



County of Orange RACES

NetControl

September 1999



Newsletter of the County of Orange Radio Amateur Civil Emergency Service

Top Story

FIELD DAY 99

By: Ralph Sbragia, KD6FYT
FD Coordinator

Field Day 1999 for OCRACES was divided into two primary emphases: training on the County's field operations equipment and participation in the ARRL sponsored contest. The training aspects of the exercise were most successful with twenty members participating in the Saturday morning training sessions. The training sessions began at 0800 local and continued until the stations were completely set up and operational at 1100 (1800 Zulu). Training concentrated on the general aspects of setting up a field communications station and then on the specific aspects of setting up the County's field equipment.

The contesting portion of our Field

Day, was assisted by veteran contest operator Bill Scholtz, W1HIJ. We made a total of 473 contacts and used seven amateur bands. Only 98 of these contacts were in CW or digital modes (CW & digital contacts count for 2 points, voice contacts count for 1). Scores could have been increased if more operators were available during the event. An effort should be made for next year to increase membership and participation.

Set-up began Friday evening with some of the VHF gear, the logging computers, and several of the long wire antennas. The equipment was tested to insure proper operations on Saturday and we attempted to copy the ARRL bulletin in both CW & SSB. Although not all of the non-County equipment was set up on Friday, (as originally planned) we did get enough set up to take the pressure off Saturday morning.

Sept. Meeting

The OCRACES September 13 meeting will be closed to the public. The meeting will be held at the EOC on Loma Ridge. Beside the normal staff meeting, a round robin training session will be held that will cover the ReddiNet procedures, training on new satellite phone and changes to the RACES room. As usual the meeting will start at 1930 hours. Net control operators should try and run their nets from the RACES room in the EOC.

Saturday morning we concentrated on the set up of the County's field operations equipment: the trailer tower, the 10,15,20 Meter Yagi, a multi-band long wire and the County's HF radio and tuner. We ran into a little difficulty with the desk microphone but otherwise the station was up and operational at 1800 UTC when the contest be-

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Upcoming Events

Sept. 6	Labor Day - No Meeting, No Net
Sept. 13	Closed General Meeting, Loma Ridge
Sept. 16	State Wide Y2K Hospital Exercise
Sept. 22,23,24	Songs Drill rehearsal, Loma Ridge
Sept. 24	Deadline for <i>NetControl</i>
Oct. 1,2,3	ARRL Regional Convention, Long Beach
Oct. 4	General Meeting, Alternate EOC
Oct. 16	City/County RACES Drill
Oct. 27,28,29	Songs Exercise, Loma Ridge

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Visit the OCRACES Web Page @ <http://www.ocraces.org>
(Back issues of *NetControl* now available on the OCRACES Web Page)

Captain's Corner

By Ray Grimes

OCRACES had a busy summer with fun things such as Field Day, the Orange County Fair, and the CPRA meeting and tour at the Loma Ridge EOC. Fortunately, there hasn't been much emergency work lately. That shouldn't make us relax too much though. We must remain focused and prepared at all times. Articles are starting to appear which imply that this will be a severe fire danger season. Oftentimes that much publicity makes these predictions come true as it can

bring out arsonists. We have heard very little about earthquake preparation, being overshadowed by Y2K gloom and doom publicity. This would be an excellent time to check duty bags and to make sure they contain fresh supplies. Don't forget to replace stored flashlight batteries.

As the past few years have been very unusual weatherwise for Southern California, it would be advisable to also think about flash flooding and tornado emergencies. These are emergencies for which

Southern California is minimally prepared as these would be very unusual occurrences, though equally disastrous. How could OCRACES have assisted in Salt Lake City recently where a tornado ripped through the downtown area? Would we do anything differently in providing emergency communications for this disaster than for an earthquake? Something to think about.

ECC News and Views

by Robert Stoffel

I open this month with a "farewell" to Amish Parashar, KE6EZM, who recently graduated from high school and will start college next month on the East Coast at Dartmouth. Thanks to Amish for his participation in the RACES program and we offer our best wishes as he continues his education. I would also like to offer congratulations to Tom Mirabella, KD6AAN, who recently graduated from high school and will be starting at Cal Poly Pomona this month. Tom will be remaining with OCRACES and will continue as our webmaster!

