County of Orange RACES

NetControl

June 1998

Newsletter of the County of Orange Radio Amateur Civil Emergency Service

Top Stories

Change of Address

The OCRACES list server has moved to "**ocraces-list@ocraces.org**"!

The OCRACES Web Page has moved to "**http://www.ocraces.org**" !

Newport Beach Drill

by Jim Carter– At 9:00 AM, May 20, 1998 – Newport Beach Fire Department received a report of a boat explosion (simulated) in the turning basin next to Lido Island. Numerous County and local agencies responded, including Fire, Police, Sheriff, Harbor Patrol, Lifeguards, and Coast Guard. 122 victims were cared for, with the injured being rescued from the water and the damaged vessel. They were treated then transported to an ambulance staging area on Lido Island. OCRACES had Jim Carter, WB6HAG as Amateur Television (ATV) I.C., Jack Barth, AB6VC as ATV CAM1 onboard the damaged vessel, and Ray Grimes, W6RYS as ATV CAM2 as an ATV rover, covering the view from the shore.

P-5 high-quality pictures were captured from most all locations and were video recorded from the I.C. and CAM2 vehicles. Robert Stoffel, KD6DAQ, Mike Krueger, KC6ZSF, and Ken Mirabella, KM6YH were on hand as observers. The recorded video will be edited into a training film for OCRACES and Newport Beach Fire Department.

This drill provided real time setup experience for the ATV command vehicle along with other challenges. These challenges included an obstructed line of sight transmission caused by several tall trees and multiple two story structures that surrounded the ATV command receiving station. These types of obstructions absorb and bounce the 6 MHz wide TV signals. However, good quality video to the Newport fire IC unit was provided.

OCRACES' presence, provided other city RACES organizations and various news gathering agencies with an exposure to our capabilities and the usefulness of ATV during emergency events.

June Meeting

Lt. John Roberts and Capt. Ray Grimes will be the featured speakers at the June 1 general meeting. They will give a technical presentation about Antenna Systems Theory. Everything will be covered from antennas to transmission lines to filters and duplexers. In addition, Walt Wilson will distribute the information about the June 2 election. If you are working the election please plan on attending. If you want to learn something about antennas make sure you attend.

Upcoming Events

June 1	General Meeting, Election Briefing, and Antenna System Training
June 2	Primary Election
June 6&7	City of Orange, COPS Expo
June 8	Staff Meeting
June 26	Songs Drill
June 27&28	Field Day, Craig Park
June 29	City/County RACES Coordination Meeting
July 4	Mutual Aid La Palma RACES 5K/10K Run/Walk
July 6	General Meeting, Critical Incident Stress Management Training
July 13	Staff Meeting
Jul 12	OCRACES Day at Orange County Fair (July 10-26)

Inside this issue:

Captain's Corner By Ray Grimes

SETTING A COURSE

Can you believe that 1998 is almost half over? OCRACES seems to be getting busier and more in demand lately, supporting numerous mutual-aid field activities. When the word got around that OCRACES offers professional and highly effective communications support to public safety agencies, it appeared that everyone wanted our services (especially when it's free). This reminds us that to maintain this level of support, we need more members to participate in these events. New members will strengthen our ranks. We also need to improve our readiness, mobility, and effectiveness by rethinking the packaging of our personal supplies and electronics equipment. It's easy enough to take everything you own with you in your vehicle when called out, but the time may come when by circumstance, we will be separated from our cars and trucks and will have to take only what we can carry and absolutely need. Whether we are thinking of voice radio communications, ATV, packet, or APRS, "grab and run" is the way to go. Emergency communications systems must be portable, self-powered, compact, lightweight, versatile, and easily serviceable. We should plan our equipment configurations so that very little effort is required to mobilize—anytime! Why not make portability and mobility the key goals for Field Day '98? After all, emergency communications and rapid deployment should be synonymous with OCRACES, and Field Day is the perfect arena.

City Watch

This section of ***NetControl*** is dedicated to fostering relations between city RACES groups and OCRACES. City ECCs and Radio Officers are encouraged to summit articles about events held within their city. Mutual aid requests will also appear in this column.

CYPRESS

The new packet address for Cypress RACES is KK6OZ-3 on 145.070 MHz.

HUNTINGTON BEACH

Get up to the minute HB RACES information on their Web Site…..

http://www.qsl.net/races-hb

ORANGE

City of Orange RACES will be featured inside the Mall of Orange during the COPS Expo, June 6 & 7, 1998. They will display APRS, video of the fire last year, a RACES video and ATV demos.

