March 2012

County of **Orange** RACES

NetControl

Newsletter of the County of Orange Radio Amateur Civil Emergency Service

The Next OCRACES Meeting is

March 5, 2012
1930 Hours

840 N. Eckhoff Street,
Suite 104, Orange

Search-Mission Review
Baker to Vegas Plans
Field Day Plans

Orange County Sheriff's Department
Communications & Technology Division

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

Digital Mobile Radio (DMR)

In the January 2012 issue of *NetControl*, we mentioned that Yaesu was planning to introduce a C4FM (four-level FSK) FDMA (frequency division multiple access) HT and a mobile transceiver into the amateur radio market in early 2012. This is the technology used in radios designed for the APCO Project 25 (P25) standard (12.5-kHz wide channel with 9600-b/s transmission rate), intended for public-safety interoperability. However, P25 is not the only digital radio game in town, and Yaesu said it also plans to introduce a C4FM TDMA (time division multiple access) amateur HT and mobile transceiver sometime after introducing its FDMA radios. Perhaps their TDMA radios will be compatible with P25 Phase II (two 50-ms time slots in a 12-5-kHz wide channel, equivalent to two 6.25-kHz channels, with 12-kb/s transmission rate, if proven to work that way) or, more likely, with DMR (Digital Mobile Radio). What is DMR?

DMR is a European standard, and is now marketed by Motorola as MOTO-TRBO. It's starting to take hold in the United States, and, in fact, a local MOTO-TRBO ham repeater (W6TRW) is now on the air. DMR is not compatible with P25, although DMR and P25 Phase I users can switch to analog mode for interoperability. DMR digital features are comparable (not compatible) with P25, at less cost. I saw DMR radios offered by other manufacturers at the IWCE (International Wireless Communications Expo) in Las Vegas on February 22nd, including Hytera from China.

Besides P25 and DMR, another digital technology, NXDN, offers very narrow band (6.25-kHz FDMA) capability. Commercial NXDN radios are available from Kenwood and Icom.

Yet another digital technology, dPMR (digital private mobile radio) is available. It is Common Air Interface (CAI) for digital mobile communications. It is an open, non-proprietary European standard, similar to NXDN. Using four-level FSK, this FDMA system has a transmission rate of 4800 b/s in a 6.25-kHz-wide channel. Two 6.25-kHz dPMR signals can exist next to each other within a 12-5-kHz channel without interference.

DMR is a two-slot TDMA system in 12.5-kHz channels, with four-level FSK modulation and advanced forward error correction, offering voice, data, and other services. The DMR standard does not specify the vocoder, but DMR manufacturers have agreed to use the half-rate DVSI Advanced Multi-Band Excitation (AMBE) vocoder for interoperability. Tier III DMR covers trunking operation. It has built-in 128-character status messaging and short messaging with up to 288 bits of data in a several formats. It also supports packet data service in a variety of protocols, including IPv4 and IPv6.

Contrary to P25, DMR was not designed or intended for public-safety use. However, some agencies are using DMR as an inexpensive alternative to meet 12.5-kHz narrowbanding standards that are required by January 1, 2013.

OCRACES Assists SRRU and Other Agencies
by RACES Sgt. Chuck Dolan, KG6UJC

On Saturday, February 11, 2012, between 0530-0600, John Bedford, KF6PRN, Chuck Dolan, KG6UJC, and Kenan Reilly, KR6J, reported to the Orange County Sheriff's Training Academy for transportation to a search site in San Diego County to support the OCSD Search & Rescue Reserve Unit (SRRU) and other agencies. Kenan and I, being the first to arrive, were invited to share a ride with SRRU Reserve Deputy/Communications & Technology Division Assistant Director Joe Saddler, WA6PAZ, and SRRU PSR/OCRACES Member Jack Barth, AB6VC, in the Communications Division Vehicle assigned to Joe. John was transported in an SRRU van.

The purpose of the mission was to conduct a search for evidence relating to the disappearance of a Laguna Beach resident suspected of being murdered in 2010.

RACES Sgt. Chuck Dolan, KG6UJC, John Bedford, KF6PRN, and Kenan Reilly, KR6J (left to right) on Boundary Peak.