I would like to extend a special thanks to 12 of our members who have been consistently involved in most of our various activities this year - Al Baird, Jack Barth, Jim Carter, Robbe Gibson, Ray Grimes,

Walter Kroy, Mike Krueger, Ken Mirabella, Harvey Packard, John Roberts, Joe Selikov, and Steve Sobodos. Each of these members is our "most active" when it comes to participating in meetings, nets, training and activities. Thanks for your help in keeping our RACES program strong.

It is hard to believe that summer is already coming to an end, but we are quickly approaching a new school year. This past month Jack, Jim and Ken participated in a "Loma Ridge Work Party" installing antennas and coax connectors. Several upcoming OCRACES activities in September include our General Meeting on September 13 and the SONGS dress rehearsal on September 22. Mike Krueger is busy placing the final touch to our City/County

RACES drill that will be conducted on October 16, 1999. This is our second annual exercise of its type and we are expecting a high level of participation from other city and county RACES organizations. And a reminder about the ARRL Southwestern Division Convention on October 1-3, 1999. Hamcon '99 will be held at the Queen Mary in Long Beach. Register now and you can save a few dollars!

I would like to close with a help wanted announcement. Joe Selikov must give up his *NetControl* editor duties due to increased responsibilities at work. We need a new editor to take over the production of our award-winning newsletter. Please contact Ray Grimes or myself if you are interested in the position.

(Field Day from page 1)

gan.

We operated three stations on HF most of the day Saturday, although a tuner problem delayed the second HF station from getting on the air right at 1800 UTC. The third transmitter on Saturday, switched between the 40 Meter and 6 Meter bands. Unfortunately, although there had been almost daily 6M openings to the east, an opening failed to manifest itself on Field Day. Two other Saturday bright spots were the attainment of the natural power bonus points by John (W6JOR) on 2 Me-

ters and Jack Barth (AB6VC) earning us the ATV bonus points. Southern California VHF/UHF activity was somewhat slower this year than in years past.

As Saturday evening wore into night, the shortage of operators resulted in transmitters sitting idle. Relief operators were also at a premium which resulted in dead time while the night owls took well deserved breaks.

Sunday morning operations went well with additional operations being completed on three transceivers. One area we

neglected though was the 10 Meter band. Despite having the County's Tri-band Yagi, none of the operators elected to work the 10 Meter band. At 1800 UTC Sunday, we ceased operations and began tear down. Within three hours, the stations were dismantled and the park was returned to a condition as good or better than we found it when we arrived.

In summary, it was a productive and useful Field Day for OCRACES. With bonuses, we scored 1742 points. We averaged about 20 contacts per hour, an ac-

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Incident Command System. Definitions.

ICS (Incident Command System) is used throughout California and is the primary field command structure of most major incidents. Due to the many agencies that could become involved in an incident, a standardized list of terms and their definitions was established. This facilitates clear, concise and efficient communications at the management level.

As communicators, we may find ourselves in situations where knowledge of these terms is required. Future training articles will focus on the actual organization and implementation of ICS, and how OCRACES can benefit from operating under ICS.

Since this is a fairly extensive list, it will span several **NetControls**. This month: A through C.

Incident Command System Terms and Definitions

GLOSSARY OF TERMS supplied by Bill Pennington, WA6SLA, OES Inland Region Assistant Radio Officer, OES Region IV Radio Officer, DEC.

Aerial Torch - An ignition device suspended under a helicopter capable of dispensing ignited fuel to the ground for assistance in burnout or backfiring.

Agency Representative - Individual assigned to an incident from an assisting or cooperating agency who has been delegated full authority to make decisions on all matters affecting that agency's participation at the incident. Reports to the Incident Liaison Officer.

Air Tanker - Any fixed wing aircraft certified by the FAA as being capable of transport and delivery of fire retardant solutions.

Allocated Resources - Resources dispatched to an incident that have not yet checked-in with the Incident Communications Center.

Assigned Resources - Resources checked-in and assigned a work task on an incident.

