December 2011


Newsletter of the County of Orange Radio Amateur Civil Emergency Service

Inside this issue:



**The Next OCRACES Meeting is**

**December 5, 2011**

**1830 Hours**

**Holiday Dinner at the Katella Grill**
**1325 West Katella Ave.**
**Orange**

**(No regular meeting in December)**

Orange County Sheriff's Department
Communications & Technology Division

# Captain's Corner

***by RACES Capt. Ken Bourne, W6HK, Chief Radio Officer***

## Prepare for Cyberwar

On Monday, November 7, 2011, Richard Clarke, a former top U.S. cybersecurity official and advisor to three presidents, said America's critical computer networks are so vulnerable to attack that it should deter U.S. leaders from going to war with other nations.

Along with several U.S. military and civilian experts, Clarke offered a dire assessment of America's cybersecurity at a conference, saying the U.S. simply cannot protect its critical networks.

Clarke said if he were advising President Obama, he would warn against attacking other countries because so many of them—including China, North Korea, Iran, and Russia—could retaliate by launching devastating cyberattacks that could destroy power grids, banking networks, or transportation systems.

He said the U.S. military is entirely dependent on computer systems and could end up in a future conflict in which troops trot out onto a battlefield "and nothing works."

Clarke, along with Gen. Keith Alexander, who heads the National Security Agency and the U.S. Cyber Command, said the U.S. needs to do a better job at eliminating network vulnerabilities and more aggressively seek out malware or viruses in American corporate, military, and government systems.

How vulnerable are your computers? Have you installed virus and malware protection? Even smartphones are vulnerable. Pentagon and other military and industrial computer systems have been accessed by hackers in China. How vulnerable are Southern California Edison computers? Or OCSD computers, including WebEOC? Has virus protection been installed on all the Winlink computers in Orange County?

Under a full-scale cyber attack, the U.S. is at substantial risk. If the nationwide Emergency Alert System is activated as a result, as was tested on November 9, 2011, would it even function because of computer-controlled networks having been attacked? Could the president effectively invoke his War Emergency Powers, shutting down amateur radio except for RACES? We might not even know if he does, because the dissemination of information is through computer-controlled networks!

We tout that our Winlink system will work even without the Internet. But have our Winlink computers already been infected with viruses out of China or North Korea or Iran or Russia?

Our power, transportation, and telecommunications infrastructure could fail during cyberwarfare. But our amateur radio equipment, if not controlled remotely over the Internet, will continue to function as long as we have a 12-volt source. Voice radios might be our only communications.

It's scary to think of a cyber attack by our country's enemies. I don't like to be a doomsday person, but after reading the comments from Clark and Gen. Alexander, I think we better beef up our planning for the day when we could be attacked by nations full of bad-guy computer geeks.

# OCRACES Activates for Red Flag Warning

County of Orange RACES activated at 8:00 AM Wednesday morning, November 2, 2011, due to a Red Flag warning with high temperatures and windy conditions. John Bedford, KF6PRN, acted as net control in the morning from his work location in Ontario, using his HT. Wayne Barringer, KB6UJW, of Volunteer Communications Network, assisted by providing information about fire, weather, and road conditions. OCSD Emergency Communications Manager Marten Miller, KF6ZLQ, assumed net-control duties in the afternoon. Chief Radio Officer Ken Bourne, W6HK, and Assistant Radio Officer Chuck Dolan, KG6UJC, patrolled Area 1 from 8:00 AM until about 1:00 PM, when they were relieved by Jim Dorris, KC6RFC, and Nancee Graff, N6ZRB. Ken and Chuck then headed to Area 2 and patrolled until about 2:30 PM. Randy Benicky, N6PRL, and Lee Anne Benicky, KI6VUH, patrolled Area 3 from early morning until about 11:30 AM. Status reports were received from Anaheim RACES, which was patrolling areas in Anaheim Hills and using their own repeater, and from OC Parks Fire Watch patrols.