We departed shortly after 0600 and convoyed to the search site near the city of Boulevard, San Diego County. We arrived around 0900. The command post (CP) was located on Boundary Peak (elevation 3,921 feet) just a couple of miles north of the Mexican border. Weather conditions at the CP site were cold and windy with some rain showers. Temperature ranged from the high 30s to low 40s with winds probably in the 20+ mph range, with higher gusts all day long. None of us were properly dressed for these conditions.

Upon arrival we assisted, to the extent that we could, in setting up the operational area. The regular SRRU staff members are so adept at this, and worked so rapidly, that we pretty much had to stand aside and do things as we were asked. Our assignment was to handle radio traffic on 400 and 800 MHz (primarily ITAC-3) and to control the cache of hand-held radios (20) that were available for use by other participating agencies. John assumed responsibility for this valuable asset while Kenan and I handled the radio traffic. APRS was available in the SRRU Command Vehicle but we did not use it to track search teams.

Initially we thought that we would have to work out in the elements from the rear of the SRRU Command vehicle, but thankfully we were invited to use an operating position in the San Diego County SRRU Command vehicle. I don't know how well we would have performed in the wind and cold all day, but we were willing to give it a go. (THANK YOU San Diego SRRU!!!)

After the Operational Area was set up and all participants had arrived, a briefing was conducted by the Sheriff Homicide Investigators and OCSD SRRU Command Staff. Following the briefing, search-team assignments were made and teams dispatched to designated areas. This occurred soon after 1000.

Participants in this search effort included: OCSD SRRU (lead), SDSRRU, Homeland Security, U.S. Border Patrol, and Mountain Rescue. OCSD SRRU also provided a mounted unit, cadaver dogs, and a biker team. Fifteen teams made up of a combination of members from each of these groups scoured a large area of varying terrain looking for clues that might be associated to the victim.

The search lasted for about 6 hours. The last team returned to base at approximately 1600. During that time period we logged 87 radio calls and 15 clues, and tracked 17 teams afield. (Two teams were given multiple assignments.)

RACES Sgt. Chuck Dolan, KG6UJC (left photo) and Kenan Reilly, KR6J, communicating with search teams from Command Post.

At around 1630 all debriefings were complete and tear-down commenced. We departed the area shortly after 1700 and redeployed to the Training Academy where we arrived about 1900.

Under the circumstances and on short notice, I think we performed well and met SRRU expectations. If invited to future missions, I am certain that our go-bags will include a wider selection of clothing to accommodate whatever the elements offer. I suggest that if we become regulars with SRRU we should build individual go-bags identical to theirs.

A special thanks to John and Kenan for their participation. They conducted themselves in a very professional manner, which I am sure will bring kudos to OCRACES.

Next OCRACES Meeting: March 5th

The next County of Orange RACES meeting will be on Monday, March 5, 2012, at 7:30 PM, at 840 N. Eckhoff Street, Suite 104, in Orange. At this meeting we will review how OCRACES provided communications support to the OCSD Search & Rescue Reserve Unit and other agencies during a recent mission in San Diego County. We will also discuss plans for the Baker to Las Vegas Challenge Cup Relay and for Field Day.

Amateur Radio Gets Secondary MF Allocation

Delegates attending the 2012 World Radiocommunication Conference (WRC-12) have approved a new 7-kilohertz-wide secondary allocation between 472-479 kHz for the Amateur Radio Service. Agenda Item 1.23 had both its first and second readings in Plenary Session on Tuesday, February 14th. While the Final Acts were signed on Friday, February 17th at the close of the Conference, the new allocation will not take effect until it is entered into the Radio Regulations. No date has been set for this, but it is unlikely to be earlier than January 1, 2013. In any case, no amateur can use the band until his or her national regulations are revised to implement the allocation.

Agenda Item 1.23 originally called for a 15-kilohertz-wide spectrum in parts of the band 415-526.5 kHz, taking into account the need to protect existing services. The initial idea was 495-510 kHz, but according to ARRL Chief Executive Officer David Sumner, K1ZZ, this was in conflict with the Maritime Mobile Service. WRC-12 delegates approved Agenda Item 1.10, which called for a worldwide exclusive allocation to the Maritime Mobile Service of 495-505 kHz. Discussion of this allocation to Maritime Mobile "has been in the works throughout the conference preparation (i.e., since 2008)," Sumner explained, "and was the reason why the MF amateur allocation could not be made in this band as some amateurs had hoped. That's why we had to look elsewhere and is what put us in conflict with aeronautical radionavigation."

