March 2015

County of Orange RACES
NetControl

Newsletter of the County of Orange Radio Amateur Civil Emergency Service

The Next OCRACES Meeting Is

**March 2, 2015
1930 Hours**

840 N. Eckhoff Street, Suite 104, Orange

**Training Presentation
Tom Tracey, KC6FIC**

Orange County Sheriff's Department
Communications & Technology Division

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

Antenna Tuners

Antenna tuners are much more common at HF than at VHF or UHF, partly because VHF and UHF antennas are often factory-cut to a resonant length, whereas the larger HF antennas are often used on more than one ham band and, in some configurations, are not resonant on all bands.

Antenna tuners do not really tune antennas, but, rather, they transform the feed-line input impedance to the transceiver's impedance (typically 50 ohms). As a result, they change the standing-wave ratio (SWR) between the tuner and the transceiver (not between the tuner and the antenna). A multiband HF antenna system's impedance will vary from band to band. A broadband, resonant, 50-ohm antenna system on a particular band does not require an antenna tuner as long as the transceiver remains on that band.

The impedance of some antenna systems might be complex and beyond the range of some antenna tuners. If the tuner can adjust the impedance fairly close to that of the radio, the transceiver should be able to load its full RF output into the system, although there could be considerable loss between the tuner and the antenna. That's why low-loss coax is preferred, which is more expensive and of wider diameter. Ladder line is often used instead of coax to reduce loss, requiring a tuner with balanced input.

A simple antenna tuner typically consists of a tapped coil and two capacitors ("antenna" and "transmitter"), with a switch to select the coil taps. To begin tuning, with the transceiver in the receive mode, start with the capacitors at mid-range on the higher bands or maximum capacitance on the lower bands and switch the coil taps until you hear the loudest noise or strongest signals. Then adjust the capacitors for the maximum noise or receive signal level. Then, with your transceiver at low power (no more than 1 to 5 watts),

The MFJ-949E 300-watt antenna tuner covers 1.8 to 30 MHz. It includes a tapped inductor with switch and two variable capacitors, and tunes out SWR on dipoles, verticals, inverted V's, random wires, beams, etc., fed with coax, random wire, or balanced lines. It also includes a 4:1 balun. A three-position antenna switch selects two coax-fed antennas, random wire/balanced line, or built-in dummy load through the tuner or direct to the radio.
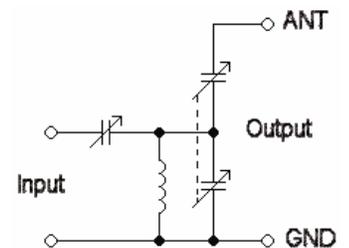
This series parallel capacitor (SPC) unbalanced-line tuner serves as an antenna coupler and as a preselector. The upper right capacitor matches the impedance to the antenna. The single capacitor on the left matches impedance to the transmitter. The coil (tapped or adjustable) and lower-right capacitor (ganged to the upper right capacitor) form a tank circuit that drains out-of-tune signals to ground. Schematic courtesy of *Wikipedia*.

Captain's Corner *Continued from page 1*

transmit a continuous carrier (after IDing) on a clear frequency and adjust your "antenna" and "transmitter" capacitors for lowest reflected power and highest output power on your SWR meter. It might be necessary to click the inductance switch to one or two positions away from where you started, to obtain the best match. Do not switch while transmitting, to avoid arcing the switch contacts. Minimum inductance with the maximum possible capacitance is an objective with a T-network tuner. The T-network has a much wider matching range than an L-network, while the L-network generally won't match loads that greatly increase network heating.

Obtaining a good match is usually easier with a tuner that uses a roller inductor instead of a tapped coil, for continuously variable inductance. Such tuners are a bit more expensive. Even at low power, keep your tuning as brief as possible, to avoid damage to your transceiver's final

The MFJ-986 differential-T antenna tuner uses ganged differential capacitors (one increases capacitance while the other decreases) and a roller inductor for fast two-knob tuning. It handles 1.5 kW output power over 1.8 to 30 MHz. Its six-position antenna switch selects two coax lines and/or random wires (direct or through the tuner), balanced line, and internal dummy load.

