Unauthorized Operation

Some hams say, “Anything goes” during an emergency, meaning that they think they can transmit on a frequency in a radio service for which they are not licensed, and, worse yet, that they can program those unauthorized frequencies into their radios that are not FCC-approved for transmitting in that radio service.

Some radios, especially many made in China, claim to be FCC approved for Part 90 use. Part 90 is the Land Mobile Radio Service set up by the FCC for business and government operations. For example, the OCSD Search & Rescue Unit communicates on a UHF frequency (“Blue Channel”), and many of its members have programmed that repeater into relatively inexpensive Chinese radios that supposedly are Part 90 approved. (I recommend running your own approval check on the FCC’s Web site at https://www.fcc.gov/oet/ea/fccid before taking the word of some distributors that their radios are indeed Part 90 approved.) If you do not have authorization to communicate on a Part 90 frequency (such as being an SRRU member), it is illegal to program your radio for such use. See the following FCC rule:

§90.427 Precautions against unauthorized operation.

(a) Each transmitter shall be so installed and protected that it is not accessible to or capable of operation by persons other than those duly authorized by and under the control of the licensee. Provisions of this part authorizing certain unlicensed persons to operate stations, or authorizing unattended operation of stations in certain circumstances, shall not be construed to change or diminish in any respect the responsibility of station licensees to maintain control over the stations licensed to them (including all transmitter units thereof), or for the proper functioning and operation of those stations and transmitter units in accordance with the terms of the licenses of those stations.

(b) Except for frequencies used in accordance with §90.417, no person shall program into a transmitter frequencies for which the licensee using the transmitter is not authorized.

It’s even worse to program Part 90 frequencies into a ham transceiver that is not Part 90 approved. Such radios will likely emit spurious radiations when operated on frequencies for which they are not approved or designed, thereby causing interference to other radio services.

Some hams think that using their Part 90 approved radio would also be allowed on GMRS. But GMRS is Part 95, not Part 90. A Part 90 approved radio would probably meet the technical certification standards of Part 95, but whether that authorizes a Part 90 radio to be used on GMRS is a matter of interpretation. My personal interpretation is “No,” but you may disagree.

A Part 90 radio may be programmed for and operated on amateur radio frequencies, as long as doing so does not violate the technical standards of Part 97 emissions, but ham transceivers may not be programmed for and operated on Part 90 frequencies if they are not FCC approved for Part 90 use.
Civil Disorder Addressed During May 6th Drill

Civil disorder was the scenario for the City/County RACES & MOU ACS Exercise on Saturday, May 6, 2017. OCRACES members and applicants arrived at the Orange County EOC RACES Room before 0830 hours to get prepared for the drill, which occurred from 0900 to 1100 hours. They were welcomed by OCRACES RACES Chief Radio Officer Ken Bourne, W6HK, who had prepared all original messages to be sent during the general voice and Winlink segments of the drill. OCSD Emergency Communications Manager Lee Kaser, KK6VIV, arrived soon after the drill began, and expressed his appreciation for the excellent turnout of members at the EOC as well as at field locations. Simplex communications were handled primarily between the City RACES units, to test coverage. About 40 voice messages were received on OCRACES 2-meter and 70-centimeter repeaters, and 26 voice messages were sent via the City RACES primary repeater and simplex frequencies. A few messages were sent and received at the 40-meter SSB station. The Winlink station sent 20 messages and received 22.

OCRACES members at the EOC, in addition to Capt. Bourne, included Roger Berchtold, WB6HMW, Sgt. Jack Barth, AB6VC, Martin La Rocque, N6NTH, Walter Kroy, KC6HAM, Fran Needham, KJ6UJS, Harvey Packard, KM6BV, Sgt. Tom Tracey, KC6FIC, and Ken Tucker, WF6F. OCRACES applicants included Brian Ahn, KM6CXL, and Nikko Lawson, KM6ATE, who operated together at the Winlink station. This was their first experience with Winlink, and they immediately became experts! Also at the EOC RACES Room, representing the Hospital Disaster Support Communications System (HDSCS), was Justin Ennen, AI6CI.