Area 1 was quite windy. A fire broke out east of Valencia Avenue in Brea, near Carbon Canyon Regional Park. Ken and Chuck saw the smoke as they were returning from patrolling Carbon Canyon Road to the San Bernardino County line. Fire vehicles were already rolling to the incident. Ken and Chuck immediately drove west and northwest of the incident, including Tonner Canyon, to spot any new fires that might erupt as a result of wind-blown embers. Strong winds were currently blowing from the east.

The incident exemplified the need for net control to use a true dual-band radio that can monitor 2 meters and 440 MHz simultaneously, since the various patrols were using both the 2-meter repeater and 440 MHz repeater, depending on which gave better coverage in various areas.

# Are You Ready for 472-kHz Operations?

At their November 1-4, 2011, meeting, the WRC-2 Conference Preparatory Group, a committee of the European Conference of Postal and Telecommunications Administrations (CEPT), approved a draft proposal for a secondary amateur radio allocation between 472 and 480 kHz. Mind you, we are talking kilohertz, not megahertz! Transmitted power would be 5 W ERP. The proposal will be forwarded to the International Telecommunications Union, for consideration of including it in the 2012 World Radiocommunication Conference agenda.

If we get this new ham band, we will be the hit of our neighborhoods with our 472-kHz antennas. Since the length of a half-wave antenna in feet is 467 divided by the frequency in megahertz, a 472-kHz dipole would be "only" 989 feet long. Since it would be difficult to hang it at least a quarter wave (495 feet) high, you could put up a 495-foot quarter-wave vertical antenna, with quarter-wave radials on the ground. Guy wires are recommended. Don't forget to tell the FAA.

# SKYWARN Recognition Day: December 3rd

National Weather Service amateur radio stations will operate on SKYWARN Recognition Day (SRD), Saturday, December 3, 2011, from 0000 to 2400 UTC. The object is for all amateur stations to exchange QSO information with as many NWS stations as possible on 80, 40, 20, 15, 10, 6, and 2 meters, plus 70 centimeters. Contacts via repeaters are permitted. SRD celebrates the contribution to public safety made by amateur radio operators during threatening weather.

The contact exchange consists of call sign, signal report, QTH, and a one- or two-word description of the weather occurring at your site ("sunny," "partly cloudy," "windy," etc.). NWS stations will work various modes, including SSB, FM, AM, RTTY, CW, and PSK31. While working digital modes, special-event stations will append "NWS" to their call sign (e.g., N0A/NWS). During SRD operations a non-NWS volunteer should serve as a control operator for your station.

NWS will provide event information via the Internet. Event certificates may be requested from SKYWARN Recognition Day, 920 Armory Road, Goodland, KS 67735. Simply enclose a self-addressed stamped envelope with a list of NWS stations worked. The certificate size is 8.5 x 11 inches.

Separate stations will exchange QSL cards. See http://www.wrh.noaa.gov/mtr/hamradio/participating_offices.php for a list of addresses for sending QSL cards.

Questions concerning this event may be directed to Matthew Mehle, KCØTER, at matthew.mehle@noaa.gov.

# OCRACES Holiday Dinner: December 5th

The annual County of Orange RACES Holiday Dinner will be held at 6:30 PM on Monday, December 5, 2011, at the Katella Grill, 1325 W. Katella Avenue, in Orange. The restaurant's Solarium Room will be closed off for our exclusive use that evening. We will be able to order from the dinner menu on separate tabs, which will allow the option of adding a dessert or drink to your order. The menu may be viewed online before the dinner at http://www.katellafamilygrill.com/documents/main.pdf. If we all have our menu items selected ahead of time, it will expedite the process of placing our orders at the restaurant.

At this dinner we will celebrate another year of serving our agency in such activities as monthly meetings, SONGS training and exercises, training at the EOC on new equipment, Baker to Las Vegas Challenge Cup Relay, Rebuilding Together Orange County, Golden Guardian, Field Day, City/County RACES & MOU meetings and drills, van awning work party, antenna work party at Loma Ridge, power-outage activation, HAMCON, Irvine Preparedness Expo, Citizen Preparedness Exercise, OCFA Open House, Severe Fire Weather Patrols, SONGS ammonia leak activation, etc.