The LDG Electronics AT-200ProII automatic antenna tuner handles up to 200 watts SSB or CW on 1.8 to 30 MHz, and 100 watts on 54 MHz. Its processor-controlled switched-L tuner matches any coax-fed antenna, including yagis, dipoles, inverted V's, slopers, loops, etc. It typically matches a 10:1 SWR down to 1.5:1 in a few seconds. It can also be used with long wires, random wires, and antennas fed with ladder line, with an optional balun.

amplifier. After initial tuning, bring your transceiver's transmit output to full level, and tune again, this time *very* briefly to avoid damage. Be sure to use a tuner that is rated higher than the output of your transceiver or linear amplifier.

Instead of three adjustments, some manual tuners, referred to as differential-T tuners, have just two adjustment knobs, one for the roller inductor and the other for two ganged differential variable

The Palstar AT2K antenna tuner covers 160 to 6 meters with a power rating of 2000 watts PEP. A small roller inductor allows tuning on 6 meters, and 400-pF maximum capacitance provides low-band performance. It matches dipoles, center-fed doublets, verticals, end-fed wire, delta loops, beams, Windoms, and inverted V's. Included is a six-position antenna selector switch. An external 4:1 current

capacitors, with one capacitor increasing in value while the other decreases. This allows faster tuning, but the adjustment range is not quite as wide as that of a three-knob tuner.

Even faster tuning is achieved with an automatic antenna tuner, such as the LDG AT-200ProII, which we are using on our HF Winlink station at Loma Ridge. These tuners are provided with cables that interface to the transceiver's control circuits for frequency tracking. Our Elecraft K3 transceiver has a built-in automatic antenna tuner.

Some automatic tuners are placed right at the antenna, and sense the transmit signal's frequency. Those tuners do not require a control interface to the transceiver.
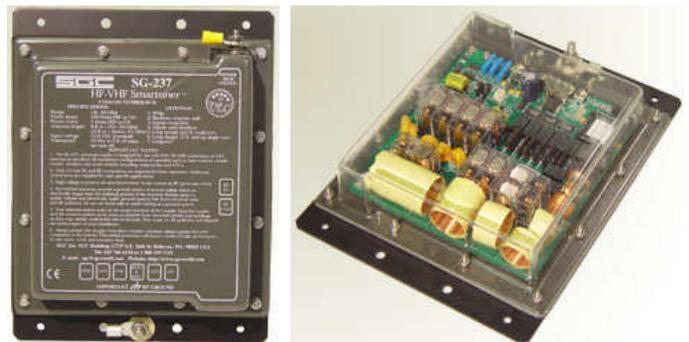
The SGC SG-237 "Smartuner" senses the frequency of RF applied to it and automatically tunes the antenna to minimum SWR. It does not require any special interface or balun. It can be mounted remotely at the antenna. Its four-layer PCB is mounted on a sturdy chassis plate, which provides an electrical and RF ground system. It is waterproof and the case is weather resistant. It has a 100-watt power rating and coverage from 1.8 to 60 MHz. It works with any balanced or unbalanced antenna, including whips, backstays, dipoles, loops, and long wires, and provides full coverage with only 28 feet of antenna.

Next OCRACES Meeting: March 2 at OCFA

The next OCRACES Meeting is on Monday, March 2, 2015, at 7:30 PM, at 840 N. Eckhoff Street, Suite 104, in Orange. OCRACES Training Sergeant Tom Tracey, KC6FIC, will give a presentation on radio operations, with basic concepts and hands-on practice. This will be an overview of being on assignment, using basic phonetics, and simulating typical communications traffic. Tom suggests that we all bring our handheld radios. As part of the training, he will ask us to turn our radios to a simplex frequency.

