



# County of Orange RACES

# NetControl

September 1998



Newsletter of the County of Orange Radio Amateur Civil Emergency Service

## Top Stories

### OCSD Aero & SAR Mutual Aid Air Crash Scenario, Sunday August 16, 1998

Summary by: Nancee Graff, N6ZRB  
Detail by: Capt. Ray Grimes, W6RYS  
Lt. Ken Mirabella, KM6YH

#### SUMMARY

Twelve OCRACES members participated in this drill., KE6EZM, WB6HAG, KD6IOV, WA6ITD, W6RYS, KN6UX, AB6VC, KA6WNK, KM6YH, N6ZAV, N6ZRB, and KC6ZSF.

The scenario simulated a commuter aircraft disaster. There were 6 victims including the pilot and 5 passengers. The crash occurred in rough terrain. The victims were hidden by brush and had to be found on foot. One victim was declared as DOA and one was later found by the Search and Rescue team wandering in the area. Search and Rescue team members provided

triage and the victims were transported by ambulance to local area hospitals.

All of our efforts, such as ATV, APRS, Packet, Shadowing and Communications were greatly appreciated by the OCSD Search and Rescue team.

After the event we had a debriefing and lunch with the Search and Rescue team

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### OCSD SAR, Missing Person

By: Mike Krueger, KC6ZSF  
OCRACES Assistant Radio Officer

### OCRACES handles communications for multi-agency search.

The OCSD Search and Rescue Unit (SAR) was searching for evidence of a 71-year-old male that had been missing

## Sept. Meeting

OCRACES will not have a General meeting for the month of September. The OC-RACES staff meeting will be a field trip to John Wayne Airport. All members are encouraged to attend. Details of where to park and of the meeting location are attached to the copy of **NetControl** sent to each of the OCRACES members.

This meeting is for members only. Other attendees must be cleared through Robert Stoffel.

from his Laguna Hills home for about 4 weeks. His car had been located about 3 weeks ago, crashed into a telephone pole in a remote area near De Luz, outside of Temecula (TB 976-J4). There was no indication of the subject near by. A preliminary search had previously been conducted in the immediate area with no results. Investigators requested that a wider area be searched for clues or evidence by the

*(Continued on page 4)*

## Upcoming Events

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|---------|--|
| Sept 7  | General Meeting, NO MEETING                |
| Sept 14 | Staff Meeting, John Wayne Airport          |
| Sept 19 | Red Alert Expo, Laguna Niguel              |
| Sept 29 | John Wayne Airport Drill, 10:00 AM         |
| Oct. 5  | General Meeting, Alternate EOC             |
| Oct. 12 | Columbus Day, NO NET, NO Staff Meeting     |
| Oct. 17 | County/City RACES Drill                    |
| Nov. 3  | Election                                   |
| Nov. 14 | La Palma Days Parade, Mutual Aid Requested |
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## Captain's Corner

By Ray Grimes

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This August has perhaps been the most active month in years for OCRACES. I calculate around 200 hours contributed by our members this month to support several special activities, not including meetings. Some of our members have been asking for more activities and involvement. Well, be careful of what you ask for, as you might get it! We participated in the first OCSA Reserves Aero Squadron/Search and Rescue mutual aid exercise, a simulated commuter air carrier crash in Irvine Park. While this event ran from approximately 07:00 AM to 1:00 PM, our involvement went well beyond that, with significant planning, discussions, meetings, technical preparations, and take down and storage of equipment after the event. Having dazzled OCSA with our technical abilities and equip-

ment, five OCRACES personnel were requested to assist in the rural search for a missing person. That consumed the better part of a Saturday, in addition to planning meetings and the preparation of equipment. Almost simultaneously with the OCSA missing persons request, OCSA Communications asked for OCRACES to assist in the search for a source of RF interference which was affecting Harbor Patrol's frequencies in the Newport Beach area. That too consumed OCRACES members time and required some planning and gathering of equipment. While these activities are the very reason many of us joined OCRACES, they are very time-consuming. Some members are advocating that we form a closer relationship with the agencies we support and become more involved than we presently

are. While free technical support is always welcomed by the recipient, we need to assess our manpower and resources and carefully consider the impacts to our personal lives in offering more of what we all have so little of, that is, our spare time. This also raises an old issue in that we must recruit more members to even maintain the pace that we are presently at. We as OCRACES need to achieve a headcount which allows us to support a number of events comfortably, without taxing the few people who faithfully respond to most every callout. Think about these issues and prepare to discuss them at our next Staff Meeting. In the meantime, discuss OCRACES with your friends and acquaintances, and let's see if we can recruit about 25 new members. The challenge is yours!

