



County of Orange RACES

NetControl

December 1998



Newsletter of the County of Orange Radio Amateur Civil Emergency Service

Top Story

Lucky Us

By: Joe Selikov, KB6EID

We have to be the luckiest people in the country. The keynote speakers for our November General Meeting were Paul Russell (KD6COP), Medical Disaster Management Coordinator for the Orange County Healthcare Agency and April Moell (WA6OPS), the Coordinator of the Hospital Disaster Support Communications Service (HDSCS) which belongs to the Amateur Radio Emergency Service (ARES), part of the Amateur Radio Relay League but reports to Paul and his organization.

What makes us so lucky is that these two dedicated people, and those people that serve in their organizations, are right here in Orange County. Each, Paul and April, presented information about their organization and the important roll Amateur Radio operators

play in Emergency Medical Communications.

Paul Russell's Presentation

Paul began the evening with an overview of the type of emergencies that might overwhelm medical resources. These emergencies include: Fire, Flood, Earth-



Dec. Meeting

Our next General Meeting should be an interesting one. State OES will be here and they will bring along one of their emergency communications vehicles for show and tell. This is an open meeting and everyone is invited to attend December 7, 1998, 1930 hours at the usual Eckhoff location. City RACES members are encouraged to attend and meet the OCRACES liaison person assigned to your city.

quake, Storms, Transportation Accidents and Terrorism. The resources include: Paramedics, EMTs, Ambulances, Hospital Beds, Skilled Nursing Facilities, Medical and Public Health personnel such as doctors, nurses, technicians, and medical supplies of all types.

The question is where will the quickest help come from in a major event? The answer is ourselves. Orange County has a

(Continued on page 6)

Upcoming Events

Dec. 7	General Meeting, Alternate EOC
Dec. 10	OCSD Communications Lunch, Alternate EOC
Dec. 12	RACES Holiday Party, Knott's Berry Farm
Dec. 14	Staff Meeting, Alternate EOC
Jan. 4	General Meeting, Alternate EOC
Jan. 11	Staff Meeting, Alternate EOC
Jan. 25	City/County RACES meeting, Alternate EOC
Feb. 1	General Meeting, Alternate EOC
Feb. 8	Staff Meeting, Alternate EOC

Inside this issue:	
Top Story	1
Upcoming Events	1
Captain's Corner	2
ECC News and Views	2
Training	3
Commentary	4
Committee Reports	5
Election Letter	7
Editor's Notebook	8
Did You Know ?	8

Captain's Corner By Ray Grimes

Here we are, going into the last month of another year. OCRACES has had a spectacular year, with our support of two elections, a major brush fire, a search for a missing person, several intensive training exercises, the cities and counties partnership program, the Emergency Response Institute, and a number of achievements, including the upgrading of our Loma Ridge RACES EOC facility installation.

As I have said before, this organization, like all organizations, is made of the sum of efforts of its members. This is even more critical to the existence of OCRACES in that there are really but a handful of us, in comparison to other organiza-

tions. We need continuous and total support from each member in order to maintain the high quality program we strive for. OCRACES has a minimum participation requirement to maintain membership, but it has no requirement for maximum participation. That is entirely up to you, remembering that this program is as good as its members.

When I assumed the Captain position, I made a bargain with its members to be your leader, providing that each member would support the program and help to carry the load. Most of you have met that challenge. I also had invited all of you to tell me how we are doing, at any time, and

to suggest ways to improve our performance. That offer is always open to you. You needn't wait for a meeting to make those recommendations. Your comments, whether positive or negative, will always be reviewed and taken seriously. Criticism of a program does not in any way diminish the respect I have for each of you. In fact, I urge you to tell me what you think, and what you want, but I caution you that if its a workable and constructive idea, you will likely be called upon to manage that program!

May you and your families enjoy the best of holiday seasons and a safe and prosperous new year.

