



County of Orange RACES NET CONTROL



April 2000

Newsletter of the County of Orange Radio Amateur Civil Emergency Service

OCRACES prepares for Baker to Vegas 2000! April 15th and 16th

By: Lt. Mike Krueger, N6MIK
Training Officer, OC-RACES

The 2000 Baker to Vegas Challenge Cup Relay brings together law enforcement personnel from around the world to compete in a 120-mile foot race through the California and Nevada desert. The race begins just outside of Baker, CA. and winds it's way along Highway 127, over Ibex Pass and into the town of Shoshone. There it picks up Highway 372 for the trip into Pahrump, through Mountain Springs Pass and on to Las Vegas. There are a total of 20 stages, and one runner per stage.

During April, the weather can be unpredictable but usually ranges from the 80's during the day to 40-50 at night. The landscape is dotted with desert plants and animals, but not much else. In fact, a good part of the route is not covered by cellular telephone service, and even less by most two-way radio services.

The Wind, the Orange County Sheriffs Department Running Team, enters two teams each year. With over 40 runners, and even more support personnel, reliable, course-wide communications becomes vital not only to winning the race, but to life safety as well. With over 200 teams, the terrain and weather conditions, pedestrian traffic around each stages checkpoint, medical and other emergencies are a very real part of each year's race.

Each year, the members of OC-RACES establish a communications system consisting of a course-wide UHF repeater backbone system and a simplex VHF system for use by support vehicles along the course. In re-

April Meeting

The next OCRACES general Meeting will feature final details of the Baker-to-Vegas event and a recap of the Iranian New Year activation.

The meeting will be held Monday, April 3, 840 N. Eckhoff St. in Orange at 1930 hours.

cent years, OCRACES has established and refined a GPS based vehicle location system utilizing APRS, for tracking the location of runners on the course. Several other teams, including the all-time record holders from the United Kingdom, have used these systems to monitor their progress along the course.

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Upcoming Events

April 2 Iranian New Year, Mason Park, OCRACES Activation

April 3 General Meeting, 840 N. Eckhoff St. Orange
1930 Hours

April 13 Baker-To-Vegas Installation Night

April 15-16 Baker-to-Vegas, OCRACES Activation

April 27 MCI Drill

May 1 General Meeting, 840 N. Eckhoff St. Orange
1930 Hours

May 30 SONGS Drill 1500 to 2000

Captain's Corner

By: Capt. Ray Grimes, W6RYS
Chief Radio Officer, OCRACES

It's hard to believe that we are entering the second quarter of the new year of the new century. A lot has been happening in OCRACES since the beginning of the year, filling our calendars. The County of Orange has made specialized training classes available to county employees and OCRACES on many useful topics such as Media and Public Relations, for example. The annual Red Cross Disaster Academy is coming up on May 31 in Fullerton. These are valuable and timely courses which I urge all OCRACES members to attend. OCRACES supported the March 7 election by providing radio communications, keeping track of ballot transportation. We are also in the planning stages of Baker to Vegas.

As with all OCRACES events, membership participation is what makes these events work. While all of us are busy these days, allow me to remind you of the reasons we joined RACES, to support the community by providing communications when required. In times of disaster, almost every member responds. Fortunately, disasters are uncommon, however routine requests for our services are ever present. As individuals, we need to strengthen our commitment to the organization, making a renewed effort to support even the most routine of events. If these requests for communications weren't important, we wouldn't have been asked to help in the first place. It has always been my belief that people manage to do what is most important to them. This is largely a matter of perspective and prioritization.

Among goals I would like to recommend for each member, is that of qualifying and sponsoring one new member this year. Let's make this a serious commitment. Most everyone of us knows at least one Amateur Radio operator who would be a good member candidate.

Another goal I would like to suggest for each member is to think of at least one OCRACES activity you would enjoy and learn from. This could be a field exercise, a tour of a public safety agency, or a training session.

Don't wait to be called upon. As I tell people often, there are at least 13 ways to contact me, so if you can't successfully reach me, try harder!

B-to-V cont'd from pg. 1

In addition to these radio systems, OCRACES members establish and staff a command post in Pahrump for The Wind and other teams that may not have the resources to staff an event of this type. This command post monitors the radio and APRS systems for participating teams, and provides updated locations from the APRS system via telephone and the Internet in real time.

The planning and implementation of an event of this size takes many RACES man-hours. Everything from designing an efficient communications system, gathering equipment, and testing the overall system with communications personnel from all participating teams must be done prior to race weekend. It takes over 20 communicators to bring it all together on the course and at the command post. More information can be found by clicking the Baker to Vegas link at "<http://www.ocraces.org>".