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## ECC News and Views

by Robert Stoffel

I'd like to offer a word of thanks to OCRACES personnel who participated in a variety of events this past month. Our staff meeting, coordinated by Mike Krueger and Dave Wilson, featured a tabletop RACES drill that started with the activation of the pager net, continued during our weekly RACES net and concluded with an exercise at the Loma Ridge EOC. This was Part 2 of the tabletop drill we started at the previous staff meeting.

The following Saturday, Jim Carter, Jack Barth and Ray Grimes presented Amateur Television at the ARRL Convention in San Diego. Sunday, Joe Selikov participated in the RACES/ARES panel. OCRACES personnel attending the convention included Mike Krueger, Chris Storey and Roger Thomas.

On Sunday, August 16, 1998, OCRACES provided communications support for the Sheriff's Search & Rescue/Aero Squadron Reserves exercise. APRS, ATV and voice

communications were demonstrated. Participants included Jack Barth, David Boehm, Jim Carter, Nancee Graff, Mike Krueger, Floyd Martin, Ken Mirabella, Marty Mitchell, Amish Parashar and Chris Storey.

On Thursday, August 20, 1998, Ray Grimes and Ken Mirabella represented OCRACES at the monthly meeting of the California Public-Safety Radio Association (CPRA). The meeting featured a panel presentation on RACES communications with Ray handling the moderator duties. Ken presented information on OCRACES while representatives from Los Angeles County, Riverside County and State ACS spoke about their programs. The program was very well received, and we have been asked to provide a similar presentation for CPRA later this year.

On Saturday, August 22, 1998, OCRACES was activated by Sheriff Search & Rescue Reserves to provide voice com-

munications support for a missing person search in a rural area of Temecula. David Boehm, Mike Krueger, Ken Mirabella, Chris Storey and Roger Woodcock responded.

Our last significant activity in August involved a request from OCSA/Communications to locate interference on several low band public safety channels. Ray Grimes, Robert Barris and Jim Carter provided a significant amount of time over several days using DF equipment in the coastal areas of Orange County attempting to locate the source of this interference. After a seven hour DF marathon on Tuesday August 25<sup>th</sup>, the source was determined and turned over to OCSA/Communications personnel for resolution.

**Thanks to everyone for their participation in what became a very busy month!**

**Congratulations** to OCRACES member Ralph Sbragia, KD6FYT who has completed all requirements for certification as a Certified Safety Professional (CSP). This highly respected certification is awarded to individuals who meet academic and professional safety experience requirements to in-

clude passing two examinations at seven hours per exam. The examinations cover engineering and management aspects of safety, applied sciences, legal and regulatory matters, professional affairs and ethics, and other safety related topics.

The Certified Safety Professionals specialize in protecting workers, the public, property, and the environment by identifying, evaluating and controlling hazards. The CSP manages programs aimed at compliance with safety principles and federal, state and local laws and regulations.

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## Event Coordination

### Mutual Aid

**La Palma RACES**, La Plama Days Parade, Saturday, November 14, 1998. Event time 0600-1400 in the City of La

Palma.

Contact: Susan Atkinson

Home: (714) 527-5706

Work: (714) 385-7439

**Red Alert Expo** – September 19, 1998  
TJ Maxx Shopping Center in Laguna Niguel.  
Set-up 8:30 – 9:00 AM. Hours of operation 10:00-15:00. Contact Lt. Joe Selikov, KB6EID for further information.

*(OCSD AERO/SAR from page 1)*

at Irvine Regional Park, where the drill was held. They said that they were very impressed with our capabilities and participation in the drill. They invited us to join them in a real search and rescue with them on August 22 in the South County. They also suggested that we come to their meetings and that they would like to come to ours so that we can learn from each other.