ECC News and Views by Robert Stoffel

As our thoughts turn towards the upcoming holiday season, we are preparing our review of OCRACES activities for 1998. It has certainly been a busy year with many activities. At the December 14, 1998 Staff Meeting we will take some time to say thanks to our members for their collective and individual achievements. All OCRACES members are encouraged to join us as we acknowledge our accomplishments! After the awards we will conduct a review of our 1998 goals and establish new goals for 1999.

Our next General Meeting should be an interesting one. State OES will be here and they will bring along one of their emergency communications vehicles for show and tell. This is an open meeting and everyone is invited to attend December 7, 1998, 1930 hours at the usual Eckhoff location. This will also be a good time to meet your new RACES Liaison. Our latest program provides an OCRACES member to function as a liaison with each city and surrounding County RACES organization. I am excited about

this new link between the various organizations. If you have not talked to your new liaison, please call me and I will make sure you get connected.

The Lakewood District of the Los Angeles County Disaster Communications Service (LADCS) is hosting a DCS Message Handling class on December 2, 1998 at the Los Angeles County Sheriff's Lakewood station. The class is primarily for members of DCS but a few seats are available for Orange County participants. If interested, please call me and I will provide you with all the details. Thanks to LA DCS for thinking of Orange County as they conduct their internal training sessions.

It has been close to a year since the 1997/1998 holiday season flu epidemic. In September 1998 the County of Orange Emergency Medical Services Agency (EMSA) released a report on the winter flu epidemic. This lengthy document contained several references of OCRACES participation by providing BLS ambu-

lance providers with information on which hospitals were open or closed. "This innovative resource might have been used much more heavily had it been instituted earlier during the flu epidemic, when the situation was at its peak" said the report. EMSA has indicated that OCRACES will be requested again if a similar epidemic were to occur in the future.

As the year comes to a close, and my column for this month, I'd like to invite our OCRACES membership to the various holiday parties this month. Our OCRACES holiday party is set for Saturday, December 12, 1998, at 1800 hours at Knott's Berry Farm. The annual OCSD/Communications lunch will be held at Eckhoff at 11:30 on December 10, 1998. The annual OCRACES member recognition will be held at our Staff Meeting on December 14, 1998. Please join us as we celebrate the holiday season and reflect on our activities this past year. On behalf of OCSD/Communications and myself, happy holidays!



The OCRACES Holiday Dinner Party will be on December 12, at 6:00 PM, at Knott's Berry Farm. This schedule is in response to a vote by the OCRACES membership and guests. In the event that any of these details may change, monitor the Monday night nets and be sure to attend the OCRACES meetings for updates.



Training

New Training Articles

Starting with the December issue, OCRACES Training Officer Lt. Mike Krueger, N6MIK will be submitting small articles for NetControl related to training. The same information will be sent to our Web Master, Tom Mirabela, KD6AAN for posting on the OCRACES web page. The Web page will provide access to an archive of training related articles.

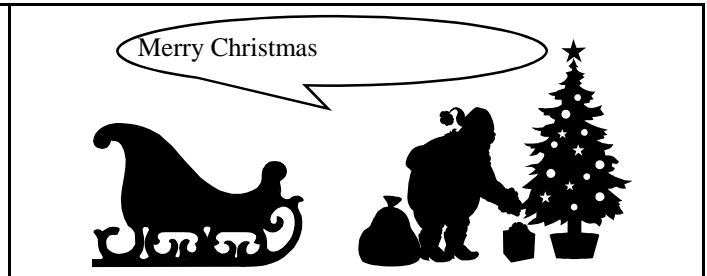
The Structure/Hazards Evaluation Marking System.

By: Lt. Mike Krueger, N6MIK

This month, I'd like to introduce you to The Structure/Hazards Evaluation Marking System.

This system is used nationwide to conspicuously denote information relating to structural integrity, hazards and safe access points to damaged structures in a disaster area.