Next month, Net Control will feature an overview of this year's race. Stay tuned!

COUNTY VOLUNTEERISM RECOGNIZED

By Robert A. Stoffel

A celebration of County volunteerism is planned for April 18, 2000. The County of Orange Board of Supervisors will recognize volunteers during the County's fourth annual volunteer recognition program. Mike Krueger, N6MIK, our OCRACES Training Officer will receive recognition on behalf of his on-going contributions to our RACES program. All OCRACES members are invited to attend a reception at 7:30 a.m. in the Hall of Administration followed by a formal Board of Supervisors ceremony from 8:15 - 9:15 a.m. The Hall of Administration is located at the County Civic Center in Santa Ana, building #10. The reception will take place in the lobby area. Please join me in saying "thanks" to volunteers from all County departments as well as our own Mike Krueger!

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)

OCRACES Web Page:

<http://www.ocraces.org>

OCSD/Communications

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Did You Know?

Emergency Beacons to be Phased Out

By: Capt. Ray Grimes, W6RYS
Chief Radio Officer, OCRACES

The International Cospas-Sarsat program announced it will terminate satellite processing of 121.5/243.0 MHz ELT's and EPIRB's. Cospas-Sarsat operates a satellite constellation that relays distress alerts to search and rescue authorities through a worldwide ground communication network.

The appropriate search and rescue agency then responds to provide assistance. VHF emergency beacons are used for aircraft, emergency position-indicating radio beacons (EPIRB) carried onboard vessels, and personal locator beacons (PLB) used by individuals. VHF emergency beacon users will have to purchase new 406 MHz beacons in order to be detected by satellites.

Though no effective date has been set for this changeover, it is expected to be far enough in the future to allow a complete migration without compromise of safety. New technology aircraft and vessel 406 MHz emergency locator beacons will likely include advanced features such as unit ID (aircraft N number or vessel registration number and country of origin) plus GPS position reporting through an external GPS receiver linked through a RS232 cable. When an advanced emergency locator beacon is activated and received by the satellite system, aircraft or vessel ID and position will be immediately known, saving valuable search and rescue time to scene. There are also interesting side-benefits in location of reported stolen aircraft or vessels, if supported by the fixed system.

Information obtained in part, from an article in March, 2000, *Monitoring Times*, P. 9, Communications.

Images from the March ATV Presentation

Photos by Al Baird, KC6TWI



Election Coverage

By: Walter Wilson, K7WWW

On March 7th RACES members from Buena Park, Costa Mesa, Fullerton, Huntington Beach, Westminster and OC-RACES provided communications support for the Primary Election.

As the precincts closed their polls at 8:00 p.m. and transported their box of ballots to the Collection Centers, RACES members provided valuable early warning information as to the feel of the election night activity. John W6JOR working at the Fountain Valley Collection Center reported at 8:34 p.m. that the first box of ballots had arrived. Anaheim, Garden Grove, Orange, Placentia, Saddleback, La Habra, Santa Ana, Huntington Beach and the rest of the Collection Centers continued to report the arrival of their first box of ballots. By 9:03 p.m. all Collection Centers had reported the arrival of at least one box.

Throughout the evening RACES members at the Collection Centers continued to provide information regarding the ballot box arrivals, the arrival and departing of the ballot box transportation vans. This information allowed for early planning in dispatching of additional transportation vans to Collection Centers.

What began a little before 8:00 p.m. for the RACES communicators ended with the closing of the Santa Margarita Collection Center at 12:40 a.m. In between, 1663 ballot boxes were transported from the Collection Centers to the Vote Tally Center in Santa Ana. The late closer was caused by the extremely late delivery of the last ballot box in Orange County.

That evening, Chris KA6WNL was operating net control in Control Two at the VTC. He logged in 147 transmissions.

