

April 2013



Newsletter of the County of Orange Radio Amateur Civil Emergency Service

Inside this issue:

Captain's Corner	1
OCSD Book Photos	2
OCRACES Meeting	3
New DSW Form	3
Baker to Vegas	3
EM Division	3
New ARRL Book	4
Watching the Web	5
Sue Mickelson	5
FCC TDMA Waiver	6

Captain's Corner

by RACES Captain Ken Bourne, W6HK, Chief Radio Officer

Microcontrollers for Hams

Microcontrollers and miniature computers are becoming increasingly popular in amateur radio projects, and some applications are even applicable to RACES requirements. As mentioned on page 3 of this issue, Huntington Beach RACES Member Bill Prats, K6ACJ, will launch us into this fascinating world of microcontrollers at the April 1st OCRACES meeting, as he talks about his projects described in ARRL's new book, *Ham Radio for Arduino and PICAXE*.

Arduino is a single-board microcontroller that provides an open-source prototyping platform. See <http://www.arduino.cc> for more information.

The PICAXE system was originally designed as an educational system for schools, but now is finding many uses in amateur radio projects. A PICAXE chip is a standard Microchip PIC microcontroller that has been pre-programmed with the PICAXE bootstrap firmware code. The bootstrap code enables the PICAXE microcontroller to be re-programmed "in position" directly via a simple "three wire" download cable connection. This eliminates the need for an expensive conventional PIC programmer, making the whole download programming system a low-cost USB cable. The same software and download cable is used for all PICAXE chip sizes and project boards.

HamStack is a microcontroller platform based on the Microchip PIC architecture. It can be programmed in C or Basic.

Several option boards are available for quickly assembling your project. The *Getting Started* tutorial book includes ham radio examples. For more information, go to the Sierra Radio Systems Web site at <http://www.hamstack.com>.

The \$35 Raspberry Pi miniature Linux computer was developed in the UK for promoting the teaching of basic computer science in schools. It uses a Broadcom BCM system on a chip, including an ARM1176JZF-S 700-MHz processor. USB, Ethernet, and HDMI ports are featured. It has a built-in Midori Web browser. An SD card is used for booting and long-time storage. Its popularity has mushroomed, and is used in many amateur radio applications. Suggested applications include a simple APRS tactical display for event organizers, portable beacon station (that can also send telemetry information such as weather, location, pictures from Webcams, etc.), ultraportable Software Defined Radio, remote control system for controlling a ham station via the Internet, portable digipeater, etc. See <http://www.raspberrypi.org/> for more info.

The \$49 Cubieboard offers a 1-GHz ARM processor and 1 GB of RAM. It has a 1080p HDMI output. See <http://cubieboard.org/> for more information.

The \$40 Klustor UG802 computer with dual-core Cortex A9 1.2 GHz processor, 1 GB of RAM, and a Quad-core Mah 400 graphics processor runs the Android operating system. It includes 802.11b/g/n WiFi and HDMI, USB, and MicroSD card ports.

The Next
OCRACES
Meeting Is

April 1, 2013
1930 Hours

840 N. Eckhoff Street,
Suite 104, Orange

Featured Speaker:
Bill Prats, K6ACJ
Arduino and PICAXE



Orange County Sheriff's Department
Communications & Technology Division

Get Photographed for Commemorative Book

2014 marks the 125th anniversary of the Orange County Sheriff's Department. To commemorate this milestone, OCSD is producing a book featuring the men and women who have played a part in the Department's success. Along with a written history of the Department, this book will also contain hundreds of unique photos, stories from the past, highlights, and a timeline. Individual photos of current personnel, volunteers, and retirees will be included. OCRACES members are encouraged to participate. A professional photographer has already been capturing photos for inclusion in the commemorative anniversary book. If you have not already had your picture taken for the book, be sure to visit the photographer during one of the following remaining sessions:

April 1-5

Theo Lacy Facility, 501 The City Drive South, Orange Park in the lot behind Theo Lacy near the river bed and check in at the main lobby. Photos will be taken in the administrative conference room.