It is important to know and understand the markings that are used by structural specialists and search teams when choosing Communications Command Post locations and temporary repeater or antenna sites in a disaster area. OCRACES may be utilized in these areas and should be aware of the marking systems to minimize the



risk of injury or equipment loss/damage.

The Structure/Hazards Evaluation Marking System consists of a 2' X 2' square box outlined at any location accessible for entry into any compromised structure. International Orange color spray paint is used for this marking system due to its high visibility. Specific markings are made adjacent to the box to indicate the condition of the structure at the time of evaluation. In the event that there is not room near the entrance point, an arrow will point from the box to the safe entrance. The table below depicts the various structural evaluation markings.

The Search Markings system is similar, and often used with the Structure Marking System. The Search Markings System is used to indicate victim status and hazard location inside a structure. It will be covered next month. Until then, stay safe and 73.

<ul style="list-style-type: none"> The structure is accessible and safe for search and rescue operations. Damage is minor with little danger of further collapse 	
<ul style="list-style-type: none"> The structure is significantly damaged or completely pancaked. Some areas are relatively safe, but other areas may need shoring, bracing or removal of hazards. 	
<ul style="list-style-type: none"> The structure is NOT SAFE for search and rescue operations and may be subject to sudden additional collapse. 	
<ul style="list-style-type: none"> An arrow next to a marking box indicates the direction of the safe entrance to the structure. 	
<ul style="list-style-type: none"> "HM" indicates that a hazardous materials condition exists in or adjacent to the structure 	<p>HM</p>
<ul style="list-style-type: none"> This shows a completed structural evaluation. The safe entry point exists above the marking (window, upper floor etc.). The single slash indicates the structure may require bracing or shoring before search operations. The assessment was made at 1352 hrs, 11/10/98 with the indication of natural gas hazards in the structure. OCFA Team #5 made the evaluation. 	<p>11/10/98 1352 hrs. HM - Natural Gas OCFA Team 5</p>

Commentary

Changing Disaster Communications Needs?

by: Ray Grimes, W6RYS
Chief Radio Officer, OCRACES

There has been considerable discussion on the airwaves, and a number of Ham Radio magazine articles speculating as to whether Ham Radio has outlived its usefulness in disaster communications. With the widespread acceptance and use of cel-fones, paging, satellite communications, low-cost Business Band and Family Radio Service portable transceivers, Internet, FAX, etc., you can't help but wonder if these skeptics are right. If we study the most recent and spectacular world disaster, the severe flooding in Nicaragua, you will see some interesting trends and challenges.

Ham Radio, as always, served an important purpose in disaster communications, connecting Nicaraguan officials with worldwide Red Cross and disaster responders. Ham Radio also provided the communications necessary for families to locate their distant relatives, to coordinate family meeting locations, and to arrange the delivery of needed food, water, and medicine. A unique challenge in this major flood was that many ham stations were destroyed. These would have otherwise been valuable and effective communications posts, but the disaster took a toll on most of these stations. For those stations which survived, many were unusable because power lines were down. The re-

maining operating stations found themselves to be very busy, handling the full load of international disaster communications.

Several agencies and radio equipment manufacturers sent handheld portable transceivers and cel-fones to Nicaragua. Cellular providers set up temporary cell sites. Telephone line connections to these sites required temporary microwave links, as most telephone wire systems were washed away. The new Iridium satellite system (soon to be commercially dedicated) was made available, with Motorola supplying a quantity of Iridium portable transceivers. This is an interesting comparison to the Northridge Earthquake where the Nextel iDEN system (Fleetcall at the time) was also about to be commercially available, and was offered to FEMA and the Red Cross for their almost exclusive disaster communications use.

