Wild Fire Lessons Learned

San Diego County Octobers, 2003 and 2007
From a Communications Prospective
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Summary. Having participated as a Fire Department Support and Public Information Officer, and Amateur Radio Operator for the San Diego County Office of Emergency Services (OES) during the 2003 and 2007 San Diego County Wild Fires, I have a few opinions on what the average citizen, and especially the Amateur Radio Operator interested in using their hobby for community service, needs to do to prepare for major and minor disasters. First, a little background on Amateur Radio in San Diego County.

Amateur Radio and Local Government. San Diego Ham (Amateur Radio) operators are very fortunate in the support given to them by local government agencies. When I went to the 2007 Global Amateur Radio Emergency Communications Conference (GAREC-07) in Huntsville AL last summer (http://www.arrl.org/news/stories/2007/08/24/102/?nc=1) I assumed I would pickup some new knowledge on Ham radio use during emergencies. And, even though I did learn of new technologies for Ham radio during emergencies, my biggest surprise was how far San Diego County and most of the west coast was ahead of the rest of the world in cooperation between Ham radio and official government agencies. I heard story after story on how local, regional, and national governments look at Ham Radio as a non-resource during emergencies.
In San Diego County, the Ham radio community is integrated in the Counties disaster preparedness plans http://www.sdcounty.ca.gov/oes/ . The Radio Amateur Civil Emergency Service (RACES) units are under the San Diego Sheriff Department and OES. The San Diego Regional Communications system (RCS) https://www.rcs800mhz.org/web/ maintains a county wide network of 6M, 2M and 70cm Ham repeater systems. San Diego Amateur Radio Emergency Service (ARES) has agreements with county medical and non-profit agencies, American Red Cross, Salvation Army, to provide emergency communications to hospitals and in the field during emergency recovery efforts. All these groups and agencies work under a joint, inter-agency structure using the National Incident Management System (NIMS). It is recommended any Amateur radio operator involved in emergency communications take the free, on line FEMA courses at http://www.fema.gov/emergency/nims/nims_training.shtm

Community Emergency Response Teams (CERT) The Community Emergency Response Team (CERT) Program educates people about disaster preparedness for hazards that may impact their area and trains them in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations. Using the training learned in the classroom and during exercises, CERT members can assist others in their neighborhood or workplace following an event when professional responders are not immediately available to help. CERT members are also encouraged to support emergency response agencies by taking a more active role in emergency preparedness projects in their community. **In San Diego County** there are over 2500 CERT program graduates.

(https://www.citizencorps.gov/cert/) The majority of the CERT teams have Ham operator members.

The 2007 San Diego County Wildfires

On October 21, 2007, at Harris Ranch Road in the community of Potrero CA, the San Diego series of October Fires began. The next presentation in Power Point will show you details of this and the other fires in San Diego County. A summary from a communications and Ham radio prospective showed:

Public Service Radio. After our 2003 wild fires San Diego County, spent over 20 million dollars upgrading the 800 Mhz RCS system. As a result of this upgrade and the redundancies built into the system with emergency power and repeater site overlaps, there were virtually no communication problems between first responders and local government agencies. Cal Fire had good coverage with their VHF systems even though several sites were burned over. It turns out brush clearance not only works to protect your home but also to protect mountain top communications facilities. In a later Power Point we will give you further details of the RCS system.

Citizen communications systems. Failed, failed, failed! In the Harris incident every community that was burned over lost landlines and AC power. Most cell sites failed immediately or shortly after their backup propane power systems ran dry. The same held true for the other fires in the October incident. Due to the massive nature of destruction of the infrastructures, many areas did not get their utilities back for eight weeks.