Monday, April 1, 2-7 PM
 Tuesday, April 2, 6-11 PM
 Wednesday, April 3, 8 AM-5 PM
 Thursday, April 4, 6-11 PM
 Friday, April 5, 2-7 PM

April 8-12

South Operations—Aliso Viejo sub-station, 11 Journey, Aliso Viejo Park in the parking lot and check in at the main lobby. Photos will be taken in the administrative conference room.

Monday, April 8, 6-11 PM
 Tuesday, April 9, 8 AM-5 PM
 Wednesday, April 10, 2-7 PM
 Thursday, April 11, 8 AM-5 PM
 Friday, April 12, 6-11 PM

April 15-19

South Operations—Aliso Viejo sub-station, 11 Journey, Aliso Viejo Park in the parking lot and check in at the main lobby. Photos will be taken in the administrative conference room.

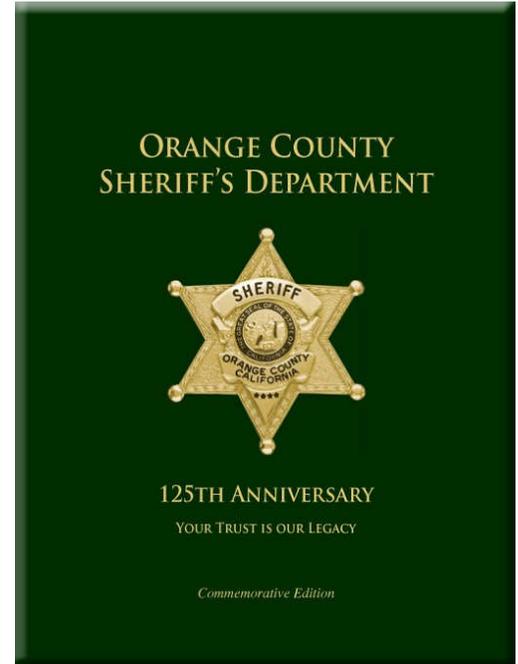
Monday, April 15, 2-7 PM
 Tuesday, April 16, 6-11 PM
 Wednesday, April 17, 8 AM-5 PM
 Thursday, April 18, 6-11 PM
 Friday, April 19, 2-7 PM

OCRACES members are to wear professional business attire for the photograph—no polo shirts or hats. The photo backdrop will be gray-blue with the American flag over the right shoulder.

You may order your copy of the 125th Anniversary OCSD Commemorative book online at <http://www.mtpublishing.com> or by telephone at 1-888-263-4702. The pre-order deadline is April 19, 2013. Book orders can be placed until May 31st, but orders received after April 19th will cost \$10 more. Presales are important as the number ordered determines the final page count of the book.

Only a limited number of books will be printed; therefore, it is necessary to take all orders in advance. The pre-publication price is \$54.95 for the standard (leatherette) edition or \$86.50 for the genuine bonded leather edition only until April 19th.

This large 9-inch × 12-inch coffee-table-edition book will have a deluxe hardbound cover and high-gloss, double-coated paper for superior photo reproduction. You may also have your copy personalized with a name stamping on the cover for a nominal charge (\$7.00 per book). A protective plastic book cover is available for \$3.00. Direct shipping/handling is \$6.50 for the first book and \$4.00 for each additional book. You may pick up your book at the Department for no cost, if you indicate "pickup" on your order.



(Final cover image subject to change.)

Next OCRACES Meeting: April 1st

The next County of Orange RACES meeting will be on Monday, February 4, 2013, at 7:30 PM, at OCSD Communications & Technology Division, 840 N. Eckhoff Street, Suite 104, in Orange. Our guest speaker will be Huntington Beach RACES Member Bill Prats, K6ACJ, who coauthored a new ARRL book, *Ham Radio for Arduino and PICAXE* (see article on page 4 of this issue of *NetControl*). Bill will talk about his and other microcontroller projects described in the book. All the projects in the book are very basic, are easy to program, apply to the ham station, and are inexpensive to build. Two lucky attendees will receive a copy of this new book at the meeting!