Ham Radio HF operations were most valuable in communicating with distant stations. While military radio could also provide HF communications, Ham Radio has the ability to activate almost immediately, with the likelihood that there will be operating stations near on within the disaster area itself. Local communications in Nicaragua were also important, but the prime task was to seek outside help and to communicate the situation to the world. That was best accomplished with HF Single Sideband voice radio. One shortcoming of Ham Radio and most of the other local commercial communications systems was an inability to establish tele-

phone patches in the vicinity of the disaster area due to almost total loss of phone lines and switching offices.

Ham Radio can bring some unique equipment and talent to the disaster scene which isn't available through other sources. Ham Radio stations are many, so if a few are destroyed, others will remain in operation to carry the load. Simplex radio operations are always available with use of handheld portable transceivers and mobile radios. Some of the many area wide Ham Radio repeaters will remain in operation. OCRACES also has several portable UHF repeaters which can operate for hours, days, or weeks on battery systems. For example, a portable repeater in a vehicle parked on a mountain can provide reliable radio coverage over most all of Orange County. Where poor propagation, noise, or RF interference prevents disaster communications, Ham radio operators can most always work around these problems.

A significant lesson from the Nicaraguan flood disaster is that portable, self-contained communications equipment capability is a must. The best fixed station can be wiped out by nature's wrath (along with the EOC). We must seriously consider the stand-alone portable station, with portable antennas, and a realistic long duration power source. While we won't likely ever have a natural disaster here of the magnitude of the Nicaraguan flood, we shouldn't bet on the slim possibility that we won't either.

ESP

Dec. '98

Carbon Monoxide and Radon

You can't see it—You can't smell it, but carbon monoxide and radon gas can both



be serious threats to you.

Some tips to remember to avoid carbon monoxide poisoning include: never use charcoal indoors; gas ovens or ranges should not be used to heat a room; don't use gasoline powered engines in enclosed spaces and don't idle the car in the garage.

Radon levels can be reduced by sealing your home. Both carbon monoxide detectors and radon test kits are available for home use.

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/](http://www.qsl.net/wb6hag/)

Tri-Agency Update - SCRRBA was approached, informally, in October about obtaining a frequency in the 2 GHz and higher range for an ATV repeater. To date, we have not received a response. Therefore, we are presently preparing a formal request that will be filed this month requesting frequency coordination.

Until we received their reply, the Tri-Agency program remains on hold.

ATV Communication Frequency Update - TASMA tabled their vote for moving the APRS frequency during their November meeting, in order to better define a new ATV VHF frequency. Their Technical committee met and proposed 144.345 MHz instead of 144.34 MHz. This allows for a 15 kHz separation from

the popular 144.33 MHz. It was learned that 144.33 MHz was heavily used for community Ham activities and users feared interference from ATVers and vice versa. It is anticipated that the new frequency will be voted upon and approved during the December meeting. The new frequency is expected to take affect Jan. 1, 1999, according to inside sources.

Report on HF Propagation

By: Ken Bourne, W6HK
Deputy State ACS Officer
California Governor's Office of Emergency Services

HF is expected to play a role after the "big one." Much of the HF traffic would not be RACES-related, though. Rather, it would be used for health-and-welfare traffic, typically handled by ARES or the National Traffic System. Much HF traffic would not even be on the ham bands, such as MARS and SHARES traffic.

During the October drill, we saw the value of HF for RACES communications from County to County, when going beyond the range of VHF and UHF repeaters. Near

Vertical Incident (NVI) antennas are useful during the daytime when communicating on 75 or 40 meters with stations up to a couple of hundred miles away. NVI antennas radiate straight up to the D-layer of the ionosphere (about 45 miles high), and straight back down to nearby stations. However, at night, when the sun "disappears," the D-layer also disappears, leaving the F-layer (about 200 miles high), which is ineffective for short-haul communications, but effective for longer-path/lower-angle communications. The night-time F-layer path on 40 meters is often too long for Sacramento, but often is

OK on 75 meters. During the day, the D-layer path is too short on 75 meters for Sacramento (but is good to Imperial County), but often is OK on 40 meters. During the drill, San Diego County RACES tried a NVI antenna on 40 meters, which was much more effective for communicating with Los Alamitos than their lower-radiating-angle inverted V. A lower angle of radiation is needed when communicating farther away via the D-layer on 40 meters, such as up to State OES HQ in Sacramento or to Washoe County (Nevada) RACES.