LA PALMA

The City of La Palma will be hosting a 4th of July celebration. Mutual aid has been requested from all RACES organizations in support of a 5/10K Run/Walk. Fifteen operators are needed. Hours of operation are 6:00 AM to 10:00 AM. Participants are to report to Central Park located at 7821 Walker St., in the City of La Palma. Communications will be conducted on 144.300 simplex. Those interested in participating should call Chief Radio Officer Susan Atkinson (KE6YIP) at home at (714) 527-5706 or at work at (714) 385-7439.

ECC News and Views by Robert Stoffel

OCRACES has a new web page address! Thanks to the efforts of David Steffen, W6DS, we can now be found at the "easy-to-remember" address of www.ocraces.org on the World Wide Web.

With the month of June right around the corner, we have several exciting activities on the horizon. First, our next General Meeting on June 1, 1998 will feature our next in a series of technical presentations. Everything you ever wanted to know about Antenna Systems will be presented by OCRACES members Ray Grimes, W6RYS and John Roberts, W6JOR. Everyone is welcome to the meeting that starts at 7:30 p.m. at the OCSD/Communications Eckhoff facility. The very next evening, June 2, 1998, RACES personnel will be providing support for the ballot transportation activities of the Primary Election. Please contact Walter Wilson, N6VYB, for information on working this evening.

Field Day is set for Saturday and Sunday, June 27 and 28 at Craig Park in Fullerton. Ralph Sbragia, KD6FYT, is our OCRACES Field Day coordinator. Please let Ralph know your level of participation in this years event. Other activities this month include the SONGS exercise at Orange Coast College on June 26, 1998, and the City/County RACES meeting on Monday evening, June 29, 1998 at 7:30 p.m. All city coordinators and radio officers are encouraged to attend this meeting.

Our RACES ATV crew has been busy this past month, participating in two mass casualty incident drills. The first was held in Brea on May 6, the other on May 20 in the Newport Bay. Both were highly successful and I would like to thank Jim Carter, WB6HAG, Jack Barth, AB6VC, Ray Grimes, W6RYS, Ken Mirabella, KM6YH and Mike Krueger, KC6ZSF for participating in this years drills.

Elsewhere in this edition of NetControl is information on a mutual aid request from La Palma RACES seeking assistance for the July 4, 1998 5K/10K run/walk. If you are looking for something to do on the morning of the fourth, this may be it! OCRACES personnel are also reminded that we will staff the Amateur Radio booth at the Orange County Fair on Sunday, July 12, 1998. You are now up to date, so I'll return the frequency to normal operation!

Event Coordination

Primary Election June 2

On June 2, 1998 OCRACES will again assist in the collection of Election Ballot Boxes throughout Orange County. RACES personnel will update the Vote Tally Center with the total number of ballot boxes collected at each site every 15 minutes. This will enable the Vote Tally Center personnel to evaluate van deployment and expedite ballot pickup at the Regional Collection Centers. A former member now living in Las Vegas , N6BG, Byon Garrabrant developed a PC based program that tracks the status of each collection van including the number of boxes being carried. In addition, the program stores information about the number of boxes waiting for pickup at each Collection Center. This information has proven vital to the collection process. Twenty three (23) operators are required to staff the collection centers. In addition, two operators are needed to operate in Control 2, located at the Vote Tally Center, and at least two people are required to handle Van traffic control, also at the Vote Tally Center.

Last years traffic control was added by a radio controlled traffic light developed by OCRACES member Marty Mitchell. Members should call Walt Wilson to sign-up for this worthwhile event.

Field Day 98

Fresh on the heels of Baker to Vegas, comes Field Day Activities. Six year OCRACES veteran Ralph G. Sbragia, (KD6FYT) has volunteered to coordinate our Field Day activities. *(ed. note: Ralph also has an article in the June QST regarding V/UHF operations and Field Day.)* OCRACES will be operating a contest station for the third consecutive year.

This year, using a set-up similar to last, we will be operating as a 3A station rather than a 2A. This will allow us to keep both VHF/UHF transceivers on the air at the same time during the contest. We will be operating out of Craig Park in Brea/ Fullerton (same site as last year). Tent camping will be available Saturday night. We still need an OCRACES volunteer to coordinate how we will handle food and drinks.