Two OCRACES teams were in the field during the exercise, including Randy Benicky, N6PRL, and Matt Luczko, KM6CAO, mobile in South County, and Bob McFadden, KK6CUS, and Tony Scalpi, N2VAJ, at a portable location in
Civil Disorder in May 6th Drill

Continued from page 2

Orange. Both teams were on 2 meters and 70 centimeters, as well as on 40 meters SSB.

Participating City RACES units included Anaheim, Brea, Buena Park, Costa Mesa, Cypress, Fountain Valley, Fullerton, Huntington Beach, Irvine, Laguna Beach, Laguna Niguel, Laguna Woods, Los Alamitos, Mission Viejo, Newport Beach, Orange, Placentia, Seal Beach, and Westminster. Also participating were American Red Cross, HDSCS, and Cal OES.

The civil-disorder scenario generated many interesting messages. For example, a message to Newport Beach PD warned of five submarine snorkels near the entrance of Newport Harbor. A Winlink message indicated a submarine was headed toward a Hornblower cruise ship in the harbor. A reply said the submarine grounded in shallow waters. Costa Mesa PD was warned to prepare for a terrorist attack from a fleet of eight semi-trailer trucks approaching South Coast Plaza at high speed. Buena Park PD was advised of 15 drones near Knott’s Berry Farm. Anaheim Fire was notified of gangs preparing to board a train to rob passengers. A message to St. Jude Medical Center via HDSCS advised of ambulances approaching the hospital that were filled with terrorists and chemical weapons. St. Jude responded that they were being put on lockdown.

Next OCRACES Meeting: June 5th

The next County of Orange RACES meeting will be on Monday, June 5, 2017, at 7:30 PM, at OCSD Communications & Technology Division, 840 N. Eckhoff Street, Suite 104, in Orange. Newport Beach RACES Chief Radio Officer Peter Putnam, NI6E, will give a presentation on his 2004 Ford E-350 TV news van that he purchased last year. The van includes a Will-Burt 9.5-56 pneumatic mast that extends to 56 feet. Two air compressors run on 12 V dc and 120 V ac. Mast and hydraulic leveling jack controls are outside on the passenger side. A 7-kW generator provides 120 V ac at 58 A. Inside the van is a warning panel for “mast extended” and “jacks down,” plus GPS and scanner.

City/County RACES & MOU Meeting: June 12th

The next City/County RACES & MOU Meeting will be on Monday, June 12, 2017, at 7:30 PM, at OCSD Communications & Technology Division, 840 N. Eckhoff Street, Suite 104, in Orange. At this meeting we will review the May 6th City/County RACES & MOU ACS Exercise. Each agency will give a report of its current activities.

OCRACES to Team with OCARC on Field Day

OCRACES will team up with the Orange County Amateur Radio Club (OCARC) for Field Day on June 24-25, 2017. Field Day is a required event for all OCRACES members. We will learn from the OCARC members who are highly experienced in successful Field Day operation, and they will learn from us. Our main responsibility will be the VHF/UHF station. Planned modes for this year include 40 meters CW, 40 meters phone, 20 meters digital, 20 meters CW, 20 meters phone, VHF/UHF phone, satellite, and GOTA (10/15/80 meters). Field Day will be at the Walter Knott Education Center at 7300 La Palma Avenue in Buena Park. Setup will be on Friday morning, June 23rd, and Saturday morning. Operations will be from Saturday at 11:00 AM until Sunday at 11:00 AM. Teardown and group photo will be from Sunday at 11:01 AM until done. OCRACES members are urged to attend the next OCARC meeting, which will focus on Field Day preparations. The meeting will be at 7:00 PM on Friday, June 16th, at American Red Cross, 600 Parkcenter Drive, in Santa Ana.
**KC6TWS Hides in Costa Mesa**

Peter Gonzalez, KC6TWS, was the fox on Monday, May 15, 2017, on the monthly cooperative T-hunt. He turned on the fox box immediately following the 2-meter OCRACES ACS net, hiding in Costa Mesa just northwest of John Wayne Airport.

First to find the fox was Ron Allerdice, WA6CYY, from Costa Mesa. Second place was taken by the team of Ken Bourne, W6HK, Dennis Brunning, KC6NVX, and Matt Curtis, KC6NVN. Coming in third was the team of Patrick Williams, KJ6PFW, Eric Bowen, W6RTR, and Bill Rose, KA6HMS.