Job Well Done,

73 de N6ZRB, PIO

**Submitted by Ray Grimes, Chief Radio Officer**

**IT WAS SO REAL!** (This was a drill)

On August 16, 1998 at 08:00 AM a commuter airliner inbound to John Wayne Airport with 6 souls on board crashed somewhere in rugged terrain behind Tustin (only a drill). Numerous 911 land-line telephone calls were handled at the Complaint consoles at Control One and at the CHP, from mobile and portable cellular telephone users. Conditions at the time of the crash were low overcast, with an estimated ceiling of 500 to 1000 ft. AGL and visibility 3 miles in mist. Emergency personnel did not immediately know the exact position of the crash scene. OCSD Aero Squadron aircraft were dispatched from the Fullerton Municipal Airport to locate the crash scene by homing-in on the ELT (Emergency Locator Transmitter) and reporting the coordinates to SAR command at Loma Ridge. At approximately 09:00 AM the crash scene coordinates were located by Aero Squadron aircraft flying above overcast, providing a position fix to OCSD/SAR via aircraft band radio. SAR established a mobile command post at Loma Ridge and dispatched mobile units toward the coordi-

nate fix. At around 09:30 AM OCSD SAR vehicles entered Irvine Park and proceeded to locate ELT1 (general vicinity ELT). Shortly after, ELT1 was turned off and ELT2 was activated at the actual incident site. SAR personnel on foot and in vehicles homed-in on the ELT2 signal and soon located the crash scene. SAR personnel provided triage and summoned additional rescue personnel. Shortly thereafter, other SAR units arrived and assisted in medical treatment and stabilization of victims for transport. One "walking wounded" victim was eventually located by SAR personnel and received medical attention. The crash site was then secured for NTSB and FAA personnel, with SAR units then escorting victims to local hospitals. A lunch/debriefing occurred under in the shade of trees at the base of the simulated crash scene. OCRACES had its own initial debriefing and an opportunity to exchange ideas with SAR staff. I would like to personally thank and congratulate each OCRACES member who participated in the first joint Sheriff's Aero Squadron/Search and Rescue exercise, with special recognition to Ken Mirabella (acting OCRACES Incident Commander) and Mike Krueger (OCRACES Training Officer) for their excellent leadership and guidance. OCRACES brought a lot to the party in terms of technical expertise and a wealth of "hi-tech" equipment. We provided APRS, ATV, voice communications, and an airborne portable repeater. We nicely demonstrated our ability to mobilize and adapt to a dynamic situation. This type of exercise is as close to reality as it gets. We had to be flexible, problem-solving "on the fly" as situations changed, being adaptable as demands on our services were redefined, and being able to endure the harsh conditions of a wilderness environment in the heat of summer. While everything didn't go perfectly, it went very well. We learned

a lot, and will undoubtedly perform even better next time.

There will be a next time too! We quite obviously pleased and surprised the Sheriff's Department with our ability, and received some great OCRACES exposure.

**Submitted by, Ken Mirabella, Assistant Chief Radio Officer**

During the Sheriff Aero-Squadron / Search and Rescue drill OCRACES provided assistance on many fronts.

First, Jim Cater, WB6HAG, received ATV video at the Sheriff's SAR field CP, via his ATV equipped four-wheel drive Suburban. Jack Barth, AB6VC, provided live ATV video from the crash scene. The remarkably clear picture received at the CP surprised many of the Sheriff personnel.

Second, APRS (Automatic Position Reporting System) was deployed to track two SAR ground search teams and one four wheel drive Sheriff vehicle.. Marty Mitchell, N6ZAV, Team 1 & Chris Storey, KA6WKN, Team 2 wore portable backpack APRS beacons as they searched with SAR teams on foot to the crash scene. Marty and Chris also served as Team communications personnel operating multiple radios on multiple frequencies. David Boehm, KD6IOV, served as a communicator for Team 3 in the four-wheel drive Sheriff vehicle, which also had an APRS beacon. The SAR CP via a laptop computer and APRS receiver monitored all of the APRS beacons on detailed level street maps from the back of Ken Mirabella's Expedition. This enabled the CP to see the minute by minute progress of each team during the search.

Third, Mike Krueger, KC6ZSF, served as Communications Unit Leader at the CP

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(OCSD AERO/SAR from page 3)

and handled multiple radios at once, including ground to air radios, Sheriff frequencies and multiple ham bands. A job well done by Mike.

Fourth, Nancee Graff, N6ZRB and Flyord Martin, WA6ITD, served as communications personnel at the Loma Ridge EOC RACES room, where they handled voice communications and monitored the APRS beacons on the OCRACES APRS computer. Amish Parashar, KE6EZM, worked at the EOC RACES room and fed live ATV video throughout the Loma Ridge facility so that Sheriff personnel could also monitor the drill.