# Division Holiday Luncheon: December 7th

OCRACES members are invited to the OCSD Communications & Technology Division annual Holiday Luncheon on Wednesday, December 7, 2011, from 11:30 AM to 1:30 PM. The luncheon will take place in the Communications Service Bays, 840 N. Eckhoff Street, Suite 104, in Orange. If attending, please contact Angela Strehle by November 30th at (714) 704-7910 or angela.strehle@comm.ocgov.com.

# OCRACES Activates for SONGS Incident

County of Orange RACES members were paged to report on the 2-meter repeater at 1441 hours on Tuesday, November 1, 2011, due to an "HA3.1" alert at the San Onofre Nuclear Generating Station (SONGS). The Orange County EOC was activated to a Level 3 and OCSD/Emergency Management requested that RACES deploy members to the EOC on at least a 24-hour schedule. While OCSD Emergency Communications Manager Marten Miller, KF6ZLQ, was taking initial check-ins on the repeater, Chief Radio Officer Ken Bourne, W6HK, gathered supplies and drove to the EOC. After checking into the EOC Command Center and conferring with OCSD Communications & Technology Division Director Robert Stoffel, KD6DAQ, Bourne activated W6ACS in the RACES Room and gathered preliminary availability information from Miller, as well as from Radio Officers Harvey Packard, KM6BV, and Ralph Sbragia, W6CSP. Bourne scheduled Randy Benicky, N6PRL, to relieve him at 2000 hours. Assistant Radio Officer Chuck Dolan, KG6UJC, was to relieve Benicky at midnight. Brian Lettieri, KI6VPF, was to relieve Dolan at 0400 Wednesday morning. John Bedford, KF6PRN, was to relieve Lettieri at 0800. Jim Dorris, KF6RFC, was to relieve Bedford at noon, and would be relieved by Bourne at 1600 if the EOC was still activated. However, the SONGS alert was closed at 1747 hours on Tuesday, and no OCRACES members besides Bourne had to report to the EOC. Nevertheless, the willingness of these members to deploy, even during "0-Dark-30" hours, is appreciated.

Residents in San Clemente heard the SONGS sirens and, naturally, were alarmed. Sirens outside the SONGS plant were not sounded, however. The alert was caused by an ammonia leak in the steam system that drives the SONGS turbines. The ammonia was detected in a storage tank in the water purification system of SONGS Unit 3. The emergency alert was declared because ammonia fumes could prevent access to some areas of the plant. The alert was the second lowest of four federal classifications for emergencies at commercial nuclear power plants. SONGS employees near the leak area were evacuated as a precaution, but no radiation leaks were detected and no injuries were reported. The alert was canceled at 6:07 PM and evacuated workers were allowed to return. Approximately 25 gallons of leaked ammonia were collected in a basin underneath the tank, designed for that eventuality. The ammonia is used at SONGS to treat water that is converted to steam for running the turbines that produce electricity. The treated water also removes heat from the reactor's cooling system

# FCC Releases New Rules for 60 Meters

On November 18, 2011, the Federal Communications Commission released a *Report and Order (R&O)*, defining new rules for the 60-meter (5 MHz) band. These rules are in response to a *Petition for Rulemaking (PRM)* filed by the ARRL more than five years ago and a June 2010 *Notice of Proposed Rulemaking (NPRM)*. In the *R&O*, the FCC replaced one of the channels in the band, increased the maximum authorized power amateur stations may transmit in this band, and authorized amateur stations to transmit three additional emission designators in the five channels in the 5330.6-5406.4 kHz band (60 meters).