AB6VC Hides in Orange

OCRACES Assistant Radio Officer Jack Barth, AB6VC, was the fox on the cooperative T-hunt Monday night, February 9, 2015. He hid on the patio of LinX, where all hunters were treated to fantastic bratwurst sandwiches just west of the Orange Circle in Old Towne Orange. The event was arranged by OCSD Emergency Communications Manager Delia Kraft, KF6UYW, who greeted the hunters with a birthday cake from Villa Park's Rockwell Bakery, in celebration of Bob McFadden's, KK6CUS, 48th birthday. The hunt began with tones transmitted from Jack's fox box on the input of the OCRACES 2-meter repeater, immediately following the ACS net. Situated between two buildings on the restaurant's patio, the signal was blocked in some directions, and reflected around the area, making it a challenging and enjoyable hunt. Comparing bearings on the 449.100 MHz repeater made it even more enjoyable, while Jack observed (via APRS) the hunters driving around in circles. The first hunter to find the fox was "Birthday Bob," followed by Ron Allerdice, WA6CYY, from Costa Mesa. Next in was Ken Bourne, W6HK, from OCRACES. Teamed up with Ken was Roger Kepner, W6SQQ. Last to arrive, with a limping vehicle, was Patrick Williams, KJ6PFW, from MESAC. Because of car troubles, he was not planning to be on the hunt, but Delia talked him into it,

Enjoying the after-hunt birthday party at LinX in Old Towne Orange are (left to right) Ron Allerdice, WA6CYY, from Costa Mesa, Patrick Williams, KJ6PFW, from MESAC, OCSD Emergency Communications Manager Delia Kraft, KF6UYW, OCRACES Assistant Radio Officers Jack Barth, AB6VC (the fox), and Bob McFadden, KK6CUS ("Birthday Boy"), and Roger Kepner, W6SQQ, who hunted with OCRACES Chief Radio Officer Ken Bourne, W6HK (photographer).

knowing that he and the other hunters would enjoy the birthday bash at LinX. MESAC Chief Radio Officer Ted Bohrer, N7QY, who normally rides with Patrick and didn't think Patrick would be hunting, arranged that Ken would call him when Ken found the fox, to give him directions to the fox's den. When Ted arrived, he enjoyed the "party," especially conversing with Roger and Ron about "the good old days" of vacuum tube ham gear.

The next cooperative T-hunt will be held on Monday, March 9, 2015, immediately following the OCRACES net on the 146.895 MHz repeater. The fox will begin transmitting at approximately 7:20 PM on the input of the repeater (146.295 MHz). Hunters will compare bearings on the 449.100 MHz repeater, and are encouraged to beacon their positions via APRS throughout the hunt. The fox will hide in a sector of Orange County to be announced before the hunt.

The cooperative T-hunts provide excellent practice in working together to find the source of interference. The hunts are not official RACES events, so DSW (Disaster Service Worker) coverage does not apply. Please drive carefully!

Fox-hunt loops and beams are available from Arrow Antenna and HRO. A 4-MHz offset attenuator, also available from Arrow Antenna and HRO, can be useful when close to the fox, to prevent receiver overload. An all-mode transceiver is quite useful, allowing hunters to switch to the SSB or CW mode for detecting extremely weak signals, or to switch in a built-in attenuator or tune slightly off frequency when dealing with extremely strong signals. Some hunters use the DF2020T radio direction finder kit, which is a Doppler system available from Global TSCM Group, Inc. (http://www.kn2c.us). Other useful tools are the Foxhunt app for iPhones and the Triangulate app for Android phones. For some good information on T-hunting, see http://www.homingin.com/.

FCC & DHS Issue Bulletin on Signal Jammers

Our cooperative T-hunts give us good practice in locating interference (including jamming) on our 2-meter repeater and VHF high-band public-safety frequencies, but what about finding jammers who interfere with other frequencies? Eventually, we plan to expand our interference-locating capabilities to UHF, but jamming has become so prevalent, especially with Chinese-made jamming products, that the Federal Communications Commission (FCC) and Department of Homeland Security (DHS) have issued a joint bulletin on *Cellular, GPS, Wi-Fi, and Other Signal Jammers*. The following information is taken from that bulletin.

Signal jammers are illegal (even if used by law-enforcement agencies), and can interfere with operational channels used by first responders, disrupting vital communications or affecting emergency operations. There have been documented incidents of the loss of first-responder radio communications nears areas where cell and GPS jammers were being used. Loss of cellular coverage was also observed in these areas, which prevented 9-1-1 and other emergency calls from being made. Jammers can target cellular, GPS, Wi-Fi, and other radio signals, individually or in combination.

Indicators of Jamming:

Disruption or failure of wireless communications or mapping equipment, including cellular or GPS devices, for unknown reasons.