Ken Mirabella, KM6YH, served as the RACES Incident Commander at the Sheriff SAR CP.

This drill enabled OCRACES to accomplish many Firsts:

1. First time APRS backpacks were made and utilized.
2. First time a portable ham repeater was placed in an Aero-Squadron airplane circling over head.
3. First time another portable repeater was tested from the SAR CP to the drill site.
4. First time monitoring APRS at Loma Ridge RACES room on street level maps.
5. First time OCRACES provided live video to the Loma Ridge EOC.

I would like to thank all the OCRACES members who participated in the drill and who took the time to prepare their equipment so that this drill would really be a success.

(SAR, Missing Person from page 1)

OCSD SAR unit.

Five OCRACES members met members of the Sheriff SAR team at 5:15AM for the caravan to the site. When we arrived at the location, the temperature was already in the 80's and climbing. Members of the OCSD Mounted Unit, Riverside County SAR and Temecula PD were on site to provide mutual aid during the search, and several Mobile Command Post vehicles and horse trailers lined the narrow, twisting rural road.

OCRACES members assisted by establishing a portable COR-Box repeater on a nearby ridge for use by search team hams, operating all command post radios, and shadowing foot search teams to provide communications back to the Command Post. The incident command post was established at the intersection of Vista Del Mar and Via Los Ventos, near the location where the vehicle crash occurred. Five teams deployed on foot into the chaparral, as did 4 mounted teams and several all-terrain-vehicles. Each team was equipped with a law radio on the simplex White Channel and a ham operator. The incident dispatcher monitored all channels including the canine search teams and had communications with the Riverside County emergency communications center via an 800 MHz repeater if needed.

As search teams made their way through the brush, at least one team encountered a rattlesnake. The lead investigator warned all personnel about the rampant poison

oak and possible marijuana patches nearby, and also the numerous species of wildlife in the area. The search covered a radius of about one half mile from the command post, but search teams were prepared to cover a much larger area. About 90 minutes after the first team left the command post, the search was declared over and all teams returned to the command post for lunch, debriefing and demobilization. OCRACES members checked out of the CP at approximately 10:20AM.

OCSD SAR management has made several positive comments about our recent participation with the unit. They are looking forward to using OCRACES in future missions and extend their thanks and appreciation to our members. I'd like to recognize the members that participated in this event and also offer my thanks.

Ken Mirabella provided equipment and transportation for OCRACES members and deployed the portable repeater system in an off-road location. David Boehm assisted Ken with equipment installations. Chris Storey was the incident dispatcher and handled many busy radios and kept detailed logs of search team and CP activities. Roger Woodcock was assigned to Search Team 1 at the last minute, and provided all communications for teams 1 and 3 during the search. I would also like to recognize the commitments of John Roberts, Dan Welch and Harold Robinson. These OCRACES members were on stand-by to respond on short notice if we needed them.

Congratulations to OCRACES member David Gray, WB6HUG, and Stacey Butren, who exchanged marriage vows at the Calavary Chapel of Costa Mesa on Saturday, August 15, 1998. A reception was held after the ceremony at Angelo's and Vinci's Ristorante in Fullerton. Congratulations to the newlyweds!

## ESP Sept. '98 Volcanoes



Volcanic eruptions are not as common as earthquakes in California. Like earthquakes, however, they have played a significant role in shaping the landscape along the eastern Sierra Nevada Range. Mammoth Moun-

tain, the Mono Craters and the Inyo Craters owe their existence to volcanic activity.

Scientists estimate that the average interval between moderate eruptions is a few hundred years. No one knows for sure when the next eruption will occur, so we do need to be prepared, just in case. Volcanic activity can produce flying rocks, mud flow, heavy ash, dust and roof collapse. If you are in an area requiring evacuation, listen to the radio for news

and instructions.

For more information on the Earthquake Survival Program (ESP), contact your local Office of Emergency Services.

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.