Ralph is currently working to coordinate the details to insure that we earn all 1000 bonus points that are available. Three hundred of those points come through public relations. It is hoped we can get some pre-Field Day coverage to improve the potential for visitors from the public coming to the park to check us out.

CW operators needed

Help is need to support CW operations. The goal is to keep one of the two HF radios operating in CW mode the entire contest. Members of City Organizations or non RACES members who would like to assist in our contesting efforts are encouraged to contact Ralph at either sbragiar@deltanet.com or 714-776-1732 to sign up for a shift or two.

The plan and duty roster for OCRACES Field Day can be found at http://users.deltanet.com/~sbragiar/field_day.htm. With a little help from the sun spot cycle and some enthusiastic operators, a good time should be had by all.

OC Fair

OCRACES is signed up to work the Amateur Radio Booth at the New Permanent Home in the Orange County Building, on Sunday July 12, 1998. The Fair runs from July 10 through July 26. Additional details to follow in future issues.

Training

SPREADING IT AROUND

by: Ray Grimes, W6RYS

As we know, analog radio systems are technically simple, yet reliable, as they have been the favored radio communications mode for almost a century. The only real limitations of the analog transmission mode are in-band RF interference degradation; finding enough spectrum bandwidth to accommodate the multitudes of operators wishing to simultaneously transmit high-quality voice, data, or graphics; and general lack of security from eavesdropping. Typically, analog signals can be readily received by the casual scanner listener. What if there was a transmission mode that offered some security, was difficult to jam or block, and capable of passing rather high speed voice, data or graphics, while accommodating numerous operators in a given geographic area? Actually, there is such a system, it is called Spread-Spectrum.

Spread-Spectrum, or SS Communications, may appear to be the latest technology, but you might be surprised to know that it has been around since the early days of WW II. You probably would be even more surprised to know who the improbable inventors were. The co-inventors of frequency hopping radio were Hedy Lamarr, the famous Hollywood actress of the 40's, and George Antheil, a music composer and musician.* As the story goes, Hedy Lamar, born in pre-WW I Austria, was married to a German armaments manufacturer who supplied munitions to Adolph Hitler. After 4 years of marriage to this "dealer of death", Hedi, a staunch anti-Nazi fled to London. She was "discovered" by MGM's Louis B. Mayer, and soon moved to Hollywood to begin her movie career.

Hedy knew a lot about weaponry, which she learned through her 4 year association with her estranged husband. She had learned that the U.S. government was having problems in maintaining radio control of guided missiles. It was relatively easy to jam the analog control

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Training (continued)

(Spreading it Around from page 3)
channels of that day. She met George Antheil in Hollywood, who helped her figure out a way to synchronize frequency-hopping between a radio transmitter and receiver. Their design utilized something similar to piano music rolls with perforations. The perforations of the transmitter and receiver frequency selectors would be identical (and secret). Different piano roll tapes could be used on different days. While this design might have actually worked, though mechanically slow and cumbersome, upon issuance of a U.S. Patent in 1942 for the "Secret Communication System, the U.S. government shelved the idea, believing the "right" technology didn't exist to make this system feasible. It wasn't until the late 1950's that the U.S. Navy, with the help of the new transistorized computer technology, renewed an interest in frequency-hopping spread-spectrum, using Hedy's and George's basic idea. As a side-note, Hedy never received a cent for her technical contribution, as the patent went into public domain before it was considered as valuable. Hedy is now 84 years old, living in Florida. She is finally being honored with an award at the Computers, Freedom, and Privacy conference for "blazing new trails on the electronics frontier".

Spread-Spectrum embraces the opposite concept of what communications engineers have believed for years. That is, the theory that narrow-band analog carriers offer better noise immunity by concentrating most of the carrier power over a small slice of spectrum. SS transmission on the other hand, spreads the available carrier power over a larger portion of spectrum, resulting in greatly improved immunity to RF interference and hostile jamming, ambient noise, multipath interference, and casual eavesdropping.

There are basically three types of Spread-Spectrum modes. They are Frequency-Hopping (FH), as was envisioned by Hedy Lamarr. In FH mode, the transmitter and receiver(s) are synchronized to the same pseudo-random sequence of radio frequencies at a high rate of speed. In order to avoid RF interference to a co-channel analog user, the dwell time (time the transmitter pauses on a given frequency) must be less than 10 milliseconds.

The second type of Spread-Spectrum mode is Direct-Sequence (DS). In DS mode, a microprocessor-generated binary bit stream is used to shift transmitter carrier phase. These phase-shift sequences are called pseudo-noise, or PN. Each PN bit is called a chip. DS transmission is typically used to send digital information.