Specific Indicators Might Include:

♦ Inability to transmit or receive on two-way radios outside of known "dead zones."
♦ Unusual sounds on designated frequencies, such as white noise, intermittent electronic chirping, or tones.
♦ Lack of normal sounds heard on designated frequencies or presence of "dead air."
♦ Technical difficulties that appear and disappear intermittently.
♦ Lack of audible click when keying microphone.
♦ Abrupt loss of communications, especially if stationary.
♦ Loss of lock, intermittent disruption, or general failure.

Actions:

Incidents where a suspect operating a jammer is identified should be reported to the FCC at http://www.fcc.gov/complaints or 1-888-CALL-FCC (1-888-225-5332). The FCC will investigate and take follow-up administrative enforcement action against the subject where applicable.

Reports Should Include the Following:

For an ongoing incident of if a suspect is identified, provide:
♦ Identification details of suspect using illegal equipment (name, DOB, vehicle tag, etc.).
♦ Description or identification of suspected jamming device (including photo if available).

For all incidents, provide:
♦ Reporting party's name/contact information/agency, date, time, duration, location, and affected mission or operations.
♦ Nature of the disruption (such as single occurrence, recurring, intermittent, or loss of signal indication).
♦ Equipment affected (type, model, application).
♦ Environment conditions (weather, topography, terrain, time of day).
♦ Steps taken to improve or regain ability to use equipment.
♦ Other wireless devices not affected by the suspected jamming or anomaly.

Applicable Laws:

FCC Rules
♦ Section 2.803—prohibits the manufacture, importation, marketing, sale, or operation of these devices within the United States (47 C.F.R. § 2.803).
♦ Section 2.807—provides for certain limited exceptions, such as the sale to U.S. government for authorized, official use (47 C.F.R. § 2.807.

The Criminal Code (enforced by the Department of Justice)
♦ Title 18, Section 1362—prohibits willful or malicious interference to U.S. government communications; subjects the operator to possible fines, imprisonment, or both (18 U.S.C. § 1362).
♦ Title 18, Section 1367(a)—prohibits intentional or malicious interference to satellite communications; subjects the operator to possible fines, imprisonment, or both (18 U.S.C. § 1367(a).

Tom Tracey, KC6FIC, Gives Class at CERT Drill

OCRACES Training Sergeant Tom Tracey, KC6FIC, gave a class on Radio Operations at the Citizen Preparedness Exercise at Beckman High School in Irvine on January 31, 2015. The exercise was designed to review and evaluate the training, equipment, and organization of the Orange County Citizen Emergency Response Team (CERT) Mutual Aid Program (CMAP) members as they demonstrated their ability to support response operations following a simulated earthquake impacting Orange County. Tom's class covered using radios on assignment, phonetics, radio protocol, and live practice. He empha-

RACES Sgt. Tom Tracey, KC6FIC, speaks to CERT volunteers about Radio Operations at the January 31st Citizen Preparedness Exercise in Irvine.

sized the importance of knowing your radio's features, how to operate it properly, making contacts, and sending messages. He then conducted a live radio practice session. Tom will conduct similar training at the next OCRACES meeting on March 2nd at 840 N. Eckhoff Street, Suite 104, in Orange, and asks attendees to bring their HTs to the meeting.

Division Director Lists RACES Projects

In his inspirational article in the February 2015 edition of the *Communications & Technology Newsletter*, Division Director Robert Stoffel, KD6DAQ, listed the "Top 5" major projects by each Section and Unit, as he wanted everyone to "have a glimpse of the great things being planned as we start the new year." Planned items were listed for the Dispatch Systems Unit, Emergency Communications Section, Financial Support Unit, Information Systems Unit, Mobile Systems Unit, Program Support Section, Radio Microwave Unit, Sound Video Security Unit, and 800 MHz CCCS Next Generation. Under the Emergency Communications Section, three of the five listed items pertained to RACES:

♦ HF Winlink project at Eckhoff
♦ Develop Loma Ridge RACES Room user guide
♦ Create photo displays for the RACES Room at Loma Ridge

OCRACES is proud to serve the OCSD Communications & Technology Division, and we will strive to complete these and other projects well before the end of the year.