# Committee Reports

## Visual



## Communications

Coordinator: Jim Carter (WB6HAG)

Web page:

<http://www.qsl.net/wb6hag/>

**Tri-Agency Update** - Members of the Tri-Agency committee will be meeting in Long Beach this month to review a frequency feasibility study. In preparation for this meeting, Joe Saddler (WA6PAZ) President of SCRRBA has provided assistance in identifying frequency availability for linking EOCs. OCRACES members Jack Barth (AB6VC) and Jim Carter (WB6HAG) are conducting linking tests, using 426 MHz, 900 MHz and 2.4 GHz to determine which frequency bands would satisfy our requirements. Their test results will be presented to the committee.

**ATV Supports Sheriffs Drill** - Amish Parashar (KE6EZM), Jack Barth (AB6VC), Jim Carter (WB6HAG), and Ray Grimes (W6RYS) supported the Sheriff's Department August 16<sup>th</sup> drill. Amish operated net control located at the Loma Ridge ATV operating position, Jim operated the ATV Command post (CP) at the Sheriff's CP which was located outside the EOC, while Jack and Ray sent crash scene video. It was interesting to note P5 pictures were received at both the EOC and CP locations. The two mile separation of the sites, demonstrated the effectiveness and use of low power ATV transmissions.

Several days after the drill, positive comments were received from LADCS ATV members who were monitoring our 144.39MHz Comm. Channel. You never know who is monitoring.

**Video Taping of General Meetings** - Members of the Visual Communications Committee video tape each OCRACES general meeting for our member Gary Stirrat (K6OE). This tape is available for 30 days following each meeting for any OCRACES member. Please contact Jim Carter (WB6HAG) if you desire a copy.

**2.4 GHz Project:** Jack Barth project

leader, reported that the project is continuing but is on hold until we can obtain frequency coordination approval. New test equipment with 2.4 GHz capability was obtained to provide the necessary measuring capabilities in order to complete WaveCom modifications.

**ARRL Convention** - Visual Communication Committee members Ray Grimes (W6RYS), Jack Barth (AB6VC) and Jim Carter (WB6HAG) presented "Using ATV in RACES Events", at the San Diego Southwestern ARRL Convention. The presentation was well received by those in attendance.

**Duct Tape?** - Amish Parish (KE6EZM) found another use for duct tape. During the August Staff meeting, it was reported that our ATV monitor located in the Loma Ridge RACES room developed a behavior problem. The TV would either turn itself off or randomly select its own operating channel. This behavior came about after relocating the TV from atop the 6 foot cabinet in the RACES room. Many of us believed that stray RF was causing this condition. Amish found by placing his hand over the TV's remote control IR receiving window, the behavior problem went away. Placing *duct tape* over the window solved the problem. Lesson learned: The IR controlled light switch in the RACES room was transmitting data for motion detection to keep the room lights on. At the same time, it was randomly controlling our TV monitor. This occurred because the TV set was relocated in a line-of-sight position of the controller. Thanks Amish for solving this puzzling problem!

**Remote Control ATV Cameras** - Jack Barth (AB6VC) started a new ATV project that will allow small CCD video cameras with attached ATV transmitters to be remotely controlled by DTMF signals. This project may be used during the Baker to Vegas event.

**ATV User Instructions** - Jim Carter

(WB6HAG) generated a user instruction for the ATV equipment located in the Loma Ridge RACES room. The instruction supplements the ATV Operations Manual and provides easy to understand instructions for activating the ATV equipment. Copies will be distributed during the September staff meeting.

**Members Needed** - If you would like to learn about ATV or provide assistance to the Ham Fax development, please contact Jim Carter (WB6HAG) for additional information.

## Direction Finding

Direction Finding Coordinator:

Robert Barris (KD6IFZ)

Email: [rbarris@quicksilver.com](mailto:rbarris@quicksilver.com)

### Mysterious Real World T Hunt

By: Robert Barris

Recently OCRACES was approached to provide assistance in locating an ongoing interference problem experienced at the Harbor Patrol station in Newport Beach. Their problem was a continuous, occasionally frequency-unstable "buzz" which affected both of their primary frequencies (in the 45 MHz region).

Ray Grimes W6RYS, Jim Carter WB6HAG, and Rob Barris KD6IFZ volunteered to try and help narrow down the source of the problem, helping Howard Newton N6WOW of OCSD Communications who had been working on the problem for some time already.

Like almost any investigation, a number of suspects and potential causes were visited one after another, some logically, some by accident, and were finally eliminated one by one.