The third form of Spread-Spectrum is Time-Hopping, or TH. In time-hopping, the carrier is keyed on and off by the PN sequence. The speed of keying determines the amount of signal spreading. It is also possible to combine two or more individual Spread-Spectrum modes to produce an even more complex (and secure) SS system.

Where can you find SS transmission in practice, other than for the obvious military purposes? Some digital Cellular and PCS telephone systems use CDMA (coded-division multiple access). CDMA is a complex form of Spread-Spectrum transmission, utilizing both frequency-hopping and phase shifting. In 1985, the FCC allocated the non-licensed, 1 watt limitation, 915 MHz ISM (Industrial, Medical, and Scientific) band for among other things, Spread-Spectrum short-range data, image, and voice communications. This is where many business/consumer devices such as cordless telephones and WLAN's (wireless local area networks) reside. While SS transmission is virtually RF interference-free and self-correcting, given a high density population of closely-situated SS transmission devices, some interference is probable, though usually transparent to the end-user.

Can Spread-Spectrum be used by Radio Amateurs? The answer is YES. Spread-Spectrum transmission belongs to a growing category of wide-band signals allowable under the Amateur Radio Rules. As the FCC requires Spread-Spectrum signals to be easily decoded, and Amateurs usually want others to be able to receive their signals, a standard protocol for PN code is published. The Amateur SS station must also identify with narrow-band transmissions on one of the frequencies in use, or the carrier is shifted to a commonplace CW, NFM, or SSB mode for the duration of the identification sequence. At present, there is very little Spread-Spectrum commercial equipment available which Amateurs can readily purchase. There are however, many articles in print and on the Internet which describe equipment which may be constructed for this communications mode of the future.

Sources: Scientific American, April, 1998, Hughes and Hendricks.

- http://www.astr/ude/4000W/didyouknow.1.html
- Associated Press, March, 1997

ESP
June '98

Hazardous Materials

Hazardous materials incidents aren't restricted to spills on the freeways or at local chemical plants or industrial facilities. Common household products could make your home a potential site for a mini-Hazmat incident, especially if an earthquake causes bottles and cans containing toxic materials to topple and break.

You can lessen the possibility of exposure to hazardous substances by following instructions on all chemical products, by limiting the quantities that are stored and by disposing of hazardous household products safely. Remember to store products out of the reach of children. Also store these products in separate containers and on shelves that are secure so that bottles will not fall, break and mix contents together.

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/

HamFax Update - David Boehm (KD6IOV) project leader for the HamFax committee has identified a manufacturer that produces a device which allows different digital transmission modes to be decoded on a PC. They are presently trying to obtain further information. Their decoder module is typically used by people who listen to digital transmissions on a radio scanner. The equipment to be designed for our HamFax operation will probably be divided into a customized receive side and transmission side. If this device supports a standard FAX transmission, it will be used as the receiver decoding module.

Stay tuned for next months update!

Brea Drill - Jack Barth (AB6VC), Ken Mirabella (KM6YH), and Jim Carter (WB6HAG) supported the May 6th exercise. Visual communications was provided to the Brea Fire Department IC unit. This exercise provided a high visibility of OCRACES Visual communication capabilities. Staff from the Orange County Fire Authority and the Huntington Beach Fire Department asked for a copy of the video taken during the drill as Jack Barth provided some great camera work. This drill prompted an invitation by the Newport Beach Fire Department to participate in their May 20th drill.

A ten minute video from the two plus hours taken during the drill was viewed at the May OCRACES staff meeting.

GPS Video Integrator - The GPS video overlay integrator was received working after being returned to RMD Technologies for repair. This has been a challenging project for both the Visual Committee and the manufacture.

This device superimposes a GPS receivers outputted latitude and Longitude information onto a video camera's signal when feed to an ATV transmitter. This information provides an ATV receiving station the camera's operators position in ASCII text format which is superimposed onto a video picture when viewed by the receiving stations TV monitor. The GPS data feeding the integrator can also be connected to a TNC for simultaneous APRS tracking. The advantage for having video representation of position, allows for video taping the camera operators position for a matter of record. This completes another Visual Committee goal for the year.