New DSW Form Must Be Submitted

All OCRACES members are requested to fill out the latest Disaster Service Worker (DSW) form that was e-mailed by OCSD Emergency Communications Manager Delia Kraft, KF6UYW, to the members. Bring the filled out form to the April 1st OCRACES meeting, or postal-mail it to Delia. It must be an original signed form, not a scanned copy. All members participating in Baker to Vegas are required to submit the form before April 10, 2013.

OCRACES To Support Baker to Vegas

OCRACES will support OCSD running teams with voice communications and location reports via APRS at the Baker to Las Vegas Challenge Cup Relay on April 13-14, 2013. Members will serve as communicators/drivers in follow vehicles and as catchers/communicators (communicating with the follow vehicle). They typically work a shift of five legs each. Members will also staff the communications command post in Pahrump. Lt. Ralph Sbragia, W6CSP, who is coordinating our participation, is looking for more members. He will give details at the April 1st OCRACES meeting.

Emergency Management Becomes a Division

On February 27, 2013, OCSD Undersheriff John Scott announced the interim promotion of Administrative Manager II Donna Boston to the position of Director of Emergency Management and the reorganization of the Emergency Management Bureau to the Division level. This new Division, led by Director Boston, will report to the Operations and Investigations Command.

“Over the past few years,” said Undersheriff Scott, “the growth and wide range of responsibilities managed by Donna Boston has placed her on par with that of a Director. Advances in technology involving programs such as AlertOC, WebEOC, and ReadyOC have placed Emergency Management at the forefront in promoting, facilitating, and supporting the County of Orange and the Operational Area efforts in disaster management. As the Emergency Manager for Orange County, it is through Donna Boston’s managerial oversight that the proper plans are in place, training exercises conducted, and experienced personnel are on hand to mitigate any threat to the Operational Area.”

Director Boston and the Emergency Management Division will continue to be located at the Loma Ridge Facility. The mission of the Emergency Management Division is as follows:

The Emergency Management Division leads, promotes, facilitates, and supports County and Operational Area efforts to mitigate, prepare for, respond to, and recover from disasters. Members of the Emergency Management Division respond to direction provided by the Orange County Emergency Management Council and the Operational Area Executive Board. Duties include planning, training, public education, and agency-specific training for fire, flood, earthquake, civil disturbance, tsunami, San Onofre Nuclear Generating Station (SONGS), and terrorism. The Emergency Management Division is responsible to respond and activate the County Emergency Operations Center during times of emergency.



OCSD Director of Emergency Management Donna Boston.

Charles Cooper Appointed LA FCC Director

Rebecca Dorch, Western Regional Director for the FCC's Enforcement Bureau, stated, "I am pleased to announce that Mr. Charles Cooper is joining the FCC Enforcement Bureau...and will be serving in the position of Director of the Los Angeles District Office. Prior to joining the FCC, Mr. Cooper has most recently been a Senior Engineer and Partner at the engineering consulting firm du Triel, Lundin & Rackley, where for 20 years he focused his engineering talents and expertise on communications issues and gained more than 13 years of management experience. He is a Registered Professional Engineer, a former member of the Mississippi Air National Guard and Reservist, and a Cum Laude graduate of Mississippi State University."

Cooper has performed and supervised many different types of communications projects, including those in all of the broadcast services (AM/FM/TV/DTV). He also has experience in wireless, point-to-point microwave, and land-mobile, so he is in an excellent position to move forward with a variety of tasks at the Los Angeles office.

He adds, "I am looking forward to making the transition to LA and working with the experienced LA enforcement team on resolving interference and enforcement issues. [It] will be a rewarding endeavor."