According to Colin Thomas, G3PSM, CEPT Coordinator for Agenda Item 1.23, WRC-12 delegates moved forward early in the Conference with what he called a "compromise proposal" for the new allocation. "Progress was made with a compromise proposal on Agenda Item 1.23, drafted to take into consideration the views of those for and those against an Amateur Service allocation around 500 kHz. This proposal suggests a 7-kilohertz segment between 472-479 kHz, very close to the CEPT position of 472-480 kHz."

The new allocation calls for a worldwide secondary allocation to the Amateur Service at 472-479 kHz, with a power limit of 1 W EIRP. A provision has been made, however, for administrations to permit up to 5 W EIRP for stations located more than 800 km from certain countries that wish to protect their aeronautical radionavigation service (non-directional beacons) from any possible interference. Footnotes provide administrations with opportunities to "opt out" of the amateur allocation and/or to upgrade their aeronautical radionavigation service to primary, if they wish to do so. In addition to these protections for aeronautical radionavigation, the Amateur Service must avoid harmful interference to the primary maritime mobile service.

ARRL Publishes New Guidelines for 60 Meters

Thanks to the FCC Report and Order issued November 18, 2011, amateurs will enjoy a number of new privileges on the 60-meter band beginning March 5, 2012, including a boost in effective radiated power from 50 to 100 W, as well as the ability to use CW and certain digital modes. Late last year, the ARRL HF Band Planning committee surveyed 60-meter operators to gather opinions about how to best use the new privileges. On the subject of creating a specific band plan, the survey results indicated little consensus beyond the fact that 5403.5 kHz should retain its status as a de facto "DX channel." On the other hand, survey respondents made a number of suggestions for general operating practices.

Based on the survey results and subsequent research, the committee declined to propose a specific band plan for 60 meters at this time. The committee instead created a "Recommended Practices" document that is now available for downloading from the ARRL Web site. The 60-meter pages on the ARRL Web site will also be updated to reflect the changes brought about by the Report and Order.

The April issue of *QST* magazine will also include an article by ARRL Regulatory Information Manager Dan Henderson, N1ND, which offers a detailed discussion of the new 60-meter privileges and recommended operating practices.

Going with the Flow
by Brian Lettieri, KI6VPF

Every now and then life has a way of throwing you curves, sometimes very big curves. From most of October through December I had taken the time to set up my shack and antenna farm just the way I needed it to be so everything worked correctly. (See Figures 1 and 2.)

Figure 1.

Figure 2.

For the room I had available, not a bad job, including my HF multi-band, a 6-meter vertical, two inverted V's—one on 10 meters, the other on 6 meters, my 900-MHz vertical, and, of course, my 2-m/70-cm vertical. I would say, "Well done!"

But on January 6, 2012, we had a garage fire, which ended up consuming the entire house, destroying all of our contents and my wonderful shack and farm I had installed. (See Figures 3 and 4.)

We were moved to a rental home that doesn't allow antennas mounted on the rooftops. So I had to become very creative if I wanted to stay in touch with OCRACES. So here's what I created (see Figure 5).

Figure 3.

Figure 4.

Figure 5.

The PVC pipe is 1¼-inch. There are two 4-way tees and four 45° elbows. Cross members extend the legs out away from the center pole. No glue was used, so the supports could rotate if needed and
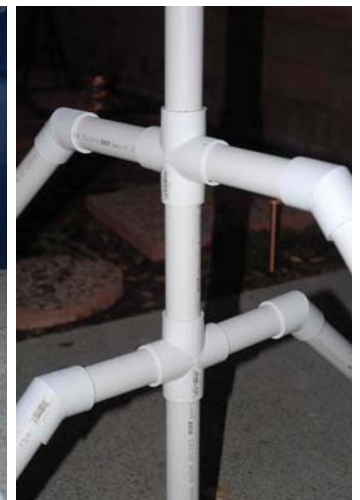

Figure 6.

Figure 7.

Going with the Flow *Continued from page 4*

Figure 8.

also for breaking down for transport purposes. (See Figures 6 and 7.)