Report on OCCARO Meeting

By: Joe Selikov, KB6EID

The Orange County Council of Amateur Radio Organizations (OCCARO) was held on October 20. The next meeting will be held on December 15. OCRACES was not represented at the meeting. The following clubs/organizations were present: Edison Amateur Radio Network (EARN), South Orange Amateur Radio Association (SOARA), Fullerton Radio Club (FLC),

Ladies Amateur Radio Association (LARA), Buena Park Amateur Radio Club (BPARC), Placentia ARES/RACES/CERT, Garden Grove Amateur Radio Club (GGARC), Western Amateur Radio Association (WARA), Orange County Amateur Radio Emergency Service (OCARES), Two meter Area Spectrum Management Association (TASMA), and the West Coast Amateur Radio Club (WCARC).

Many topics were discussed. Two may be of interest to OCRACES members. The first was in reference to the ARRL South West Division 1999 Convention. This year it will be at the Queen Mary on October 1, 2, and 3. The second topic was the theme for the 1999 Orange County Fair. This will be the 150th anniversary of the gold rush. The theme is "California Gold".

(Lucky Us Continued from page 1)

strong community involvement from such organizations as C.E.R.T., DMAT, Amateur Radio, affiliations, and local vendors. All will pull together to support Orange County Hospitals, transportation providers, doctors, nurses and EMT by providing the needed communications or supplies. Paul stated that the key to organizing and maintaining these resources in a state of readiness is to have a response plan. But having a plan is only part of the solution. A partnership with each of the organizations must be formed. Training and Networking must take place on a continuing basis.

There are 4 "A's" to be remembered; Alert, Assess, Analyze, and Ask. The first two and the last all require some form of communications. Alert is the process of notifying the medical resource of an emergency. Wide spread emergencies such as earthquakes are clear, the ground shakes, you respond. However, localized emergencies may require contacting medical providers outside the affected area. Or communications inside the area may be cut off. This is where Amateurs play the biggest role. The second step in the process is to Assess the availability of resources. Step three is to analyze the requests for service against the available resources. Lastly is to Ask for help from Local resources, adjacent counties, Region 1 Regional Disaster Medical Health Coordination (RDMHC) or State EMS Authority.

The Health Care Agency has identified five major information tools. These include: Amateur Radio, ReddiNet/H.E.A.R., Telephones/Cell Phones, FAX and Email, Agency Reports & Observations and T.V. or Radio reports.

Paul concluded his presentation by leaving us with four key points to remember.

1. Begin Planning Today
2. Network - establish mutual aid links
3. Know Systems and Resources
4. Practice, Practice, Practice.

April Moell's Presentation

April Moell represents one of the premier Amateur Radio organizations in the Country. Fortunately for use they are located here in Orange County. Similar groups are

using the information and lessons learned provided by April and members of the HDSCS to model their organizations.

The HDSCS presently supports approximately 34 hospitals/medical centers. Backup emergency communications is a crucial part of each care facilities Emergency Response Plan. Five major links have been identified. These include internal communications (within the facility), facility to facility, HEAR/ReddiNet, City/County, Red Cross, and supply communications. Amateur Radio operators are part of the backup plan and during actual emergencies have been called upon to provide some or all of the services.

What makes the HDSCS work is their ability to respond quickly to each facility. This is accomplished through the implementation of a call up system that utilizes individual call-up lists for each hospital or facility. Each list contains enough redundancy to assure the facility will always reach someone to start the process. One call is usually all that is needed to start the system in motion. Facilities also are given the option to utilize a pager backup system if a human cannot be reached or the calling opportunity is limited. This type of deployment method works best for phone outages, localized incidents, evacuations, etc.