His official takeover date is Monday, April 1, 2013.

ARRL's *Ham Radio for Arduino and PICAXE*

Microcontroller technology has exploded in popularity among ham radio operators. The new generation of single-board microcontrollers is easier than ever to use, bringing together hardware and software for project-building most radio amateurs can easily dive into. With inexpensive microcontroller platforms—such as the popular open-source Arduino board—along with readily available parts, components, and accessory boards, the possibilities are limitless: beacon transmitters, keyers, antenna position control, RTTY and digital-mode decoders, waterfall displays, and more.

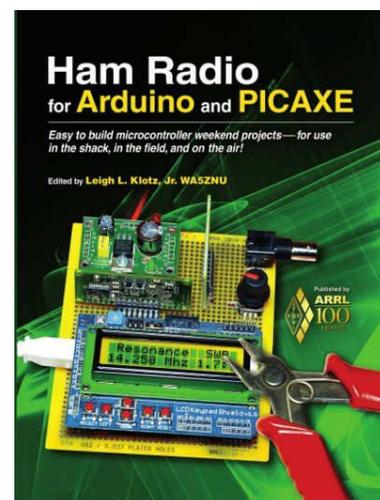
Editor Leigh L. Klotz, Jr, WA5ZNU, has assembled this first edition of *Ham Radio for Arduino and PICAXE*, published by the American Radio League, to help introduce you to the fun and rewards of experimenting with microcontrollers. Klotz and many other contributors (including Huntington Beach RACES Member Bill Prats, K6ACJ, who will talk about the book at the April 1st OCRACES meeting) have designed projects that will enhance your ham radio station and operating capabilities. Or, you can take it to the next step, using these projects as a launch pad for creating your own projects.

Projects:

- ◆ APRS Data Logger
- ◆ QRSS Beacon
- ◆ Multimode Transmitter Shield
- ◆ High Voltage, High Frequency, and High Temperature Data Logger
- ◆ Receive-Only, Low-Power APRS iGate
- ◆ PICAXE Keyer and CW Beacon Keyer
- ◆ Solar Tracker
- ◆ Nanokeyer
- ◆ Handheld Radio Talk Timer
- ◆ APRS Messenger
- ◆ DTMF Controlled SSTV Camera
- ◆ APRS Display
- ◆ Waterfall
- ◆ SWR Scanner

...and more projects using the Arduino, PICAXE, and ATtiny microcontrollers

The special ARRL member price is \$29.95 (regular \$34.95). It is a 352-page, softcover book, 8-3/16 × 10-7/8 inches. The first edition/first printing book became available in late February 2013. ISBN: 978-0-87259-324-4.



Watching the Web

Web Sites of Interest to RACES Personnel

Ready Rating

<http://www.readyrating.org/>



This Web site for “Ready Rating” is a free service from the American Red Cross. Ready Rating is a program that helps businesses, schools, and organizations become prepared for disasters and other emergencies. All in one place, Ready Rating members have access to one-of-a-kind tools, resources, and information for evaluating and improving their ability to withstand disaster, maintain operations, and protect lives and property. Whether you are taking your first steps or have a fully functioning emergency management program, the Ready Rating program can help you achieve a higher level of preparedness.

123 Assessment: Use the online self assessment to measure your organization’s level of preparedness.

Emergency Response Planner—Beta: Create customized emergency plans for your organization.

Ready Rating Store: Shop for preparedness equipment and supplies.

Resource Center: One-stop shop for preparedness information, checklists, and tools.