My goal was to have the antenna base level with the 6-ft wall. So the first cut of the pipe, using a common hacksaw, was at 6 feet. (See Figure 8.) The lower tee was cut at one-third the distance from the bottom, while the higher support was just 1 foot length higher than the lower cut. I gave my distances in thirds and foot lengths because I didn't have a tape measure for exact measurements. I offset the 4-way tees to give the structure added support. The side supports were cut at 45° to the ground. (See Figure 9.)

Figure 9.

This was a very simple and easy project to build (actual time spent was less than an hour). It was very inexpensive to build, and can be a great portable solution for a Field Day event.

I am happy to share my experiences with everyone, and hope, in the future, if you need a quick solution to create an antenna structure, this will help.

5-MHz Allocation To Be Discussed at WRC-15

One of the responsibilities of each World Radiocommunication Conference delegation is to set the agenda for the next WRC. WRC-12 delegates approved an Amateur Radio-related agenda item for the upcoming WRC-15: To consider the possibility of making an allocation of an appropriate amount of spectrum, not necessarily contiguous, to the Amateur Service on a secondary basis within the band 5250-5450 kHz. This will be Agenda Item 1.4 at WRC-15.

"It is always a challenge to have items placed on the agenda for future WRCs," IARU President Tim Ellam, VE6SH, told the ARRL. "I am pleased that we were successful in having an Agenda Item for a potential allocation at 5 MHz on a secondary basis. There will be much work to do over the next ITU study group cycle. Much appreciation is owed to the IARU and the national delegation teams in Geneva for their hard work on this issue."

According to ARRL Chief Executive Officer David Sumner, K1ZZ, the original 5 MHz proposal came from Cuba. "The IARU team worked hard to line up support," he explained. "The factor that worked most in our favor was that, at WRC-07, a proposal for a 5 MHz agenda item for WRC-12 failed to gain enough support, so there was a feeling that the Amateur Service deserved better treatment this time around. We did have active support from a number of administrations in Latin America, which helped a lot, but a lot of others also had to agree to get it on the agenda. The coordinators of future Agenda Items on behalf of the regional telecommunications organizations, such as CITEL and CEPT, eventually agreed on a package of Agenda Items that included ours."

Agenda Item 1.4 focuses primarily on using the proposed allocation for emergency communications. The resolution noted that "communications in the HF bands that are allocated to the Amateur Service play a major role in work to mitigate catastrophes and in the delivery of communications in support of relief operations in areas where the telecommunication infrastructure is weak or has collapsed," and that "radiocommunication in the HF bands is dependent on propagation factors, with the result that frequencies in different bands have to be used to maintain stable communication for a relatively sustained period of time, with frequency changes in the case of communications with different correspondents located at very different distances."

The band 5250-5450 kHz is allocated to the fixed and mobile services, except aeronautical mobile, on a primary basis. The proposal maintains that "an allocation of an appropriate amount of spectrum, not necessarily contiguous, to the Amateur Service at around 5300 kHz would be adequate to better satisfy its needs associated with use for providing communications in disaster situations and during relief operations."

Work on this Agenda Item began recently at the Conference Preparatory Meeting (CPM), also in Geneva.

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

Jonathan Ramos, W6TFK, is now the Assistant Chief Radio Officer, Anaheim RACES.

Costa Mesa RACES (MESAC)

Lt. Bryan Glass, Costa Mesa Police Department/Telecommunications, is now the City's RACES Coordinator.

Fullerton RACES

Ron Stocking, Battalion Chief Training/ TLO/CERT, is now the Fullerton RACES Coordinator.

Laguna Beach RACES

Public Safety Dispatcher Jordon Villwock, Laguna Beach Police Department, is now the City's RACES Coordinator.

Santa Ana RACES

Because the Santa Ana Fire Department, which administers the Santa Ana Response Team (SART), is being absorbed by the Orange County Fire Authority, SART (which is the City's RACES unit) will be taken over by the Santa Ana Police Department. The transfer is expected to be completed by mid-April, 2012.

Westminster RACES

Jeremy Fletcher, Westminster Police Department, is now the City's RACES Coordinator.

American Red Cross

Tom Tracey, KC6FIC, is stepping down from his leadership position as the Communications Function Lead. He will still be active as a communications volunteer, and may provide some help with training programs in the future. During an interim transitional period, Richard Burbridge, KI6RBT, will be taking over in a "Deputy" Regional leadership role while other Regional organizational plans are solidified.