2.4GHz Wavecom JR. Project - To augment the 400 MHz ATV system currently used by OCRACES, a 2.4GHz video transmission system is being developed as a linking system and for primary video transmissions. Prior drills have demonstrated the need for alternate frequencies in areas where public service radios are used. Jack Barth (AB6VC) who is project leader for this development reported that initial development is underway using Wavecom Jr. 2.4 Ghz units available from RadioShack or other electronic stores. Prices range from $120.00 to $180.00 for both the receiver and transmitter.

Two Wavecom transmitters and receivers have been purchased by ATV committee members. One system has been modified from .25Mw output to 2Mw output by removing the 9db attenuator, and the circular polarized antenna and installing an "N" connector onto the coax. The "N" connector modification allows for other types of antennas to be connected and tested. Some ATV committee members have purchased 2.4GHz, 24db dish antennas, a 12db vertical antenna, and a 14db preamp. The next phase is to determine the effective range of the different transmitter/antenna combinations.

Presently, different types of RF amplifiers are being reviewed to determine frequency response, power requirements and cost.

This project was stimulated by the Baker to Las Vegas relay race, as ATN members and San Bernardino RACES used a similar system to transmit video from the starting line to Turquoise Mountain. The distance was 13.8 miles with a P5++ picture.

Members Needed - We are looking for additional members. If you would like to learn about ATV or provide assistance with the HamFax project. Please contact Jim Carter (WB6HAG) for additional information.

Direction Finding

Direction Finding Coordinator:
Robert Barris (KD6IFZ)
Email: rbarris@quicksilver.com

This month's T-Hunt took place on Sunday, May 17. Participating hunters included Rob KD6IFZ and Mike KC6ZSF (mobile), Monte KE6GQO and Richard N6UZS (mobile).

This hunt was once again in the mobile-fox format. Mike KD6SNE, the fox, decided to try a variation whereby he would drive around for ten minutes, then stop for ten minutes, and so on. As a result, the IFZ/ZSF team did find him near the Duck Pond in Anaheim, 18 minutes after the start of the hunt. Shortly after the first "find", Mike went mobile again but Monte and Richard quickly homed in on him again.

From there the hunt progressed to several more "found" locations, including the UCI Medical Center parking lot as well as the final location atop the AAA parking structure near the 405+Harbor intersection. All in all there was about two hours of challenging navigation and transmitter hunting. Monte brought along his GPS unit and after the hunt was over he was able to display a log of his driving path. It proved interesting to all observers.

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Direction Finding (Continued from page 5)
Mike KC6ZSF and Rob KD6IFZ have agreed to be the foxes for next month's hunt. The format has not yet been decided so vote now and often.

Next hunt will be on the third Sunday in June at 1PM. Comments, questions and suggestions are all welcome, my email address is rbarris@quicksilver.com.

The first Orange County (CA) practice session for ARDF (international style transmitter hunting, also called radio-orienteering) was a success, with eleven officially-timed participants and quite a few others who wandered out onto the course without getting punch cards.

Chris Storey KA6WNK of Orange County RACES surprised everyone by completing the course in just 54 minutes, using ordinary "body shielding" techniques. Imagine what he could do with some improvements to his gear!

There were a few "group" participants including Allison DeAlmeida, who went out with her dad. This is not allowed in the big championships, but it is an excellent way to teach RDF techniques, especially to young people.

Five transmitters, each running about three-quarters of a watt into quarter-wavelength whips, were scattered in the contiguous hunt area, which included Tri-City Park, Tuffree Junior High School, and Tuffree Park, a total of about 65 acres.

The results:

Name	Call	Club	Foxes	Time
John Oppen	KJ6HZ	WARA	5	0:54
Dennis Schwendtner	WB6OBB	SBARC	5	1:05:30
Richard Mayfield	KF6PME	CFARN	5	1:08
Nancy Pistole	KF6PAV	LAOC	5	1:15
Marvin Johnston	KE6HTS	SBARC	5	1:16:30
Allison DeAlmeida and dad				5
	1:29			
Chris Storey	KA6WNK	OCRACES	5	1:30:30
Daniel Waechter	KF6LIX	WARA	3	1:53
Gary Holoubek	WB6GCT	FRC	2	1:25
Jack Hafner	KO6IC	FRC	2	1:31:30

Maps were provided, but most hunters didn't attempt to use them. International championships are held in much larger areas with far more vegetation and fewer paths, making map-and-compass triangulation and navigation a necessity.

Nancy Pistole KF6PAV is a new ham who doesn't even have an HT, but is very interested in classic orienteering. She borrowed the Australian DF set and ended up in 4th place.