OCRACES Welcomes Sue Mickelson, KJ6LCJ

OCRACES is pleased to welcome Susan Mickelson, KC6LCJ, as its newest member. Sue is a General Class radio amateur, and is eager to begin serving in activations, drills, and events as an OCRACES member. Sue worked for McDonnell Douglas/Boeing for 29 years as a computer programmer/analyst. She became interested in amateur radio when her church offered a class in it about three years ago. She got her Technician Class license after she finished the class, and then acquired a Yaesu FT-60 hand-held transceiver. Sue finds the emergency aspect of amateur radio more to her liking than rag-chewing—hence the reason why she wanted to join OCRACES. She says she has been told by several people that she is a perpetual student. She loves to learn about new ideas and concepts and to keep her brain active. “OCRACES will definitely fill that bill, says Sue.



FCC Grants ARRL Request for TDMA Waiver

Acting upon an ARRL request, the FCC issued an *Order* (WT Docket No. 12-283) on March 25, 2013, granting a temporary waiver (pending the resolution of a related rulemaking proceeding—RM-11625) of Section 97.3(c)(5) and Section 97.307(f)(8) to transmit communications on amateur service channels above 30 MHz using single time-slot Time Division Multiple Access (TDMA) systems.

Amateur stations are currently authorized to transmit messages using telephony and data emissions. The ARRL noted in its request that Amateur Radio Service licensees have recently established numerous narrowband repeater facilities using multiple time-slot TDMA repeaters and single-slot TDMA handheld digital transceivers in the 70-cm (420-450 MHz) band, but Part 97 currently does not permit amateurs to transmit single-slot TDMA emissions above 30 MHz.

The FCC stated in its *Order* that the purpose of specifying emission designators for the Amateur Radio Service “is to relegate the transmission of certain inharmonious emission types to different segments of the frequency bands, while still allowing great flexibility in the types of emissions that may be transmitted by amateur stations.” The FCC agreed with the ARRL that the amateur digital systems are “compatible with existing amateur repeater channelization plans.”

The FCC also noted that allowing FXE and F7E as phone emissions and emission type FXD as a data emission “is unlikely to result in inharmonious emission types being used in the same segments of the frequency bands.”

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

Fullerton RACES

Fullerton RACES Radio Officer Gene Thorpe, KB6CMO, reminds us that April is Donate Life month. He said, "The Hostert family of Fullerton had experience in donating and being a recipient. Kathleen donated a kidney to her husband Craig. They decided they wanted to do something to give back to their community and get the word out about the need for donors to save lives of others who are awaiting the life-saving 'gift of life.' They decided to do a run/walk. It is an event that brings donors and recipients, families and friends, and runners and walkers with no direct connection to donation together for a day of stories that touch the heart, information on donation, and a chance to run or walk for a good cause.

"Please consider joining us at California State University Fullerton on April 27, 2013, for the 11th annual DonateLife Run/Walk & Family Festival. Members of the Fullerton Radio Club (along with additional hams from other clubs as needed) have provided communications along the route and to some of the committee members since the first run. Every year it grows (over 10,000 last year). This is a great public service event and a good way to practice your emergency radio skills. We are there to provide extra eyes and ears to help insure the safety of the participants."

Gene says they are in need of 30+ amateur radio operators to support this event. Please send your name, call sign, e-mail address, and phone number to Gene Thorpe, KB6CMO, via e-mail to kb6cmo@arrl.net. The event will run from 0700 to 1030 hours or so, with Family Festival afterwards.

Huntington Beach RACES

Huntington Beach RACES Member Bill Prats, K6ACJ, has co-authored a book, *Ham Radio for Arduino and PICAXE*, for the ARRL. It is a compendium of easy-to-build microcontroller projects for the ham station, portable, and mobile operators. For more information, see the article on page 4 of this issue of *NetControl*.



Huntington Beach RACES members supported HB Fire and PD at the 2013 Surf City Marathon early Sunday morning, February 3rd. With 20,000 runners, the 2-meter and 440-MHz nets were busy, especially with "runner down" and medical calls. Tracking and dispatching of the "SAG Wagons" was done with APRS.