The Amateur Radio Service in the United States has a secondary allocation on 60 meters. Only those amateurs who hold General, Advanced, or Amateur Extra class licenses may operate on this band. Amateur stations must not cause harmful interference to—and must accept interference from—stations authorized by any administration in the fixed service, as well as mobile (except aeronautical mobile) stations authorized by the administrations of other countries.

The following is a summary of the changes. These changes are not yet effective. These new rules will take effect 30 days after they are published in the *Federal Register*.

- The frequency 5368.0 kHz (carrier frequency 5366.5 kHz) is withdrawn and a new frequency of 5358.5 kHz (carrier frequency 5357.0 kHz) is authorized.
- The effective radiated power limit in the 60-meter band is raised by 3 dB, from 50 W PEP to 100 W PEP, relative to a half-wave dipole. If another type of antenna is used, the station licensee must maintain a record of either the antenna manufacturer's data on the antenna gain or calculations of the antenna gain.
- Three additional emission types are authorized: **Data** (emission designator 2K80J2D; for example, PACTOR-III); RTTY (emission designator 60H0J2B; for example, PSK31); and **CW** (150HA1A, i.e., Morse telegraphy by means of on-off keying). For CW, the carrier frequency must be set to the center frequency. Amateur operators must ensure that their emissions do not occupy more than 2.8 kHz centered on each of the specified center frequencies. For data and RTTY, the requirement to transmit "only on the five center frequencies specified" may be met by using the same practice as on USB, i.e., by setting the suppressed carrier frequency of the USB transmitter used to generate the J2D or J2B emission to the carrier frequency that is 1.5 kHz below the center frequency.

| 60 Meter Band Frequencies (kHz) | |
|---|---|
| **Carrier** | **Center** |
| **5330.5** | **5332.0** |
| **5346.5** | **5348.0** |
| **5357.0** | **5358.5** |
| **5371.5** | **5373.0** |
| **5403.5** | **5405.0** |

Automatic control on data and RTTY is not permitted; a control operator must be in a position to exercise either local or remote control over the transmitter. The FCC noted that "amateur operators must exercise care to limit the length of transmissions so as to avoid causing harmful interference to Federal stations." This is a very important caveat: If a Federal station requires amateurs to cease using a frequency, the amateur station must be able to do so without delay.

A reasonable person might wonder what the difference is between data and RTTY. According to former ARRL Chief Technology Officer Paul Rinaldo, W4RI, there used to be a difference, but there's not much of one today. "Years ago, a B designator (telegraphy for automatic reception [i.e., narrow-band direct-printing telegraphy emissions]) meant decoding and display on a teletypewriter (TTY) or other mechanical machine," he explained. "A D designator signified transmission of data, telemetry, or telecommand intended for data processing or just storage for possible future use. When computers or computer-like devices were introduced to emulate RTTY transmission and/or reception, the line between telegraphy and data transmission blurred to the point of little or no practical distinction."

PACTOR-III and PSK31 are cited in the new rules as examples of data and RTTY emissions, respectively, that will be authorized; however, in paragraph 28 of the *R&O*, the Commission states that amateur stations will be permitted to use "any unspecified digital code, subject to the requirements of Section 97.309(b)." Therefore, as a practical matter it appears that any J2D data emission is to be permitted up to a bandwidth of 2.8 kHz, provided that care is exercised to limit the length of transmissions.

# Watching the Web

***Web Sites of Interest to RACES Personnel***

Stealth DDF2020 Direction Finder Kit
http://www.kn2c.us/radio-df-ddf2020t

# GLOBAL TSCM GROUP, INC.

A few issues of *NetControl* ago we promoted reestablishing OCRACES fox hunts, but this time making them cooperative hunts whereby hunters would compare bearings to locate the fox quickly. These would not be competitive hunts but, rather, would give us practice in locating interference to our repeaters or to public-safety frequencies. Furthermore, it would be lots of fun! The fox would hide on paved public property (allowing access by regular non-4-wheel-drive vehicles) or maybe in a parking lot near a restaurant where we could meet and grab a snack after finding the fox. Now a product is available that could make these fox hunts easy and enjoyable. It's described on the http://www.kn2c.us/radio-df-ddf2020t Web page as the Stealth DDF2020T Direction Finder kit from Global TSCM Group. It is a Doppler direction finder (DF) with a GPS input and RS-232 output to provide the ability to indicate its location and draw bearings automatically or manually on a Google Earth map to find the RF transmitter more conveniently.