FCC "Paperless" License Policy Now in Effect

Starting February 17, 2015, the FCC no longer routinely issues paper license documents to Amateur Radio applicants and licensees. The Commission maintains that the official Amateur Radio license authorization is the electronic record that exists in its Universal Licensing System (ULS), although the FCC had routinely continued to print and mail hard copy licenses until the third week in February.

In mid-December, the FCC adopted final procedures to provide access to official electronic authorizations, as it had proposed in WT Docket 14-161 as part of its "process reform" initiatives. Under the new procedures, licensees will access their current official authorization ("Active" status only) via the ULS License Manager. The FCC will continue to provide paper license documents to all licensees who notify the Commission that they prefer to receive one. Licensees will also be able to print out an official authorization—as well as an unofficial "reference copy"—from the ULS License Manager.

"We find this electronic process will improve efficiency by simplifying access to official authorizations in ULS, shortening the time period between grant of an application and access to the official authorization, and reducing regulatory costs," the FCC Wireless Telecommunications Bureau (WTB) said. According to the WTB, the new procedures will save at least $304,000 a year, including staff expenses.

The ULS License Manager now permits licensees to change the default setting so that the Bureau will print and mail a license document.

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

Anaheim RACES

Anaheim RACES Program Coordinator Mary Jo Flynn, KI6OIY, Assistant Director, Emergency Management, Anaheim Fire & Rescue Department, has accepted a position with Sacramento County Office of Emergency Services as their Emergency Operations Coordinator, reporting to the Chief of Emergency Services. "MJ" said she will remain involved professionally with the California Emergency Services Association (CESA), the Virtual Social Media Working Group (VSMWG), and the International Association of Emergency Managers (IAEM), and that her teaching load with the National Disaster Preparedness Training Center (NDPTC) "may be reduced a little."

Buena Park RACES

Cpl. Bret Carter, Buena Park Police PIO, is now the City's RACES Program Coordinator.

Costa Mesa RACES (MESAC)

Costa Mesa Police Lt. Keith Davis is the City's RACES Program Manager. Ted Bohrer, N7QY, is MESAC's Chief Radio Officer, and Patrick Williams, KJ6PRF, is the Assistant Radio Officer, Operations.

Cypress RACES

Jennifer Baldwin, Cypress Police Department, is now the City's RACES Program Coordinator.

Fountain Valley RACES

Dick Bruno, N6ISY, is now the Fountain Valley RACES Chief Radio Officer.

Fullerton RACES

Battalion Chief Adam Loeser, Training/TLO/CERT, Fullerton Fire Department, is now the City's RACES Program Coordinator.

Irvine RACES (IDEC)

Irvine Police Sgt. Tom Goodbrand is now the City's RACES Program Coordinator.

Laguna Woods RACES

Ernie Senser, W6ETS, is now the Laguna Woods RACES Radio Officer. Art Welch, K7FA, and James Riedel, K6EEE, are the Assistant Radio Officers.

Newport Beach RACES

Newport Beach Sgt. Brandon Rodriguez is now the City's RACES Program Coordinator.

Cal State Fullerton RACES

Matt Braun, KK6FUE, and Dylan Sweaza, KK6NEI, are now the RACES Radio Officers at California State University, Fullerton.

Hospital Disaster Support Communications System (HDSCS)

At approximately 8:15 AM on February 3, 2015, HDSCS member Cheryl Simpson KD6MWZ, received a page from Western Medical Center in Santa Ana. Upon checking, she learned that a power failure had caused the hospital to switch to its emergency generators. Cheryl and her husband Ken Simpson, W6KOS, alerted HDSCS Coordinator April Moell, WA6OPS, and Ken prepared to depart for the hospital. April made contact with the hospital's Communications Supervisor, who requested that two communicators come to the hospital to stand by in case of communications problems during the power outage. She contacted Tom Hall, N6DGK, who began his response with Ken Simpson. A few minutes later, commercial power was restored. After consultation with the hospital's Incident Commander, the HDSCS operators' response was canceled.

