Regional Park, Fullerton
- **Jun 29:** City/County RACES/ ACS & MOU Meeting, 1900, 840 N. Eckhoff St., Suite 104, Orange
- **Aug 7:** Orange County Fair, OCRACES & SART at Ham

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

10 m: 29.640 MHz output, 29.540 MHz input, 107.2 Hz PL
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: 1282.025 MHz output, 1270.025 MHz input, 88.5 Hz PL

*Primary Net—Mondays, 1900 hours

Program Coordinator
Marten Miller, KF6ZLQ
(714) 704-7917

Chief Radio Officer (Captain)
Ken Bourne, W6HK
(714) 997-0073

Radio Officers (Lieutenant)
Scott Byington, KC6MMF
Harvey Packard, KM6BV
Ralph Sbragia, W6CSP

Assistant Radio Officers (Sergeant)
Jack Barth, AB6VC
Chuck Dolan, KG6UJC
Jim Carter, WB6HAG
Ernest Fierheller, KG6LXT

County of Orange RACES

OCSD/Communications
840 N. Eckhoff St., Suite 104
Orange, CA 92868-1021

Telephone – (714) 704-7917
Fax – (714) 704-7902
E-mail – ocraces@comm.ocgov.com

County of Orange RACES

OCSD/Communications
840 N. Eckhoff St., Suite 104
Orange, CA 92868-1021

Telephone – (714) 704-7917
Fax – (714) 704-7902
E-mail – ocraces@comm.ocgov.com

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

Questions or Comments?
Contact the *NetControl* Editor
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

Jack Barth
AB6VC

Jim Carter
WB6HAG

Chuck Dolan
KG6UJC

Ernest Fierheller
KG6LXT

Randy Benicky
N6PRL

Bill Borg
KG6PEX

Nancee Graff
N6ZRB

Ray Grimes
N8RG

Walter Kroy
KC6HAM

Martin La Rocque
N6NTH

John Roberts
W6JOR

Tony Sanchez
AE6QT

Joe Selikov
KB6EID

Steve Sobodos
KN6UX

Tom Stroud
N6FDZ

Tom Tracey
KC6FIC