Three participants came all the way from Santa Barbara to join the fun. Two of them are in training for the World ARDF Championships in Hungary this fall.

Want to improve your gear and try again? I want to organize another session in a bigger park on a mid-summer weekend. Tentative dates include July 18 and August 2 or other . Please let me know if you have a preference for dates, and spread the word about this sport. I would especially like to hear from anyone who has "connections" with suitable parks and recreation areas, and also folks who would like to make radio-orienteering a project for youth or Scout groups.

73 de Joe Moell K0OV
USA ARDF Coordinator
homingin@aol.com
http://members.aol.com/homingin/

Hospital Disaster Support Communications System (HDSCS)

The HDSCS web page has recently received recognition from two sources. It was selected as a showcase site on the 911 Police Fire Medical Web and also received the Auxiliary Communications Service (ACS) Home Page Award of Excellence from the State of California. The HDSCS is a good way to acquaint Ham and non-Ham folks with HDSCS and how Amateur Radio can help hospitals. The information is updated periodically as events occur. The HDSCS Webmaster is Joe Moell, K0OV.

http://members.aol.com/emcom4hosp/

Digital Communications

Coordinator: Dave Wilson
ke6afr@qsl.net
(714) 668-0100 daytime

On May 20 the DCC had its first meeting since I was given command in March. We discussed the possible uses of digital communication during an activation and came up with the basis for a plan. We determined the following as criteria for the use of packet radio:
* Activation will be long term (more than 4 hours)
* Information that is not time critical
* Information of a confidential or sensitive nature
* Long lists of people or things
* Incident Status Information
* OCRACES Operations Status Information
* Non-Incident Related Traffic
* OCRACES Site-To-Site Communications
* Still Image Transfer via 9600 or 56k UHF or Microwave

The actual implementation details are still open and being investigated although the following needs have been identified:
* Small group of members will be well trained and practiced in system use.
* Members will use standardized equipment. (PC System, Kam TNC, and Mobile Radio)
* Communication will be through a central hub "Conference Bridge" on our "own" frequency
* Easy to use interface to be found or written for operators to use
* Other groups (HDSCS/City EOCs/RACES) will have a generic interface into our system through W6KRW.

If you or your group uses different criteria or methods to utilize the power of digital communications or you have comments about ours, I would like to hear from you. I would also like to hear success stories in the use of digital communications in a real-world activation.

98 Baker to Las Vegas Committee (Final report) by Mike Krueger

This is a final report of the 1998 Baker to Las Vegas Committee. Information in this report was compiled from personal conversations with participants and notes taken at the debriefing held on May 4, 1998 during an OCRACES general meeting.

1. VEHICLE INSTALLATIONS

ECKHOFF – This was a pre-race installation held on the Thursday before the race. All vehicles arrived on time. Steve King had collected all the equipment in advance and arrived at Eckhoff. Each installation took approximately 15 minutes. This was a great improvement over doing the installations at Baker since we did not have to contend with the wind, dust or the pressure of having to get the vehicles completed on race day.

Recommendations: Single sheet vehicle equipment list to be provided, copy attached to radio or vehicle. Two installation days might be offered to allow agencies flexibility in scheduling and to better distribute work. Recommend section of garden hose be used to cover and protect cables routed through open windows. Cable ties can be used to secure hose section.

BAKER – These installations were staged at the Baker High School on the day of the race. Vehicle installation was scheduled based on the start time of the team. Vehicles generally arrived on time, or early. Drivers sometimes disappeared. Need to make the Installation Coordinator more visible on scene. Coordinator must not get involved with actual work, but delegates work. He/she must also be the quality control supervisor and expediter. Lack of zone repeater system affected RACES ability to verify that APRS equipment was actually enroute. Only two spare APRS units were available at Baker H.S. which had to be reprogrammed. These were installed in time-critical installations, after an involved onsite reprogramming effort.

Recommendations: Installation coordinator should wear yellow jacket or shirt identifying him as OCRACES event coordinator. He/she should greet and log-in arriving vehicles and assure quick and efficient installations. Upon completion, vehicles should be moved away from immediate installation area. All vehicles receiving equipment, should be marked with a sign placed on the dashboard stating which team, agency, vehicle designation, etc. The vehicle should also have a radio operations guidebook provided.