First step for the team was to try and determine if the source of interference was from equipment in the Harbor Patrol building itself, or from an external source such as a radar site, or malfunctioning

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*(Direction Finding Continued from page 5)*

boat radio, or perhaps a leak from the cable TV network.

Ray Grimes visited the area prior to the weekend and did some basic listening, observing that the signal had a strong 60Hz buss to it, sounded like a video carrier, and was rather frequency unstable, occupying a fairly wide (1-2MHz) swath of spectrum. At one point Ray believed he heard a stronger version of the interference near the Hoag hospital, a few miles to the northwest, and based on that report Hoag became the first "suspect".

Barris and Carter each passed through the Newport/Harbor area several times on the weekend, using scanners and other radios to try and pick up either the (roughly) 45MHz signal or perhaps one of its harmonics. No luck there, the interference was not audible to either of them. Where did it go?

The team started to believe that perhaps the interference was coupled to a device that was only operated during the week, further reinforcing the "Hoag Hospital" hypothesis.

But that notion was soon dispelled by the Monday visit to the Harbor Patrol building, at which time they informed Grimes and Barris that the noise had been nonstop all weekend. As it turned out, this should have been an excellent clue that the noise source was either close to the station or inside it, but like many such observations it only became obvious later.

Grimes, Barris, and Newton spent a fair bit of time Monday afternoon inside and outside the Harbor Patrol building, trying to do a number of things:

1. Characterize the signal by its sound and modulation
2. Determine if the source was inside or outside
3. See if any particular piece of equipment, when switched off, affected the signal.

The team soon discovered that trying to nail down a signal source inside a live communications shack can be very challenging. Using a couple scanners, an IFR spectrum analyzer, a Tek scope, and a

variety of hand radios and attenuators, the team went through many possibilities, and turned off a lot of equipment in the process, and yet the problem persisted.

Every single piece of wire in that closet seemed to be awash in this wideband 45MHz signal. The spectrum analyzer, when connected to the primary low band antenna input from the external tower, clearly showed the broad "hump" of the problem signal, which exhibited both AM and FM characteristics.

A time-domain examination also showed very peculiar modulation, while there was clearly a 60Hz component to it which was audible, the signal also contained very high frequency "spiky" energy (not to mention asymmetry of modulation). Was it video? Bad AC power? Computer noise?

The fact that there was an assortment of digital and radio gear in the shack which also radiated noise in the same part of the spectrum made it near impossible to home in on where the problem signal was strongest.

The team soon decided to go outside and have a listen to the area surrounding the antenna tower. Climbing atop the secondary garage building, adjoining the main building, Grimes and Barris had no problem picking up the problem signal, full quieting on their handheld radios. At this point they began to suspect that the signal source was outdoors, but there was always the possibility that the source was still inside the building and merely radiating out to the world through the number of coax feeds going up to the tower right next to the garage.

The noise was strongest at the end of the garage building nearest the main antenna tower, which held a number of communications antennas as well as a simple "weather station" windspeed/direction sensor. Suspecting that the power supply in the wind meter might be poorly shielded, they asked to turn it off, which was done to no effect, the noise persisted.

Further sniffing led them to the other end of the building, where the signal was

stronger - and right there on the rooftop was a long run of coax connected to a dockside security camera.

60Hz? Video? Long cable run near the low-band antenna tower? It all seemed to make perfect sense. Grimes and Barris asked when the camera had been installed, and were told a month ago, which correlated well with the start of the interference problem (July 17 1998). With a big grin on their faces they asked for the camera to be turned off, a grin which vanished just as quickly when the noise persisted on all the console radios.

One thing that made the problem so pernicious was the fact that the radios at the station did not offer PL squelch and would unsquelch on any detected carrier.

The team started to wish they could power down the whole building for a few seconds to make a fast "inside or outside" determination, but this was rejected as impractical. In hindsight, seeing how well the signal propagated through all the cabling, it might not have yielded the right answer anyway!

A complete on-foot sweep of the building's perimeter was hampered by a large dockside construction area which was sealed off with chainlink and warning stickers. Classic recreational T-Hunt instincts may have bamboozled the team here as they didn't think of trying to go past the fencing...

Then came the report that would add a few more hours in the hot sun to the team's efforts. Another harbor station in Dana Point reported hearing the same kind of interference on their receiver, many miles away. This was the smoking gun, the source had to be fairly strong and located somewhere that could reach both Newport Beach and Dana Point.