Unlike RACES organizations, the HDSCS members self activate upon realization of a disaster. Members report to their primary core hospital or facility. A Net control is established with the ability to redirect members to facilities needing additional resource allocation. This deployment method works best for wide spread disasters such as earthquakes, and floods.

What makes the self activation work? In the traditional "Top-Down" response, a designated net control operator takes checkins while responders standby for assignments. Officials decide whether to activate or stand by based on limited knowledge of the situation. Assignments come down the chain based on whatever information is available via already disrupted communications channels. The HDSCS uses a "Bottom-Up" response method which utilizes the self activation of members to provide a quick look at the situation status which is in turn reported to officials who are able to make more informed decisions.

April concluded her talk with a discussion of lessons learned. She wanted the listeners to understand that these lessons were not just a list of academic topics but represented real situations learned during the almost 20 year history of the HDSCS organization. I am including this list so as to provoke some thought about your organizations readiness to serve.

- Do not overstate your capabilities or promise resources you can not provide
- Know your agencies communications needs
- Know the other communications resources used by the agency
- A station and antenna is not enough
- Being a Ham is not enough
- Hospital (agency) Ham employees are not necessarily emergency communicators and are not always available. It is hard to wear 2 hats.
- Retirees are not necessarily more available than employed Hams
- ARES/RACES dual allegiance can limit response
- Do not count on one repeater or one frequency
- An emergency van is useless without skilled operators and 24 hour access
- Giving the Emergency Coordinators phone number to a hospital (agency) is not an alerting procedure - there must be redundancy
- Have a plan for when the phones are down
- Do not operate in vacuum - develop liaisons with other Ham emergency groups
- Contesting and Dxing are not preparation for hospital emergency communications
- Public service events are not adequate training for hospital emergency response
- Field Day operations do not simulate hospital emergency communications
- A weekly roll-call check-in is insufficient training for net controls and net members - members must be taught to listen
- Test the activation and response plans - do not dry lab!
- Prepare for personal needs away from home - do not become part of the problem
- Be able to adapt to situations - need good interpersonal skills
- Agency personnel change often - keep in contact and review regularly
- Have a debriefing plan for dealing with Critical Incident Stress
- Do not wait until all else fails

SHERIFF'S DEPARTMENT, ORANGE COUNTY
COMMUNICATIONS

Intra-Department Memo

Date: November 5, 1998
To: OCSD Communications Election Night Workers
From: Walter W Wilson
OCSD Communications

Sometime between the closing of the polls on November 3rd and 1:00 a.m. Wednesday morning, forty four vehicles traveled from the far reaches of Orange County carrying 1646 boxes of ballots to the Vote Tally Center in Santa Ana. When we started assembling the team to complete this task we looked to County employees from OCSD Communications, OCSD Control One, OCSD EBC, PF&RD Transportation, PF&RD Planning, Social Services Agency, OCSD Reserves and OCSD RACES. All total 124 members formed a team of drivers, security, clerical and communications.

You can give yourself a pat on the back. You deserve it. This was the largest election to day that we have worked. Precincts were increased to 1646 and Collection Centers were increased to 23 and the total number of transportation vehicles increased to 44. The first van (Randy Mobley - 12A - Leisure World) arrived at the Vote Tally Center at 9:38 p.m. The first van to complete their assignment for the evening was Steve Halloran - 3A- Buena Park at 9:59 p.m., and the last van in was Steve Stanton - 3B - Buena Park at 12:39 a.m. By 10:40 p.m. we had vans waiting for one box and by 11:00 p.m. we had 10 vans that had been waiting over 30 minutes for just one box.