The microcomputer/DSP Doppler DDF2020T DF features a numeric and 36-LED pelorus display. It is compatible with APRS software. It can be used with the "Navi2020" map-plotting display program (with the optional GPS receiver). It uses Google Earth viewer for displaying a plotting map. Operation is automatic or manual. It accepts standard $GPRMC, $GPGGA, and/or $GPVTG NMEA GPS data. Archive Navi files are automatically saved.

The GPS input allows a "moving map" Windows display. The RS-232 output can be used with a serial-to-USB convertor. The DDF2020T uses any type of FM 100 to 1000 MHz receiver or scanner with a wideband antenna design. It operates on 12 to 28 Vdc. The preassembled external antenna unit is designed for plug and play. (Receiver and antennas are not included. The user must also provide a PC or laptop.)

Scan rate is 430 Hz, with clockwise rotation (viewed from above the antennas). The antenna switch is a modified wideband Doppler DF antenna originally designed by Joe Moell, KØOV. The system employs Agilent HSMP3893 surface-mount (SMT) PIN diodes and an SMT/stripline circuit design. The output connector is BNC. The audio input uses FM receiver speaker audio, with a 1.0 kohm load, and 25 dB dynamic range. Output consists of an RS-232 Agrello DF message, 4800 baud, 8N2, at 15 messages per second. The DDF2020T antenna system includes four discrete HIGH outputs (one for each antenna) and one auxiliary antenna for improving sensitivity and accuracy. Also used is a four-section switched-capacitor voice filter, with 0.2 Hz bandwidth.

The Navi2020 "map plotting" program accepts DDF2020 DF + GPS messages and plots them on a Google Earth display window. Manual latitude/longitude and DF bearing inputs allow operation without a DDF2020 DF. Up to 100 plot points are allowed, and hunt results are saved in archive files.

Google Earth normally works with an open Internet link, but areas previously viewed are archived and available for offline viewing. This makes Navi2020 suitable for use in real-time mobile hunts, when an Internet link is not available.

Price: DDF2020T, $299; GPS receiver, $99.

**DDF2020T radio direction finder kit. Antennas are not included. GPS receiver is optional. User must provide VHF/UHF receiver and laptop or PC.**

# RACES/MOU News from Around the County

**"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**

## County of Orange RACES

Congratulations to OCRACES Member Brian Lettieri, KI6VPF, who passed his General Class exam. He has been enjoying 10 meters as a Technician (operating from 28.3 to 28.5 MHz), and now as a General he has access to the entire 10-meter band, and plans to operate on the other HF bands as well.

## Hospital Disaster Support Communications System (HDSCS)

The annual statewide medical disaster drill took place on Thursday, November 17, 2011. The scenario was contamination of water supplies resulting in a "do not use" order for city water. Thirteen Orange County hospitals requested HDSCS participation. Members deployed to them after those facilities used their telephone and paging procedures to activate HDSCS. One operator was also sent to provide communications from the emergency operations center of Orange County Health Care Agency. The HDSCS main net and some additional frequencies were kept busy with supply-related messages (resource requests) as the hospitals practiced how they would perform their housekeeping, sterilization, dialysis, dietary, and other critical functions if the order not to use city water had been real. Several of the hams were new to HDSCS and were paired with experienced members to help them learn procedures and message-handling techniques. Responding to hospitals and EMS were Louie DeArman, K6SM, Richard Deen, KI6HWY, Reid Green KF6LOK, Tom Hall, N6DGK, Bill Hegardt, K6WIL, Rebecca Katzen, KI6OEM, Roman Kamienski, KG6QXF, Pete Martinez, K2PTM, Jim McLaughlin, AB6UF, Justin Miller, KI6AFZ, Dale Petes, KI6ANS, Dave Reinhard, KJ6REP, Ken Simpson, W6KOS, Mike Turner, W4OPS, Alex Valdez, K9BLK, and Fred Wagner, KQ6Q. Primary Net Control and Drill Facilitator was April Moell, WA6OPS. Serving as alternate Net Control and outside base stations were Kim DeCelles, K9KIM, and Jackie Schaffer, WA6AKP.