With radios, maps, and a 45MHz whip on the trunk lid, Grimes and Barris set off on the biggest wild goose chase of the day. After a complete round trip on PCH, down to Dana Point and back, they came to the conclusion that the Dana Point report had been a red herring, whatever they had heard on their system might have had a 60Hz buzz to it, but there was certainly no signal source in between the two sites that could be the culprit. The radios in Dana Point were clean and certainly not picking up anything like the steady full scale 60Hz drone observed in

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Newport.

The Icom R8500 scanner and its quarter-microvolt sensitivity was startling in its ability to pick up dozens of cordless phone conversations in the Laguna/Dana Point area, but alas, no hint of the problem signal.

It was getting late in the day and the team needed some results fast.

Returning to the Newport Harbor station, Grimes and Barris went back to the "nearby signal source" hypothesis. To try and get a better handle on the behavior of the signal, they switched gears, using the IFR spectrum analyzer connected directly to the 45MHz whip antenna. With Grimes driving and Barris keeping the IFR from tipping over in the front seat, the team proceeded to canvass the area immediately surrounding the harbor station.

To no ones' surprise, they found a fair number of distinct signals in the region extending all the way down to 39MHz, and as high as 49-50MHz, signals with all the hallmarks of the interference source: 60Hz buzz, wide banded, steady strength. The occasional "pip" on the S/A could be seen as legitimate stations keyed and unkeyed their radios, but the tall, wide bumps of the mystery spectra were unmoved.

Driving uphill from the harbor station, one residence in particular was located that seemed to have the highest radiated strength of all the detected emissions in the 45MHz region.

Upon contacting the occupant and making the needed introductions, a simple sweep of the home was conducted, ultimately zeroing in on the residents' new digital-cable box, which was giving off the 45.740MHz signal that the team had picked up with the S/A in the street.

This signal seemed to be coming from every run of coax from the sidewalk all the way through the house. The resident indicated that he had had this new digital cable service for about a month, roughly coincident with the onset of noise at the harbor station. Considering that an active attenuator was needed to get through the last 20 feet of sniffing and to the cable

box (with an estimated 50 dB of attenuation) it seemed clear that this was a red hot suspect.

The team began to believe that either this residence (which was opposite Bayside Drive and directly uphill from the harbor station) or the entire cable TV system in the area may have been responsible for the interference.

Something as simple as poor wiring, corroded contacts, or maybe a malfunctioning distribution amplifier in the neighborhood could be giving off this unwanted signal.

The neighborhood's switch to "digital cable" also figured large in the team's thinking, it was conjectured that digital cable signals might indeed carry the distinctive 60Hz buzz due to video's frame rate, and yet not resemble conventional video modulation due to the all-digital encoding. The cable company began to loom as a potential culprit, and Barris and Grimes wound down their efforts for the day.

The next day Howard Newton returned to the scene and performed a far more thorough on-foot sniff expedition, covering both the immediate area of the Harbor Patrol building as well as dockside, and lucked into a most unexpected find: an AC-powered battery charger connected to a jetski, covered under a tarp.

At close range the 45MHz interference was incredibly strong. Could it be that simple? It vanished the instant the charger was unplugged.

The owner indicated that he "plumb forgot about that charger under there, it must have been running for a few weeks or more." And with this simple step the Harbor Patrol radios were interference free once again.

As with all good hunts the answer makes perfect sense once you find it.

Well, maybe not perfect sense (who would expect a strangely behaving battery charger to generate full scale 45 MHz noise, covering one critical channel, for weeks on end?)

## Did You Know?

### Invisible and Deadly

By: Capt. Ray Grimes, W6RYS

Have you ever experienced a headache or dizziness when sitting in heavy traffic? How about flu-like symptoms or extreme irritability? You may have experienced carbon monoxide poisoning. Carbon monoxide is a tasteless and odorless gas which attaches to your body's hemoglobin. The human body's hemoglobin has a greater affinity for carbon monoxide than for oxygen, readily replacing oxygen molecules. The result is hypoxia, or oxygen starvation. In its lesser state, carbon monoxide poisoning is subtle and discomforting. At moderate levels, you might observe that a companion is exhibiting bluish finger nails and lips. At the upper extreme, it can kill you! At moderate levels it will compromise your senses, affect your night vision, and slow your responses. These are the ingredients for a traffic accident. In fact, there is reason to believe that carbon monoxide poisoning may be a contributing factor in one-vehicle fatal traffic accidents.