I received a call from the Registration and Election people to thanks us and to apologize to the drivers that had to load their vans due to the lack of personnel at the Collection Centers. They especially pointed out Huntington Beach and Los Alamitos and wanted to make sure that the drivers (Jeff Yaughner, Chris Green, Ken Blair, Jun Illoso and Patrick Duffey) were thanked. This again proves that "Communications" can step forward and has the flexibility to handle any job.

You did an excellent job of keeping Control Two informed on the radio. RACES personnel from several city groups and members of OCRACES provided additional information that improved our ability to track the ballot boxes. Thanks also goes to the clerical staff that worked in Control Two as they tracked vehicles and verified all the boxes that were delivered to the Vote Tally Center. I did commend the Registration and Election's people for having a large number of personnel that were able to unload the vans in a rapid manner and OCRACES member Joe Selikov for keeping the flow of vehicles moving in the off loading area.

I thank each and every one of you that supported the ballot transportation effort and me. I appreciate all your effort. You made my job much easier. Thanks again...

Walt

Meetings:

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

Staff: Second Monday of Month
(members only) @ 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: 449.175 MHz output,
444.175 MHz input, 107.2 Hz
PL (private)

OCRACES Web Page:

<http://www.ocraces.org>

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Editor's Notebook

This is the last **NetControl** for 1998. We have seen many changes in our organization, most have been very positive.

I must admit that before becoming the editor I did not read all the articles. I am now realizing that this was a mistake. What impresses me the most is the depth of knowl-

edge contributed by our members.

I am looking forward to next years articles and expecting them to be even better. I would encourage each member to submit at least one article. Share at least some part of your knowledge. That is what will continue to keep our organization strong.

Did You Know?

The Secondary Disaster

by: Ray Grimes, W6RYS
Chief Radio Officer, OCRACES

The recent Central American floods have been spectacular and very educational, from a disaster worker's professional interest. First, there is the flooding and subsequent mud slides, causing extensive property damage, injury, and loss of life. Then there is the secondary disaster, caused by standing water mixed with raw sewage, waste, and decaying matter. This poses a serious health threat to rescuers and disaster workers. Such conditions exist after most disasters, such as major urban earthquakes. Disaster workers must not disregard proper hygiene and personal safety in responding to the emergency. All disaster workers (including RACES communicators) should obtain a Hepatitis A virus (HAV) series consisting of one shot followed by a booster shot six to 18 months later. Hepatitis A is commonly found in contaminated water and in contaminated food. It can also be transmitted by close personal contact with a Hepatitis A carrier. The highest incidence of Hepatitis A is in children. In 1996 approximately 29,000 cases of HAV were reported in the United States. Symptoms are fatigue, vomiting, fever/chills, jaundice, and abdominal pain, to name a few. Recovery with proper medication begins in 3 weeks and may continue for 6 months.

A Tetanus shot series is also highly recommended, with a booster at 5 or 10 years in-

tervals. Tetanus, or lockjaw, can be prevalent during floods where waste contamination is present. Tetanus exhibits initial symptoms of muscle soreness and spasms. Tetanus has a 40% mortality rate in the U.S. but can be prevented by proper inoculations.

The Hepatitis B shot series is strongly recommended for medical personnel, firefighters, and police officers who, in the course of their duties, come into direct contact with the public. Drug users are frequent carriers of Hepatitis B virus. Emergency responders must exercise caution when handling such persons, remembering to wear two layers of latex gloves and to refrain from placing their hands in the victim's pockets where dirty drug syringes may be stored.

For disaster service worker casual field duty, it is highly recommended that several pairs of latex surgical gloves be kept available, and two pairs be worn simultaneously when handling victims or their possessions. It is also critically important that responders never wipe or touch their own face and in particular, their own mouth without proper hand washing, remembering to wash thoroughly every time before eating. A few precautions can help you stay healthy, and to be available when you are needed most.

Sources:

HepNet: www.hepnet.com

Mediscope: www.mediscope.org/tet.htm

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