Assisting Agency - An agency directly contributing suppression, rescue, support, or service resources to another agency.

Available Resources - Resources assigned to an incident and available for an assignment.

Base - The location where the primary logistics functions are coordinated and administered. The Incident Command Post may be collocated with the base. There is only one base per incident.

Branch - The organizational level having the functional/geographical responsibility for major segments of incident operations Organizationally between Section and Division/Group.

Brush Patrol Unit - Any light mobile unit, having limited pumping and water capacity for off-road operations.

Camp - A geographical site, within the general incident area, separate from the Base, equipped and staffed to provide food, water, and sanitary services to incident personnel.

Check-in - Locations where assigned resources check-in at an incident. The locations are: Incident Command Post (Resources Unit), Incident Base, Camps, Staging Areas, Helibases and Division Supervisors (for direct line assignments).

Clear Text - The use of plain English in radio communications. No Ten Codes, or agency specific codes are used when using clear text. (And for amateur radio operators it is recommended that no Q Signals, or CW abbreviations be used.)

Command - The act of directing, ordering and/or controlling resources by virtue of explicit legal, agency, or delegated authority.



Command Staff - The Command Staff consist of the: Information Officer, Safety Officer and Liaison Officer each of whom report to the Incident Commander.

Comm. Unit - (Communications Unit) A vehicle (trailer or mobile van) used to provide the major part of an Incident Communications Center.

Company - Any piece of equipment having a full compliment of personnel.

Cooperating Agency - An agency supplying assistance other than direct suppression, rescue, support or service functions to the incident control effort (e.g. Red Cross, a law enforcement agency, telephone company, etc...).

Coordination - The process of systematically analyzing a situation, developing relevant information, and informing appropriate command authority (for its decision) of viable alternatives for selection of the most effective combination of available resources to meet specific objectives.

Crew Transport - Any vehicle capable of transporting personnel in specified numbers.

Technical Interest

GPS and a Y2K Dress Rehearsal

by: Ray Grimes, W6RYS
Chief Radio Officer, OCRACES

In August the GPS system users may sample Y2K bug-like system faults. Quoting John Lovell, Director for Trimble Navigation, "It's serious enough to be called a dress rehearsal for the Y2K bug yet few people know about it". He is referring to a GPS system design limitation in which the date field was restricted in order to allow for more functionality. This is similar to the early computers in which the date field was limited to two digits to conserve then-precious memory. The GPS system keeps track of time by weeks and seconds. Each Saturday at midnight (GPS time) the system's weekly counter increments by one. The weekly counter began on January 5, 1980 and will rollover to zero when the count tries to increment from 1023 to 1024 at about midnight GPS time on August 21. The system will rollover once about every 20 years.

This process known as "GPS Week Number Rollover" or "GPS End-of-Week Rollover" is similar to a car's odometer rolling over at 99,999 miles to zero. The

difference with the GPS rollover is that it will affect every user at exactly the same time. If a GPS receiver has trouble determining the correct date at, before, or during this rollover, it may process data incorrectly. Lovell further stated that GPS users who use this information for air or sea navigation could face serious safety hazards.

While the experts aren't in agreement as to how the rollover will actually affect GPS receivers, they offer some possible and likely scenarios. The best case scenario is that nothing at all will occur. Most newer GPS receivers are expected to handle the rollover without a glitch. If problems do occur, they could range from receivers displaying the date as 1980 to some interruptions in service up to a half hour while the receiver sorts itself out. Worst case scenarios include receivers will display incorrect data, or may not work at all.

The Department of Defense has stated that the GPS satellite system will not be affected nor will the DOD Ground Control Center, but makes no guarantees for older GPS consumer grade receivers. Trimble is recommending that if GPS receivers are

used in applications where life and property are at stake, that they not be used for primary navigation or positioning during the rollover period. Many cellular telephone systems, radio paging systems, and emergency location and vehicle tracking systems may use GPS as a time base to provide frequency stability, seamless handover between sites, or vehicle location information. Loss of GPS information would render these systems useless after a short period. Lucent Technologies, Inc. for one, has stated that their tests indicate that no such GPS problems will occur with their products.