2. VOICE RADIO SYSTEM

The simplex system worked well. The Ibex repeater was not activated until 2:30 PM on Saturday—too late for critical Baker H.S. and Start Line activities. Many Amateurs used the tactical call of the vehicle and did not end transmissions with their Amateur Call sign as required by the FCC. Simplex traffic chaotic at times, causing significant co-channel RFI at Ibex.

Recommendations: Calling operator should advise which band he/she is calling on, VHF or UHF. The use of different bands seemed arbitrary, operators used whatever happened to be selected on their individual radio. A brief instruction session or a simple equipment operation card would help second shift operators with unfamiliar radio equipment. All fixed and mobile stations should offer to relay traffic from distant stations when communications difficulty noticed.

3. APRS

Internet medium effective in distributing file transfers. Daylight savings time zone change and correct APRS parameters must be verified for each individual unit. Units should be pre-tested thoroughly prior to the event. No RF coverage east of Mountain Springs. Unsuccessful attempt to establish digipeater in Las Vegas. Some setup problems with individual APRS packages did not allow digipeat operation. Hub site changes required to allow APRS coverage for Las Vegas. APRS software worked great. Some comments that Stage 12 icon 2 miles from correct location. This is Stage coordinate information provided by Race Committee. 1200 hits recorded on Internet web page for APRS access.

Recommendations: Re-establish Mountain Springs hub site next year. Verify APRS package configurations prior to event.

4. VISUAL COMMUNICATIONS

For the second year, Gary Heston, of San Bernardino RACES, provided the ATV link from Baker to Las Vegas through Mt. Potosi. Gary spent the entire day on Saturday manning the Turquoise site. The 2 GHz ATV links worked great. The Mt. Potosi backbone to Blue Ridge was working, but the Blue Ridge to Santiago ATN link was down. The Mt. Potosi ATN repeater (434 MHz input) was decommissioned, the 913 MHz input repeater was severely desensitized with RFI, making the Mt. Potosi repeater coverage of Pahrump and the Finish Line unlikely. Unable to use voice communications with ATN due to Mt. Potosi repeater problems. Internet ATV page yielded 545 hits, with "live" pictures of runners and activities displayed via the Visual Communications Command Post located in Pahrump.

Recommendations: VC group to purchase several Wavecom 2 GHz ATV systems. Turquoise to be used as primary relay point for Baker through Mt. Potosi location next year. ATN group to repair 913 MHz input to Mt. Potosi for Finish Line coverage next year.

5. SITES

IBEX – Communications seemed, at times, uncoordinated amongst the three operators located in adjacent vehicles. Some difficulty in passing traffic. Unable to communicate from Ibex to Pahrump on 2M, without the operation of the local repeater. The selected repeater frequency was probably subject to severe site noise causing the receiver to be de-sensitized. Pahrump reports hearing Ibex but Ibex could not hear Pahrump. Local 2m repeater not activated until 2:30 PM on Saturday. The motorhome containing the repeater had to be relocated to achieve a better antenna location. The Omnidirectional antennas used, were unable to provide site noise rejection and forward gain. The 440 MHz simplex frequencies didn't work reliably. This may have also been due to onsite UHF RF noise and receiver de-sensitization.

Recommendations: De-emphasize Ibex as a key site and use Turquoise as a manned relay point. Have site personnel coordinate activities prior to race so each person knows their role. Consolidate communications into one vehicle. Coordinate use of Turquoise with site operators and users. Provide directional antennas such as yagi's for maximum gain and site noise rejection. Provide cavity filters for all receivers used at popular sites.

PAHRUMP – Worked well! No communications between Ibex and Tecopa. Nextel phones worked well. Suggest area 702 registry phones for next year to eliminate toll calls. Data capability over iDEN phones?--maybe. A problem arose when a vehicle driver intended to leave the course and go home with our radio equipment still installed. This led to OCRACES removing the equipment. The driver had incorrect information, so the equipment had to be reinstalled. Also, during a stoppage of the race caused by a traffic accident, OCRACES net control was contacted and asked to make a decision that would allow Sheriff's runners to proceed without follow van coverage.

Recommendations: Tecopa may not be a suitable site. Turquoise may help supplement coverage in this area. OCRACES needs to maintain a high level of involvement with any communication system provided by others. Vehicle/driver issues should be directed to the team onsite coordinator for resolution. Keep a perspective that we are providing technical expertise and cannot make tactical or operational decisions, though we can facilitate the communications of the decisions.