Orange County SKYWARN

Orange County SKYWARN Coordinator Scott O'Donnell, WX6STO, is looking for spotter hams to help with OC SKYWARN since Mike McLaughlin, KJ6EQ, has moved out of state. Until Scott can contact, acquire, and train a new assistant coordinator(s), the OC SKYWARN net will be on hold for awhile. However, normal operations will not be affected if NWS San Diego activates OC SKYWARN. In the future, Scott is also considering having a few qualified OC SKYWARN members control the weekly net when it is restarted, and possibly moving the Tuesday night net to another day, due to conflicts with some RACES units that conduct their nets on Tuesdays.

March 2015

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2 *OCRACES Meeting* & *Weekly 2 m ACS Net*	3	4	5	6	7 *Weekly 40 m ACS Net*
8	9 *Weekly 2 m ACS Net* & *Cooperative T-Hunt*	10 *Messenger and Hotline Training*	11	12	13	14 *Weekly 40 m ACS Net*
15	16 *Weekly 2 m ACS Net*	17	18	19 *Logistics & Finance Training*	20	21 *Weekly 40 m ACS Net*
22	23 *All-Band ACS Nets* & *SWACS Radio Test*	24	25 *SONGS Emergency Plan Overview*	26	27	28 *Weekly 40 m ACS Net*
29	30 *Weekly 2 m ACS Net*	31				

Upcoming Events:

- **March 2:** OCRACES Meeting, 840 N. Eckhoff Street, Suite 104, Orange, 1930
- **March 9:** Cooperative T-Hunt, 1920
- **March 10:** Messenger and Hotline Training, OC EOC, 1330-1530
- **March 19:** EOC Logistics & Finance Section Training, OC EOC, 1000-1200
- **March 23:** Southwest ACS Frequency/Radio Test, OC EOC, 2015
- **March 25:** San Onofre Nuclear Generating Station (SONGS) Emergency Plan Overview, OC EOC, 1330-1530
- **May 2:** City/County RACES & MOU Drill, 0900-1100
- **May 18:** City/County RACES & MOU Meeting, 840 N. Eckhoff Street, Suite 104, Orange
- **June 27-28:** Field Day

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

40 m: 7250 kHz SSB (City/County/MOU Net—Saturdays, 1000 hours)
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: 1287.650 MHz, 1287.675 MHz, 1287.700 MHz, 1287.725 MHz, 1287.750 MHz, and 1287.775 MHz outputs, –12 MHz inputs, 88.5 Hz PL

*Primary Net—Mondays, 1900 hours

RACES Program Manager
Delia Kraft, KF6UYW
714-704-7979

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
Ernest Fierheller, KG6LXT
Bob McFadden, KK6CUS
Tom Tracey, KC6FIC

County of Orange RACES

OCSD/Communications & Technology
840 N. Eckhoff St., Suite 104, Orange, CA 92868-1021
Telephone: 714-704-7979 ● Fax: 714-704-7902
E-mail: ocraces@comm.ocgov.com

County of Orange RACES

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

Telephone – 714-704-7979
Fax – 714-704-7902
E-mail – ocraces@comm.ocgov.com

**Visit Our Web Site
http://www.ocraces.org
It's Where It's @!**

Questions or Comments?
Contact *NetControl* Editor Ken Bourne, W6HK
w6hk@ocraces.org

*"W6ACS ...
Serving
Orange County"*

Meet your County of Orange RACES Members!

Robert Stoffel KD6DAQ	**Delia Kraft** KF6UYW	**Ken Bourne** W6HK	**Scott Byington** KC6MMF	**Harvey Packard** KM6BV	**Ralph Sbragia** W6CSP
Jack Barth AB6VC	**Jim Dorris** KC6RFC	**Ernest Fierheller** KG6LXT	**Bob McFadden** KK6CUS	**Tom Tracey** KC6FIC	**John Bedford** KF6PRN	**Randy Benicky** N6PRL
Bill Borg KG6PEX	**Nancee Graff** N6ZRB	**Ray Grimes** N8RG	**Walter Kroy** KC6HAM	**Martin La Rocque** N6NTH	**Fran Needham** KJ6UJS	**Kenan Reilly** KR6J
Tom Riley K6TPR	**John Roberts** W6JOR	**Joe Selikov** KB6EID	**Ken Tucker** WF6F	**Brian Turner** KI6WZS	**Tom Wright** KJ6SPE	**Jeff Yost** KE7EWG