As August 21 will pass long before the ink dries on this article, we will have first-hand information as to how robust our commercial grade GPS receivers actually are. You will also have 20 years before the next rollover to think about purchasing a newer model GPS receiver.

Source: RCR, July 19, 1999,
GPS Date Change..., Beckman, K.

ESP

Sept '99



VOLCANOES

Volcanoes are a part of our environment!

Volcanic eruptions are not as common as earthquakes in California, but, like earthquakes, they have played a significant role in shaping the landscape along the eastern Sierra Nevada range.

Scientists estimate that eruptions have occurred in the area for nearly four million years and that two volcanic systems--the Long Valley Caldera and the Mono-Inyo Craters volcanic chain--are responsible for most of the activity.

Long Valley Caldera is a large depression in the earth located about 12-1/2 miles south of Mono Lake. The caldera stretches over 450 square kilometers or about 175 square miles. The caldera was formed approximately 760,000 years ago as the result of an eruption that spewed molten rock, or magma, and sent airborne ash as far away as what is now Nebraska. Scientists estimate that eruptions from the caldera have occurred approximately every 200,000 years since then. They believe that the last caldera eruption occurred about 100,000 years ago.

Mammoth Mountain, the Mono Craters and Inyo Craters also owe their existence to volcanic activity in the Mono-Inyo Volcanic Crater chain. Scientists believe volcanic activity in the chain began 60,000 to 400,000 years ago. They estimate that much smaller eruptions in the vents along the chain occur every 250 to 700 years,

with the two most recent occurring about 250 and 500 years ago.

The *Volcano Check List* (on page 5) features information about the volcanic history in the area, current monitoring efforts and the meaning of threat classifications issued by the United States Geological Survey (USGS). Use this information to reduce your risk of injury wherever you live, work or play.

The Los Angeles County Office of Emergency Management has a program called ESP which stands for Earthquake Survival Program. As part of that program they supply a set of articles which focus on a different hazard each month. **NetControl** will publish each month's hazard through the end of the year.

VOLCANO Check List

Recent Events: Cause for Concern?

Seismic activity in the past two decades has centered in the area near Mammoth Lakes. A series of four temblors in the magnitude-6 range shook the area in 1980, attracting the interest of the USGS.

Since then, between 10 and 20 earthquakes with magnitudes of less than magnitude-3 have struck the area on an average day. On a few occasions, including this past summer, swarms with an earthquake in the magnitude 4 and 5 range have occurred in the area.

In 1980, USGS scientists discovered about a one-foot rise in the dome at the center of the caldera caused by rising magma. Since then, the dome has risen about another foot over a 100-square-mile area.

Scientists also discovered high concentrations of carbon dioxide at the southwestern edge of the caldera in 1990. The gas emissions have been linked to the killing of pine, fir and other cone bearing trees over a 170-acre area.

The USGS considers a future eruption in the Inyo-Mono volcanic chain more likely than one in the caldera. It estimates the yearly odds of such an eruption as similar to the annual probability of a magnitude-8 earthquake on the San Andreas Fault in Central California--less than one per cent. However, during periods of moderate to strong unrest such as earthquake swarms, the odds increase significantly.

What Status Designations Mean

Until recently, the USGS used a series of letters from A to E to indicate the level of potential threat. E-Status represented "weak" unrest, and A-Status represented a likely eruption.

To alleviate confusion among the media and the public, the USGS in 1997 began using color coded designations to describe unrest in the area. Following is a summary of what each color signifies:

Condition **green** signifies "weak," "minor" and "moderate" unrest. Events in these designations range from an increase in small earthquakes or a quake larger than magnitude-3 to a magnitude-4 event or a total of more than 300 quakes in a single day. The USGS might issue status green designations several times per year, but the occur-

rence of the aforementioned events poses no immediate danger to the public.

One or more magnitude-5 events or the detection of deep magma movement through ground deformation indicates "intense unrest" and triggers condition **yellow**. Under such circumstances, the USGS will increase monitoring and issue a "watch" to the Governor's Office of Emergency Services. OES will notify local authorities. A watch is expected to occur about once every 10 years.