LAS VEGAS – The ICOM Fun Van setup operations at Vacation Village. OCRACES was invited to use the van as our command post. The van was there at the invitation of Costa Mesa RACES but was unable to set up at the finish line as originally desired. This worked out well in our favor. We can't however, depend on this resource for next year. Saturday night no transportation vehicles were provided and the second shift relief personnel had to provide their own transportation to Pahrump. The Nextel phone was the only reliable communications with Pahrump and other locations. CHP-3 vehicle operator drove vehicle to his home in Las Vegas with our equipment onboard. A T-hunt by Byon located the vehicle and equipment.

Recommendations: Provide personnel and equipment on Mountain Springs next year. Make sure van drivers know the procedure for equipment removal at the Finish Line.

6. GENERAL COMMENTS

We had some surprise weather this year. Next year, some additional attention should be paid to weather, personal food and water provisions. Additional items useful at the Baker H.S. installation site would be a table, awning, and generator. OCRACES should not be expected to install such things as P.A. music systems, light bars, signs, or make vehicle repairs unless all other work on the communications system is completed and/or arranged in advance. If supplemental vehicle equipment such as P.A. systems, lights, etc. are to be installed, they must be checked out prior to the event to insure that all components including installation hardware are included.

Meetings:

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

Staff: Second Monday of Month (members only) @ 1930 hours

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

OCSD/Comm's Staff:

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Chief Telecomm. Engineer
Gary Gray, W6DOE
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Assistant Radio Officers
Mike Krueger, KC6ZSF
John Roberts, W6JOR
Joe Selikov, KB6EID
Steve Sobodos, KN6UX

Sergeants
Al Baird, KC6TWI
Jim Carter, WB6HAG
Marty Mitchell, N6ZAV
David Wilson, KE6AFR

***NetControl* Editor:**

Lt. Joe Selikov, KB6EID
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Editor's Notebook

Loose Lips

This is a reminder that we need to watch what we say over the air and while in a public forum. OCRACES members are at times put in situations where they have access to confidential information. This includes information about individual members. Simple things such as when and if a member is on vacation could be used by people intent on taking advantage of the situation to help themselves to the members possessions.

We are also fortunate to have several members that have become Reserve Deputies. We should all be proud of those accomplishments but at the same time realize that what you say about that person over the air, although said with good intent, could be put to a bad use. As a rule, we should not mention the fact that the member is a deputy nor discuss any of his/her activities over the air.

Area Code Change

Included with this issue is an updated roster. An attempt was made to change all the 714s to 949 for those south of the 55 freeway. Please check the roster to make sure it contains your current information. Email the editor with any changes.

How to Contact the FCC with Questions

The FCC has a "general" e-mail address where you can ask questions concerning the FCC, its internet site, etc. FCC staff will route your question to the appropriate person who will respond via e-mail. The address for sending general inquiries is:

fccinfo@fcc.gov

If you would like to call the FCC instead, use the FCC's toll free number at its National Call Center (NCC) which is (888) CALL FCC. If the NCC representative can't answer your specific question, you will be transferred to the FCC staffer who can tackle the subject. It's a great service.

FCC WEB NEWS

If you need a phone number of someone at the Commission, use their electronic phone book:

http://www.fcc.qov/fcc-bin/pbFCC.pl?person=letter

To find specific documents on-line, use the FCC's powerful Digital Index search engine available at:

http://dettifoss.fcc.qov:8080/beta/doc_search/opasrchV2.cqi

Did You Know?

Meet EDIS, the State of California Emergency Digital Information Service. EDIS comes in many flavors, being accessible by VHF weather radio, personal alphanumeric pager, Internet, the EAS (Emergency Alert System), and some RACES BBS networks. EDIS offers a real-time and historical source of urgent and emergency public information, including ongoing significant events and emergencies in progress. Bulletin sources may include the National Weather Service, National Earthquake Information Center, OES, FEMA, and various local EOC's. EDIS may be accessed on the Internet at: http:/www.ceres.ca.gov/edis/EDIS may also be accessed via the San Diego RACES web page or the California State Office of Emergency Services (OES) web page. San Diego RACES offers free alphanumeric EDIS pager service, using your own pager. You can select personal preferences as to message type, text length, and priority of EDIS alphanumeric pages received. Check-out the San Diego RACES web page for more information on EDIS paging. You can also assemble your own dedicated EDIS bulletin receiving system. To receive the Mt. Wilson EDIS bulletin transmitter, you'll need a 37 to 39 MHz scanner or narrowband FM receiver, a standard amateur packet TNC, an outdoors antenna, and a printer.