Amateur Radio. ***"When all else fails Amateur Radio Works"*** and we proved it. Over 300 RACES, ARES and just regular Hams provided emergency and logistics message handling traffic from 10 minutes after the fires started until utilities were restored. San Diego is blessed with a huge number of very well run 50 through 440 Mhz repeater systems. None of the critical repeaters failed. Ham operators pulled shifts in every area of the active incidents and the later lengthy recovery efforts. From staffing the County Emergency Operations Center to supporting the hospitals, Ham radio worked. From coordinating their CERT Teams efforts to helping their neighbors, Amateur Radio Operators were there in force. Naturally there were not enough of us. Many worked 12 hour days, and the total number of us represented a very small percentage of licensed Hams in San Diego County. As it appears, if this is going to happen every four years we need to step up our effort to find and train these licensed operators that are on the missing list.

Preparedness

Training

The National Incident Management System (NIMS) teaches how to organize, operate, and plan during an "incident". From a 2 unit traffic accident to a massive wildfire or earthquake, the NIMS and ICS systems make it possible to deliver a more effective organization to meet the incident. It is recommended any Amateur radio operator involved in emergency communications take the free, on line FEMA courses at http://www.fema.gov/emergency/nims/nims_training.shtm

Operator Training. Know how to operate your equipment and pass message traffic. There is nothing more painful than watching an Amateur Radio Operator arrive at their disaster assignment without the knowledge on how to operate their radio. The next most painful thing is listening to them pass message traffic, using phonetics, on a full quieting FM repeater channel. Why is it fire and law enforcement can run a 300,000 acre disaster response using clear voice, but the Ham community thinks they need to use Alfa, Bravo, Charlie to pass a request to empty the port-a-potties at the Harris ICP? Ham operators need to train, train, train. Understand and practice with your own equipment. Make cheat sheets on how to change frequency settings, offsets and PL tones. Understand the various methods for passing message traffic. Standardize operations and message traffic procedures with your club or emergency group. (An S2 SSB message may need a little Alpha, Bravo, Charlie.) The Amateur Radio Relay League (ARRL) has an excellent on-line emergency training section on their website at http://www.arrl.org/cce/courses.html.

Be Prepared. There are probably as many opinions on what goes in a go kit as their are on politics. The most important thing is to have one. Get with your club or emergency organization and setup lists of equipment and supplies needed for various levels of go kits. There are currently efforts in the Ham community to setup “typing” in go kits. In NIMS and the fire service, equipment is typed by it’s capabilities. A Type 3 fire engine is a brush engine of a certain physical size, equipped with very specific equipment. A Type 1 truck is the large structure engine designed to move a lot of water on a big structure fire. Strike teams are always 5 each of a certain engine or equipment type and a command officer and vehicle. This way, anywhere in the country when an incident logistics commander orders resources they know what’s coming. In the Ham community typing is classified from the bare minimum of 1 Ham with a WT, mag mount antenna and spare batteries, to a 5 man team with full band HF to UHF equipment, accessories, antennas, food, shelters, and emergency power. Below are links to several good starting points on the subject.
http://en.wikipedia.org/wiki/Amateur_Radio_Communications_Team
http://www.wrrl.org/arct_program/default.asp
http://www.emcommforum.org/forum/

NVIS and HF Radio **“Near-Vertical Incident Skywave** is a combination of radio hardware, skywave radio propagation, operating procedures, cooperation, and knowledge used by a group of radio operators who need reliable local and regional communications when repeaters are not available and VHF simplex won’t work. It fills the gap between line-of sight groundwave and long-distance "skip" skywave communications.” (From http://athensarc.org/nvis.asp .) See this website for extensive coverage on HF emergency communications)

In California, the Amateur Radio component of the California Office of Emergency Services conducts a 75 meter net each Monday, on 3.960 Mhz, at 20:00 Hours. Emergency Operations Centers (EOC’s) from each county in California are invited to check in to the net. After the net many stations have an informal rag chew. This net insures that EOC’s Amateur Radio stations are ready for operation during emergencies.

Hopefully our experiences can be useful to your emergency communications planning and training programs. Next we will show you 2 Power Point presentations. The first is a photo review of the San Diego County 2007 wild fires. The second a brief description on the San Diego County, 800 Mhz communications system.