The next cooperative T-hunt will be held on Monday, June 19, 2017, immediately following the OCRACES 2-meter net (approximately 7:20 PM). The fox will be Dennis Brunning, KC6NVX, and he will hide on paved, publicly accessible property in Westminster. No fees will be required to drive directly to the fox. He will transmit on the input (146.295 MHz) of the 146.895 MHz repeater. Hunters will compare bearings via the 448.320 MHz repeater (while the 449.100 MHz repeater is down), and are encouraged to beacon their positions via APRS throughout the hunt.

The cooperative T-hunts are usually held on the third Monday of each month. The hunts provide excellent practice in working together to find sources of interference quickly. The hunts are not official RACES events, so DSW (Disaster Service Worker) coverage does not apply. Please drive carefully!

At the fox’s den are (left to right) Peter Gonzalez, KC6TWS (the fox), Eric Bowen, W6RTR, Matt Curtis, KC6NVN, Ron Allerdice, WA6CYY, Dennis Brunning, KC6NVX, Bill Rose, KA6HMS, and Patrick Williams, KJ6PFW.

Fox-hunt loops and beams are available from Arrow Antenna and HRO, including the Arrow Model FHL-VHF fox-hunt loop (covers 1 MHz to 600 MHz) and the Arrow Model 146-3 three-element portable hand-held yagi. The Arrow OFHA 4-MHz offset attenuator 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, reduce RF gain, 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). A very similar system is the MFJ-5005 Doppler direction finder. Other useful tools are the Fox-hunt app for iPhones and the Triangulate app for Android phones.

**EOC Offers Training Opportunities**

The Orange County Emergency Operations Center is offering some training opportunities to all County employees and Operational Area Partners, as well as OCRACES members, in June. See the course descriptions below:

- **EOC Response: Logistics & Finance Section**, June 8, 9:00 AM to 11 AM
  This course is designed for those who may fill a Logistics & Finance Section position within the EOC. Training will include an overview of the Logistics & Finance Section process, protocols, position checklists, and hands-on practice. Enrollment is open to all County employees and Operational Area Partners.

- **Web EOC 8.0/JIMS 8.0**, June 14, 9:00 AM to 11:00 AM

- **Intro to SIMS, NIMS, ICS, and EOC Orientation**, June 20, 1:00 PM to 3:00 PM
  This introductory course is intended to give participants a basic overview of the Incident Command System, Standardized Emergency Management System, National Incident Management System, and an orientation to the basic functions of the County Emergency Operations Center.

To register, please download the registration form from the “Forms” page on the OCRACES Web site at http://www.ocraces.org/forms.html. Click on “EOC Training Registration Form January to June 2017.” Then e-mail Miriam Aldana at maldana@ocsd.org.
In a lengthy Report and Order (R&O) in a proceeding (WT Docket No. 10-119) dating back 7 years (and summarized as follows by the ARRL), the FCC has announced rule changes affecting the General Mobile Radio Service (GMRS), the Family Radio Service (FRS), the Citizens Band Radio Service (CBRS or “CB”), as well as other applications that fall under the FCC’s Part 95 Personal Radio Services (PRS) rules and regulations. Part 95 devices typically are low-power units that communicate over shared spectrum and, with some exceptions, do not require an individual user license from the FCC. As the R&O explains, common examples of PRS devices include “walkie-talkies;” radio-control cars, boats, and planes; hearing assistance devices; CB radios; medical implant devices; and Personal Locator Beacons.

“This draft Report and Order completes a thorough review of the PRS rules in order to modernize them, remove outdated requirements, and reorganize them to make it easier to find information,” the FCC said in a summary attached to the R&O. “As a result of this effort, the rules will become consistent, clear, and concise.

GMRS and FRS devices are used for personal communication over several miles; compact FRS handhelds, often sold in pairs, are widely available. While GMRS and FRS share spectrum, GMRS provides for greater communications range and requires an FCC license; FRS does not.

“The rules will increase the number of communications channels for both GMRS and FRS, expand digital capabilities to GMRS (currently allowed for FRS), and increase the power/range for certain FRS channels to meet consumer demands for longer range communications (while maintaining higher power capabilities for licensed GMRS),” the FCC explained.