How does carbon monoxide collect and where might you be exposed to it? At home, particularly during cold weather, improperly installed and operating fuel type heaters may release carbon monoxide into living areas. A number of tragic deaths occur yearly where people use portable barbecues and cooking appliances for home heating. There are also accidental deaths where people leave cars running in attached garages (usually on cold mornings). Modern building codes greatly restrict or prevent installation of doors which connect attached garages to living spaces, helping to prevent spread of accumulated carbon monoxide gas. Aside from having heaters inspected periodically by an expert, it is advisable to always leave windows slightly open, to provide a source of fresh outside air. In a vehicle, usually in cold weather, a defective exhaust or heating system would be the prime sources of carbon monoxide. As with safety practices for the home, it is advisable to leave a vehicle window slightly open to allow some fresh outside air to enter. Sitting in stopped traffic for long periods of time is a more difficult source of carbon monoxide to avoid. At

## Meetings:

**General:** First Monday of Month  
(open to public) @ 1930 hrs.

**Staff:** Second Monday of Month  
(members only) @ 1930 hrs.

## 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: 449.175 MHz output,  
444.175 MHz input, 110.9 Hz  
PL (private)

## OCRACES Web Page:

<http://www.ocraces.org>

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# Editor's Notebook

**Use of Codes** – Just a reminder about the use of codes on Amateur frequencies. The FCC provides RACES with the ability to help municipalities and emergency organizations during an activation or drill. During regular times we are expected to follow the rules imposed on our class of license. These rules forbid the use of non authorized codes. Specifically 9 and 10 codes. These codes are a temptation to use since they define exactly what you want to say in a short message. We have all fallen to the temptation, including myself.

## Increased risk of local earthquakes

This web site has some new information about earthquakes on the west coast.

[http://www.seattletimes.com/news/local/html98/quak\\_080498.html](http://www.seattletimes.com/news/local/html98/quak_080498.html)

## From: Navy To: All ships at Sea

1. This message is to heighten your awareness and discuss preparations for the November 1998 and 1999 Leonid meteor storms.  
2. Each November, the earth crosses the path of the comet Temple-Tuttle. As the earth passes through the debris trail from this comet, the Leonid meteor shower occurs. Typically this results in about 15 meteors per hour entering the Earth's atmosphere. But, on certain occasions the meteor activity can reach "storm" levels, with thousands of meteors observed per hour. The comet's orbital period is approximately 33 years. This year, and next, will be the most intense meteor storms of the 33 year cycle. The peak period of the meteor activity lasts for a span of two to six hours, and can be fairly accurately estimated. This year's peak is expected on November 17th, approximately 1900 Zulu. Little is known about the effects of this increased meteor activity on satellites. The last storm, in 1966, was during a time when the number of satellites on orbit was negligible. Today, the number of active satellites on orbit is over 500.

## Did You Know? (continued)

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best you can recognize the symptoms of carbon monoxide poisoning and make some effort to change location or seek medical assistance. A special warning is appropriate in that small children assimilate carbon monoxide at a greater rate than adults and should be monitored for the first signs of lethargy or sudden change of behavior. Removal of the victim to a location with fresh air is a must. Emergency medical aid should then be summoned.

There are low-cost carbon monoxide detectors for vehicles and home use. Typical vehicle CO detectors contain a chemical dot in the center of a plastic card. Presence of a minimal amount of carbon monoxide will turn the dot black. These simple detectors work adequately but must be replaced at least yearly. They can be purchased at Aircraft and Marine supply stores. There has been a recent introduction of home carbon

monoxide detectors which are available at home improvement stores. They cost around \$30.00 and are an excellent investment. These should be installed in bedrooms and near interior heaters.

For emergency responders, including RACES members, carbon monoxide may be present at a disaster site, in closed spaces. It is also present where numerous emergency vehicles are gathered. Recent fire department policies dictate that vehicles at a large-scale incident shall not be left idling for long periods, potentially poisoning everyone around a command post. Carbon monoxide is an invisible killer. Just because you can not see it, taste it, or smell it, do not assume it is not there. If the conditions and circumstances are present, operate on the safe side and take proper precautions to make sure you don't become a victim.

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