**HDSCS Emergency Coordinator April Moell, WA6OPS, operates primary net control during November 17th medical disaster drill.**

## State of California ACS/RACES

Dave Larton, N6JQJ, has left his California Emergency Management Agency (Cal EMA) State ACS/RACES Training Officer position, and has been promoted to Chief Radio Officer, ACS/RACES, for the State of California, effective November 1, 2011.

# 'Tis the Season to Be Wary

Are you expecting delivery by UPS or FedEx of new amateur radio equipment this holiday season? According to McAfee's Gary Davis, "A common holiday phishing scam is a phony notice from UPS, saying you have a package and need to fill out an attached form to get it delivered. The form may ask for personal or financial details that will go straight into the hands of the cyberscammer....Banking phishing scams continue to be popular and the holiday season means consumers will be spending more money—and checking bank balances more often. From July to September of this year, McAfee Labs identified approximately 2,700 phishing URLs per day."

# December 2011

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|---|---|---|---|---|---|---|
| | | | | 1 | 2 | 3 SKYWARN Recognition Day |
| 4 | 5 OCRACES Holiday Dinner & Weekly ACS Net | 6 | 7 Comm's & Technology Division Luncheon | 8 | 9 | 10 EmComm Breakfast |
| 11 | 12 Weekly ACS Net | 13 | 14 | 15 | 16 | 17 |
| 18 | 19 Weekly ACS Net | 20 | 21 | 22 | 23 | 24 |
| 25 Merry Christmas | 26 Weekly ACS Net | 27 | 28 | 29 | 30 | 31 |

## Upcoming Events:

- **Dec 3:** SKYWARN Recognition Day, 0000Z-2400Z
- **Dec 5:** OCRACES Holiday Dinner, 1830, Katella Grill, 1325 W. Katella Avenue, Orange
- **Dec 7:** OCSD Communications & Technology Division Holiday Luncheon, 1130-1330, 840 N. Eckhoff Street, Orange
- **Dec 10:** EmComm Breakfast, 0900, Katella Grill, Orange
- **Dec 25:** Merry Christmas!
- **Jan 2:** OCRACES Meeting, 840 N. Eckhoff Street, Suite 104, Orange
- **Jan 14:** Southwest ACS Meeting, 0900, Cal EMA Southern Region, Los Alamitos
- **Jan 23:** City/County RACES & MOU Meeting, 1900, 840 N. Eckhoff Street, Suite 104, Orange


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 (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: 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 (Lieutenants)
Scott Byington, KC6MMF
Harvey Packard, KM6BV
Ralph Sbragia, W6CSP

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

**County of Orange RACES**

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# County of Orange RACES

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Questions or Comments?
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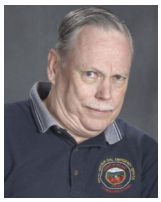
***"W6ACS ... Serving Orange County"***

## *Meet your County of Orange RACES Members!*



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Jack Barth
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Jim Carter
WB6HAG

Chuck Dolan
KG6UJC

Ernest Fierheller
KG6LXT

John Bedford
KF6PRN

Randy Benicky
N6PRL

Bill Borg
KG6PEX

Jim Dorris
KC6RFC

Nancee Graff
N6ZRB

Ray Grimes
N8RG

Walter Kroy
KC6HAM

Martin La Rocque
N6NTH

Brian Lettieri
KI6VPF

Kenan Reilly
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John Roberts
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Joe Selikov
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