The amended rules eventually will eliminate combination FRS/GMRS radios for the most part, but allow up to 2 W PEP output for FRS transceivers. “[M]any current users of GMRS/FRS combination radios do not obtain licenses to operate over the GMRS frequencies in those radios,” the FCC said. “Much of this problem likely arises as a result of the mass consumer marketing of combination devices for sale to the public in large quantities to users who do not know about or do not understand the licensing requirements attached to such radios and obligations associated with operating in the GMRS.”

The FCC said it no longer will certify FRS devices that incorporate GMRS capabilities or capabilities of other services. Existing GMRS/FRS combination radios that operate at power levels of less than 2 W ERP will be reclassified as FRS devices; existing GMRS/FRS radios that operate above that power level will be reclassified as GMRS devices, requiring an individual license. Radios that can transmit on GMRS repeater input channels will continue to be licensed individually and not by rule.

“We believe the 2 W limit for FRS is appropriate, because many of the existing combination GMRS/FRS radios already operate under that level with no significant complaints about interference or other problems, and it provides a reasonable balance between the desire for increased range over the prior FRS power levels and battery life,” the FCC said.

The FCC said changes to the decades-old Citizens Band (CB) rules will remove outdated requirements, including certain labeling requirements. DXing on Citizens Band will become legal too. Once the new rules are effective, CBers will be allowed to contact stations outside of the FCC-imposed — but widely disregarded — 155.3-mile distance limit. The revised CB rules further clarify how hands-free devices can be used with CB radios and will allow the use of wireless microphones with CB radios. “We find the record persuasive regarding the consumer demand for this feature, and it will promote safety on the highways by reducing driver distraction for those using CB [radios],” the FCC said. The FCC left in place the current power limits for the CB Radio Service.

The rule changes will phase out the use of voice-scrambling or “obscuring” features in all Part 95 devices, and it will ultimately prohibit manufacture, importation, or sale of any devices incorporating such features, “regardless of whether the Commission has previously certified that radio.”

Overall, the FCC said, its action “achieves a thorough review of Part 95 rules and creates a new rule structure where common administrative rules are consolidated to reduce duplication, and individual subparts are structured with a common numbering scheme.” The FCC said the changes remove “outdated and unnecessary rules, while clarifying others.”

Most of the new Part 95 rules will become effective 30 days after their publication in The Federal Register.
Laguna Beach Emergency Communications Team (LBECT/RACES)

The Laguna Beach 51st Annual Patriot Day Parade on March 4, 2017, was supported by LBECT’s team members at the Parade’s High School starting point and the Library and City Hall announcers. The LBECT team consisted of Elaine Merz, WA2NQB, Kip Scott, KJ6FKR, and Arlene Schwartz, KE6GFI. As in the past, LBECT’s Chief Radio Officer, John Kountz, WO1S, served as the announcer at City Hall.

John invites City and County RACES members to exercise their simplex skills on any or all of LBECT nets:
- Mondays, 8:30 PM to 8:45 PM (per John’s update of May 29, 2017), 145.510 MHz FM
- Thursdays, 6:30 PM to 7:00 PM, 446.000 MHz FM, and 7:00 PM to 8:00 PM, 432.100 MHz, upper sideband
- Fridays, 7:45 PM to 8:00 PM, 1.296110 GHz upper sideband

Hospital Disaster Support Communications System (HDSCS)

During the second week in May, HDSCS members started their ambulance dispatch observations as part of their ongoing education. Understanding some of the terminology and procedures involved can be valuable in hospital evacuations, in mass transfers, and in isolated communication losses that affect the interface with hospitals.

On May 13, 2017, an HDSCS info table was part of the Fullerton Radio Club’s Antennas in the Park. Visitors had a chance to learn more about the group and also to see some of the portable equipment that members take into hospitals when there is a communications problem.

HDSCS will participate in the annual ARRL Field Day communications exercise by setting up several stations and antennas in front of Huntington Beach Hospital during the weekend of June 24-25, 2017. Activities will include an examination session for ham radio licenses at 2:30 PM on Saturday. The hospital is east of Beach Boulevard between Newman and Talbert Avenues in Huntington Beach.

Fountain Valley RACES

The Fountain Valley RACES June activity calendar includes Summerfest on June 22-25, Fountain Valley Car Show on June 24, and Field Day on June 24-25.