Hospital Disaster Support Communications System (HDSCS)

Ten HDSCS communicators responded to Children's Hospital of Orange County at 10 PM on Wednesday, January 18, 2012, for the unit's first pre-arranged standby operation of the year. Technicians had to completely shut down the phone system there that night to make upgrades related to the construction of a new patient-care tower. During that time, HDSCS operators provided communications for patient-care units on all floors of the facility plus the Neonatal Intensive Care Unit, Emergency Department, and Pharmacy. One operator was a "shadow" to the House Supervisor. From a communications standpoint, the busiest area of all was the Pharmacy, which was providing medications on call to all patient-care units. In addition to the on-site operators, two members were at their home base stations to handle messages into and out of the facility. The telephone downtime lasted for three hours, then the hams remained for an additional half hour before departing, to insure that the phones were stable. Team Leader and Net Control within the hospital was Ken Simpson, W6KOS. Other operators within the facility were Reid Green, KF6LOK, Rebecca Katzen, KI6OEM, Justin Miller, KI6AFZ, Dave Reinhard, KJ6REP, Clay Stearns KE6TZR, Mike Turner, W4OPS, Alex Valdez, K9BLK, John Walker, AC7GK and Woody Woodward, W6PA. Outside base-station operators were Paul Broden, K6MHD, and April Moell, WA6OPS. Ten additional members were standing by in case the operation had continued and relief operators were needed.

County of Orange RACES

Congratulations to OCRACES Applicant Marty Oh, KJ6RWE, who passed his General Class examination on Wednesday, February 1, 2012. He also passed the FEMA ICS-100, ICS-200, and IS-700 (NIMS) examinations on January 23-24, 2012, and completed the City of Fontana PD CERT course on January 28, 2012.

March 2012

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	*2*	*3*
4	*5 OCRACES Meeting & Weekly ACS Net*	*6*	*7*	*8 SEMS/ NIMS & EOC Orientation Class*	*9*	*10*
11	*12 Weekly ACS Net*	*13*	*14*	*15 EOC Responder Section Training*	*16*	*17*
18	*19 Weekly ACS Net*	*20*	*21*	*22*	*23*	*24*
25	*26 Weekly ACS Net & SWACS Radio Test*	*27*	*28*	*29*	*30*	*31*

Upcoming Events:

- **Mar 5:** OCRACES Meeting, 1930 hours, 840 N. Eckhoff Street, Suite 104, Orange
- **Mar 8:** SEMS/NIMS & EOC Orientation Class, 1000-1200, OC EOC
- **Mar 15:** EOC Responder Section Training, 1000-1200, OC EOC
- **Mar 26:** Southwest ACS Frequency and Radio Test, 2015 hours
- **Apr 21-22:** Baker to Las Vegas Challenge Cup Relay
- **May 15:** Golden Guardian
- **May 19:** City/County RACES & MOU Exercise, 0900-1100 hours
- **Jun 14:** EOC Responder Section Training, 1000-1200, OC EOC
- **Jun 23-24:** Field Day
- **Jun 25:** City/County RACES Meeting, 1900 hours, 840 N. Eckhoff Street, Suite 104, Orange

www.ocraces.org

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

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.

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

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

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

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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	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
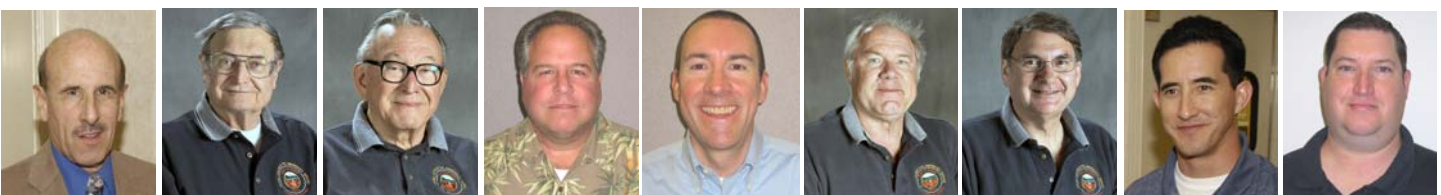
Ray Grimes N8RG	Walter Kroy KC6HAM	Martin La Rocque N6NTH	Brian Lettieri KI6VPF	Kenan Reilly KR6J	John Roberts W6JOR	Joe Selikov KB6EID	Tom Tracey KC6FIC	Brian Turner KI6WZS