Laguna Beach RACES

On March 2, 2013, Laguna Beach Emergency Communications Team (LBECT) provided communications support for 4½ hours for the 47th annual Laguna Beach Patriot's Day Parade. The team consisted of Elaine Merz, WA2NQB; Mick Donoff, KG6GRC; Bob Lawson, N6RW; Bob Dietrich, KN6BOB, and Arlene Schwartz, KE6GFI (who served as net control). John Kountz, WO1S, LBECT's Chief Radio Officer, served again this year as one of the two parade announcers. There were 99 entrants in the parade.

Laguna Niguel ACS

Laguna Niguel ACS changed the PL for its primary repeater on 445.100 MHz (-) to 100.0 Hz.

Hospital Disaster Support Communications System (HDSCS)

HDSCS Emergency Coordinator April Moell, WA6OPS, will speak at the monthly meeting of Associated Radio Amateurs of Long Beach on Friday, April 5, 2013. Her presentation, "Who Answers When the Phones Don't Ring," will cover the lessons learned during 33 years of experience supporting hospitals in Orange County. The meeting is in the Signal Hill Community Center, 1780 E. Hill Street, in Signal Hill, beginning at 7:00 PM.

April 2013

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1 <i>OCRACES Meeting & Weekly ACS Net</i>	2	3	4	5	6
7	8 <i>Weekly ACS Net</i>	9 <i>Basic EOC Responder Section Training</i>	10	11	12	13 <i>Baker to Las Vegas</i>
14 <i>Baker to Las Vegas</i>	15 <i>Weekly ACS Net</i>	16	17 <i>Advanced EOC Responder Section Training</i>	18	19	20
21	22 <i>Weekly ACS Net & SWACS Radio Test</i>	23	24	25 <i>Documentation and WebEOC Course</i>	26	27
28	29 <i>Weekly ACS Net</i>	30				

Upcoming Events:

- **Apr 1:** OCRACES Meeting, 1930, 840 N. Eckhoff Street, Suite 104, Orange
- **Apr 9:** Basic EOC Responder Section Training, 1000-1200, OC EOC
- **Apr 13-14:** Baker to Las Vegas Challenge Cup Relay
- **Apr 17:** Advanced EOC Responder Section Training, 1000-1200, OC EOC
- **Apr 22:** SWACS Frequency/Radio Test, 2015
- **Apr 25:** Documentation and Web-EOC Course, 1330-1530, OC EOC
- **May 4:** City/County RACES & MOU Drill, 0900-1100
- **May 11:** American Red Cross/Orange County MayDay
- **May 20:** City/County RACES & MOU Meeting, 1915, 840 N. Eckhoff Street, Suite 104, Orange
- **Jun 22-23:** Field Day, Craig Park



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: Off the air until reprogrammed to new coordinated frequencies
- *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
Chuck Dolan, KG6UJC
Jim Carter, WB6HAG
Ernest Fierheller, KG6LXT

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!



Ken Bourne
W6HK



Scott Byington
KC6MMF



Harvey Packard
KM6BV



Ralph Sbragia
W6CSP



Delia Kraft
KF6UYW



Marten Miller
KF6ZLQ



Robert Stoffel
KD6DAQ



Jack Barth
AB6VC



Jim Carter
WB6HAG



Chuck Dolan
KG6UJC



Ernest Fierheller
KG6LXT



John Bedford
KF6PRN



Randy Benicky
N6PRL



Bill Borg
KG6PEX



Jim Dorris
KC6RFC



Nancee Graff
N6ZRB



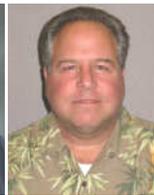
Ray Grimes
N8RG



Walter Kroy
KC6HAM



Martin La Rocque
N6NTH



Brian Lettieri
KI6VPF



Sue Mickelson
KJ6LCJ



Fran Needham
KI6UJS



Marty Oh
KJ6RWE



Tom Riley
K6TPR



John Roberts
W6JOR



Joe Selikov
KB6EID



Tom Tracey
KC6FIC



Brian Turner
KI6WZS