Irvine RACES (IDEC)

IDEC’s next “VickiBrek” will be on Saturday, June 10, 2017, at 0800 hours. This is a no-host breakfast meeting at Knowlwood, Sand Canyon Avenue at Burt Road. Visitors are welcome.

Los Alamitos RACES

Cpl. Stacy Smith, Administrative Services, Los Alamitos Police Department, is the new RACES Coordinator for that City.

Newport Beach RACES

Peter Putnam, NI6E, is now the Newport Beach RACES Chief Radio Officer. He will be speaking at the next OCRACES meeting on June 5, 2017, about his surplus news van with a 56-foot pneumatic mast. The meeting is at 7:30 PM at OCSD Communications & Technology Division, 840 N. Eckhoff Street, Suite 104, in Orange.

Orange County Amateur Radio Club

The next Orange County Amateur Radio Club meeting is on Friday, June 16, 2017, at 7:00 PM, at American Red Cross (George M. Chitty Building), 600 Parkcenter Drive, in Santa Ana. Chip Margelli, K7JA, will present valuable Field Day setup/operating tips while sparking interest in the event. OCRACES will team up with the Club on Field Day on June 24-25, 2017, at the Walter Knott Education Center at 7300 La Palma Avenue in Buena Park. Setup will be on Friday morning, June 23rd, and Saturday morning. Operations will be from Saturday at 11:00 AM until Sunday at 11:00 AM. Teardown and group photo will be from Sunday at 11:01 AM until done.
## Upcoming Events:

- **June 5:** OCRACES Meeting, 840 N. Eckhoff Street, Suite 104, Orange; 1930 hours
- **June 12:** City/County RACES & MOU Meeting, 840 N. Eckhoff Street, Suite 104, Orange; 1930 hours
- **June 14:** WebEOC Training, OC EOC, 0900-1100 hours
- **June 16:** Orange County Amateur Radio Club Meeting, American Red Cross (George M. Chitty Building), 600 Parkcenter Drive, Santa Ana; 1900 hours
- **June 19:** Cooperative T-Hunt on input of 2-meter repeater, 1920 hours
- **June 20:** Introduction to SIMS, NIMS, ICS, and EOC Orientation, OC EOC, 1300-1500 hours
- **June 24-25:** Field Day with the Orange County Amateur Radio Club
- **June 26:** ACS Nets on five bands and Cal OES Nets from OC EOC
- **July 10:** OCRACES Meeting, 840 N. Eckhoff Street, Suite 104, Orange

### County of Orange RACES Frequencies

- **40 m:** 7250 kHz SSB (City/County/MOU Net—Saturdays, 1000 hours)
- **10 m:** 29.640 MHz output, 29.540 MHz input, 107.2 Hz PL
- **6 m:** 52.620 MHz output, 52.120 MHz input, 103.5 Hz PL
- **2 m:** 146.895 MHz output, 146.295 MHz input, 136.5 Hz PL*
- **1.25 m:** 223.760 MHz output, 222.160 MHz input, 110.9 Hz PL
- **70 cm:** 446.000 MHz simplex
- **70 cm:** 448.320 MHz output, 443.320 MHz input, 141.3 Hz PL (private)
- **70 cm:** 449.100 MHz output, 444.100 MHz input, 110.9 Hz PL (out of service)
- **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

---

### 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.
Meet Your County of Orange RACES Members!

Ken Bourne
W6HK

Scott Byington
KC6MMF

Harvey Packard
KM6BV

Jack Barth
AB8VC

Ernest Fierheller
KG6LXT

Bob McFadden
KK6CUS

Tom Tracey
KC6FIC

Randy Benicky
N5PRL

Roger Berchtold
WB6HMW

David Corsiglia
WA6TWF

Jim Dorris
KC8RFC

Nancee Graff
N6ZRB

Ray Grimes
N8RG

Walter Kroy
KC6HAM

Martin La Rocque
N6NTH

Matt Luczko
KM6CAO

Fran Needham
KJ6UJS

Ken Reilly
KR6J

Tom Riley
K6TPR

Brad Russo
KB6GPM

Tony Scalpi
N2VAJ

Joe Selikov
KB6EID

Robert Stoffel
KD6DAQ

Ken Tucker
WF6F

Tom Wright
KJ6SPE

Lee Kaser
KK6VIV

“W6ACS ... Serving Orange County”