The detection of magma movement at shallow depths triggers condition **orange** and indicates that an eruption is likely. The USGS will issue a Geologic Hazards Warning to the governors of California and Nevada, as well as others charged with advising the public.

Condition **red** indicates an actual eruption. The USGS estimates such an alert will be issued once every few centuries.

What to Do Before, During and After

Before

- [] Learn the meanings of designations issued by the USGS and other agencies.
- [] Discuss response and evacuation plans with local officials and family members.
- [] Update emergency kits. Include dust masks.

During

- [] Listen to the radio or watch television for instructions and information.
- [] Cooperate fully with local officials.
- [] Avoid the volcano site.
- [] Stay upwind from the volcano.
- [] Watch for flying rocks and mudflows if there's an eruption.
- [] Unless roof collapse is likely, stay indoors if ash is falling.

After

- [] Avoid driving in heavy dust.
- [] Eliminate heavy ash and dust from rooftops and rain gutters.

Sources included the USGS web page, the USGS fact sheet "Reducing the Risk of Volcanic Hazards" and the FEMA publication "Are You Ready? Your guide to disaster preparedness."

Committee Reports

Visual Communications

Coordinator: Jim Carter (WB6HAG)
Web page:
[http:// www.qsl.net/wb6hag/](http://www.qsl.net/wb6hag/)

Tri-Agency - We have received technical assistance from a SCRRBA member in obtaining frequency coordination. Two frequencies have been provided and transmission tests will be conducted this month. In the meantime, the Tri-Agency program still remains on hold.

Loma Ridge Antenna Party - Last month, Jack Barth (AB6VC), Ken Mirabella (KM6YH) and Jim Carter (WB6HAG) identified Loma Ridge coax feeds in our RACES room and their associated roof antennas. Ken marked and tagged each coax line as Jack and Jim

identified them. We now know what antenna connects to which radio. Jack is creating a drawing that identifies each antenna and its associated coax feed number. The drawing will be placed in the RACES room for future reference.

This exercise was in preparation for installing an ATV com. channel antenna in order to obtain maximum horizontal separation and isolation from our packet and APRS transmitters. Because of their frequency proximity to the ATV com. frequency, we may require in line filters for each operating radio.

We plan to have this project completed before the October drill.

October Drill - ATV communications

will be included in this years County/City drill. The visual communication operating channel will be on 426.25 MHz simplex, using the voice coordination frequency of 144.345 MHz. The drill will allow field operators to send video to Loma Ridge and City RACES to send video between themselves in order to identify signal paths and limitations. This will be a video first for all of us.

2.4GHZ Activity - A commercial grade 2 gig receiver with a saw filter for improved selectivity has been obtained and is presently being evaluated for possible use in our Tri-Agency program. We are striving to obtain more of these as they become available.

(Field Day from page 2)

ceptable number considering the amount of down time on some of the stations. We succeeded in earning 600 of the possible 1100 bonus points.

For next year I would like to see us add at least 300 if not 500 additional bonus points. The bonuses we missed this year were: the W1AW Field Day message, sending a message to the ARRL Section Manager, relaying ten messages for the ARRL National Traffic System, packet and satellite contacts. By earning all the possible bonus points as well as recruiting more members and helper operators we will be able to increase our score.

We can also improve the training aspects of the event by preparing the training scenario well in advance of the event. As an example we could stage the training in a format similar to an emergency call out (activating our pager net, running a roll call early Saturday morning, assigning an IC, etc.).

Editor's Notebook

Frequency Change

Both of our OCRACES Sierra Peak 440 repeaters have been changed to comply with the new band plan. 449.175 is now 449.180; 449.675 is now 449.680. Please update your programming for these channels.



Rob Grimes, KF6ETS, the 16 year old son of Chief Radio Officer Ray Grimes, W6RYS recently soloed an airplane at the Long Beach Airport. His instructor commented that Rob was the youngest student pilot he had ever instructed.



HAMCON

The ARRL SW Division Convention on the Queen Mary in Long Beach October 1-3!

The FCC "Enforcer," Riley Hollingsworth, K4ZDH, will be the banquet speaker on Saturday night and will conduct the FCC Forum Saturday afternoon.