RACES members worked the following Collection Centers:

Aliso Viejo - Harold Robinson KE6DVB
Anaheim - Jack Barth AB6VC
Buena Park - Jerry Hunsaker
Costa Mesa - Costa Mesa RACES
Fountain Valley- John Roberts W6JOR
Fullerton- Gary Holoubek WB6GCT and Gene Thorpe KB6CMO
Garden Grove-Harvey Packard KM6BV
Huntington Beach-Larry Henderson KF6ZB, Mel Goldberg N6MEL, Judy Cushman KC6ZPH, Gary Stuart KC6ZUN, Robert Thompson KE6RKG, Steve Graboff W6GOS, Deb Harriot N6QWR, Cam Harriot KI6WK, Phil Gregg E6GFT
Irvine - Rob Barris KD6IFZ
La Habra - Ken Mirabella KM6YH
Laguna Woods - Nancee Graff N6ZRB
Los Alamitos - Ed Herbold KF6KGD
Orange - Robbe Gibson K6RAG
Placentia - Ralph Sbragia KD6FYT
Saddleback - Roger Thomas KD6DAN
Santa Margarita - Steve Sobodos KN6UX
Tustin - Jim Carter WB6HAG
Westminster - Dan Minear N6RDK and Billy Simms KF6WBV
VTC Net Control Operator - Chris Storey KA6WNL
VTC Computer Vehicle Tracking- Marten Miller KF6ZLQ
VTC Traffic Control Operators - Joe Selikov KB6EID and Mike Krueger N6MIK

The County of Orange, Registrar of Voters and OCRACES thanks each of you that provided support for the Primary Election.

Now we can start planning for the Presidential Election in November!

RF Hazards History

By: Capt. Ray Grimes, W6RYS
Chief Radio Officer, OCRACES

As you may recall, the first ANSI RF Hazard Guidelines were released in 1982. Prior to that time, a few papers existed which vaguely addressed RF exposure risks to humans. Most of the scientific awareness of the time came from medical observation of the results of gross exposure to electromagnetic energy by military personnel in W.W.II and

Korea. These were occupational situations where technicians were self-exposed to radar and microwave high power or very strong HF fields. The biological effects to humans were unmistakable, resulting in classic diseases such as cataracts, leukemia, tumors, and cancer. The early RF exposure documents were not taken seriously by the industry, or were their contents even recognized and understood by most. Though a very few people had mobile telephone service handheld portables in the '60's and '70's, the advent of cellular telephone is what elevated concern about general population biological RF exposure risks in this country.

The ANSI Guideline for RF Exposure to Humans is rewritten and released every 10 years (1982, 1992, 2002, etc.). There is a long process for which current and past medical research is reviewed, disputed, and defended. There are political and legal pressures supporting more conservative RF Hazard protection requirements, balanced by those who believe the standards are too rigid and costly to meet.

Some special interest groups are challenging the 1996 FCC RF Exposure Guidelines (which is really nothing other than the FCC's defacto adoption of the ANSI C95.1.1992 RF Hazards to Humans Guideline, as the US EPA failed to meet its obligation to create its own standard). Their concern is that the RF Exposure standard does not address non thermal effects of RF exposure, including incidental RF effects on electronic medical devices. This area of interest is not new to the industry. There have been studies in the past which described effects on humans and laboratory animals when subjected to medium to large RF fields where the RF carrier was amplitude modulated, with a tone or pulse rate of around 16 Hz. The argument is that even though brain Alpha wave form changes can be observed in humans, is this a negative or positive effect, or no effect at all on animal behavior?

A recent US Court of Appeals lawsuit brought on by the Cellular Phone Task force and the Communications Workers of America raised several issues, including a challenge of the FCC's exclusive authority to set standards and regulate radio facility operations, also questioning the validity of the narrow scope 1996 FCC RF Exposure guidelines. The Second Circuit Court of the US Court of Appeals upheld the FCC's exclusive authority in radio facility regulatory matters, and also upheld the FCC's 1996 RF Exposure Guidelines.

As the ANSI RF Hazards to Humans guideline is scheduled to be rewritten and released in 2002, there is not much point in arguing the validity of the almost 10 year old ANSI 1992 document. One can rest assured though, that the new RF Exposure guideline will be more conservative than previous recommendations. For the past 20 years, with release of each ANSI guideline, there has been a built-in 10X safety factor above known RF Hazard thresholds. That means that the 1992 ANSI guideline has 100X the protection level above the earlier document. The ANSI 2002 guideline will almost certainly have a threshold of 10X greater safety margin above the 1992 standard. These RF Exposure standards are not simple medical conclusions based on research. There are about as many documents on each side of the fence either supporting a conclusion that RF energy is damaging to humans, or generally denying the possibility, based on other research. The issues of subtle psychological effects and degradation of medical electronics (pacemakers, etc.) will also be a topic of intense discussion. The extremes, as with any legal/political argument will likely meet in the middle and the new ANSI RF Exposure guideline will prove to be a document for which most everyone will have some problem with, but will be accepted by the industry nonetheless.