As information about the convention has been created, it has been added to the convention web site at <http://www.qsl.net/rrlsw/hamcon/>

A flyer about the convention can be downloaded from <http://www.qsl.net/arrlsw/hamcon/posters.html#ads>

Good luck to Amish Parashar, KE6EZM and Tom Mirabella, KD6AAN, both are off to increase their knowledge of the world and make it a better place. Amish will be attending Dartmouth and Tom will be attending Cal Poly Pomona.



Meetings:

General: First Monday of Month
(open to public) @ 1930 hr

Meeting Location:

OCSD/Communications
840 N. Eckhoff St. , Suite 104
Orange, Ca. 92868-1021

County RACES Frequencies

6 m: 52.62 MHz output, 52.12 MHz input, 103.5 Hz PL

2 m: 146.895 MHz output, 146.295 MHz input, 136.5 PL;
(primary net Mondays, 1900 hrs.)

2 m Packet: 145.07 MHz
(1830 – 1900 hours)

1.25 m: 223.76 MHz output, 222.16 MHz input, 110.9 Hz PL

70 cm: 449.180 MHz output, 444.180 MHz input, 107.2 Hz PL (private)

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Did You Know?

Intrinsically Safe Revisited

by: Ray Grimes, W6RYS
Chief Radio Officer, OCRACES

The topic of Intrinsically Safe Rated (ISR) portable radios had been discussed in the past but it is so important and so often overlooked or misunderstood that it deserves repeating. ISR simply means that a particular hand-held portable radio (or other portable device: flashlight, video camera, etc.) and its accessories have been tested and approved by a recognized testing and certification house as a device which will not produce an explosion in certain specific atmospheres. Most portable transceivers these days are solid state, so worries about sparks from Push-to-Talk relays are mostly a thing of the past. A radio may have been certified to safely operate in certain atmospheres such as gasoline vapors, grain dust, methane, alcohol, pure oxygen, etc. This radio would not be approved for use in any other unlisted atmosphere. This is an important distinction. Also, this radio would never be certified to operate in proximity to blasting caps or other electric detonated explosive devices. Infrared communicators are often used in mining applications in lieu of RF equipment.

ISR Radio equipment must be repaired in manufacturer-approved service facilities, with any unauthorized modification voiding the ISR approval. Adding an ISR battery to a radio transceiver does not legally make an ISR radio, though the radio may technically meet all requirements and be electrically identical. The radio equipment manufacturer's paperwork is what makes the difference.

Underwriter's Laboratories (UL) and Factory Mutual (FM) are the major recognized safety testing and certification laboratories performing ISR testing, though others may also offer such services. Not all government agencies accept certification testing work by the smaller laboratories, but most

all agencies accept UL and FM. There is also Federal Bureau of Mines specified ISR certification for the atmospheres found in mining applications (coal dust, metallic powder dust, methane, etc.).

A portable radio often is no different than a standard product except for a special current-limited and fused battery which has been laboratory tested with its accessories. Some portable radios suffer transmitter power output de-rating when used with an ISR battery. Change of battery to a non-ISR rated battery, a battery which is ISR for a different product, or use of accessories which have not been tested and certified as ISR compatible, will void the ISR approval for that product. This can become a major safety and liability issue.

It is important to have an understanding of what an ISR radio is all about, and to know where it is required. As a point of reference, no amateur radio portable product bears ISR approval, though an ISR commercial radio could be used on amateur radio frequencies. This means that amateur radio portables must not be used in places such as hospital operating rooms (pure oxygen, ether), HAZMAT spill locations, mine shafts (methane), or at accident scenes where gasoline may be spilled (fuel vapors). All fire department radios should be ISR models. Most police radios are not. This raises some concern about police responding to an incident and entering areas where the radio transceiver could induce an explosion. No base station equipment is ISR. This small detail has been the downfall of those who had installed base station equipment in ship yards where grain was being unloaded or where base stations were installed in grain silos in the Midwest (the tallest structure around).

The best policy regarding explosive atmospheres is when in doubt, leave the radio behind.

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