Let’s All Keep In Touch

By Ron Cameron, Sheriff’s Office

We have heard it our whole careers. The biggest contributor to problems at any level is, drumroll please, COMMUNICATION. No matter the subject - if communication is lacking things just don’t get accomplished, at least not as well as they could be. While communication can mean tech stuff that our ARES folks and Geek Squad deal with, it also means ensuring that messages, news, dates and thoughts are passed around. The better we communicate the more efficient we become. It’s nice to simply just be in the loop, as they say. That’s why I thought, WOW, what a super idea when Dave Sue suggested this newsletter. Some of us meet at different times and work on different projects so sharing that information among all does a bunch of things. First, it lets each of us know what people are doing, which can spawn ideas from others; second, it advises folks of our different tasks and objectives along with informing others of our accomplishments. Communication also means sharing dates for training, meetings and other special events. Overall, there are probably a zillion things a newsletter can do to help us better communicate with each other in a fun and informative way. So that’s why we’ve started this one.

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Welcome To Our Newsletter

By David Sue

Welcome to the first edition of the new monthly Clallam County EOC (Emergency Operations Center) and Communications Capabilities Newsletter. Our goal is to keep everyone informed about advances in setting up communications interoperability at all levels through the county so we best stay connected among ourselves and the outside world during an emergency. We are lucky to have dedicated and hardworking people and teams in place throughout Clallam County. You will also read here about EOC operations and training program options and updates, including Cert Teams and Map Your Neighbor groups. We encourage everyone to contribute articles about emergency operations and communications that affect Clallam County so we can all stay up to date.

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Here is something to think about. I’ve used this often when working with groups, both public and private – including boards of directors for organizations I’ve served with. You’ll want to read it several times to fully digest it’s meaning. I hope you find this as valuable as I have, and refer to it frequently. David Sue

Everybody, Anybody, Somebody & Nobody

There was a most important job that needed to be done, and no reason not to do it, there was absolutely none.

But in vital matters such as this, the thing you have to ask is WHO exactly will it be to carry out the task.

Anybody could have told you that Everybody knows this is something Somebody would surely have to do.

Nobody was unwilling. Anybody had the ability. But Nobody believed it was his responsibility.

It seemed to be a job Anybody could have done, if Anybody thought he was supposed to be the one.

But since Everybody recognized that Anybody could, Everybody took for granted that Somebody would.

But Nobody told Anybody that we are aware of that he would be in charge of seeing it was taken care of.

So Nobody took it on himself to follow through And DO what Everybody thought Somebody would do.

When what Everybody needed to be done was not done at all Everybody was complaining that Somebody dropped the ball.

Anybody then could see it was an awful crying shame And Everybody looked around for Somebody to blame.

Somebody should have done the job and Everybody would have. But in the end Nobody did what Anybody could have.
In Touch

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I want to extend my sincere thanks to Dave and Fran for taking this task on and making it work. And of course, improving our communication. I’ve taken up some room so don’t want to get too wordy. But, from my end, there are several things we are working on:

• Public alert systems including Emergency Alert Systems
• A cooperative agreement with Jefferson County EM to have our EOC’s work together
• Organizing Command Areas
• West End Highway Issues as we all know
• Public events like Home Show and more

Thank you all for everything you do. We are more successful than you know. Outside emergency management facilities are envious of the product our volunteers achieve and how efficient we truly are.

Welcome

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This newsletter is of you, by you and for you, providing a way to share what you are working on and how it fits into the big picture. We all need to know the capabilities that exist now and how they are used. But importantly, we also want to hear of problems within the system so they can be addressed. There’s no better way to do that than by sharing information and working as a team on strategies that develop solutions as issues arise. Together we are stronger.

Remember, we are all stakeholders in this effort. Our families, friends and others living in Clallam County will depend on our help in case of emergency. Smoothly operating communications are crucial. There’s no avoiding a disaster sometime in our future so efforts now will make a huge difference when the time comes.

Preparation is our defense and you are a big part of it. I’m sure each of you will find something of interest in every newsletter. Your feedback is important to us. Let us know what you think and send in suggestions for improvements. This newsletter is for you. Articles regarding the EOC’s communication efforts are welcome and encouraged. Sharing information is key.

Now please sit back and read through our Family Emergency Readiness

By Frank Bruni, Logistics Section

Weather-related issues and an occasional earthquake can be big events especially when the forecast and the event don’t match up. Power outages along with school and road closures are to be expected. Planned road expansion work on 101 around Lake Crescent this summer is bound to cause travel disruption to and from Forks and along 101 South.

In the event of a major weather event or anything that restricts travel, it’s a good idea to have additional food and water on hand. Stocks of bottled water, pre-prepped food and/or pre-packaged food are good for individuals or families, along with a well-stocked first aid kit, flashlights and batteries.

Several online companies specialize in pre-packed meals with a long shelf life. Food, and at least two cases of bottled water - along with a water purifying kit will see a family through a short-term situation if rationed correctly.
Location Location Location

Don’t Underestimated For Emergency Decision-Making

By Dave Hull, Justa Geek

If you have ever used an in-car navigation system, Google Maps on your smart phone or Google Earth to look at your house, then you have been a Geographic Information Systems (GIS) user. Using GIS can and should be pretty easy but putting together the pieces that make it work can be challenging. Building GIS components is a cross between, graphic arts, CAD drafting and computer programming. Once a disaster strikes it’s crucial to have the GIS component of emergency management ready to go, with pre-built GIS tools in place to assist the ICS team in decision-making, particularly in collaborative tactical and strategic “brainstorming”.

When you think about Disaster Management you quickly realize almost every question contains “where”. Call “911” and the first question you’re asked is “where are you?” Likewise once your location and the nature of your emergency is established, the dispatcher will direct a responder to your location. Without location information time is lost and resources delayed. During a disaster, where by definition, resources are overwhelmed, lack of clear location information, at the least, means delays, wasted resources, and likely loss of life.

I’ve worked in the local Sheriff’s Search & Rescue (SAR) Posse for more than 14-years and location information is critical. From the moment we are dispatched (to a base camp staging location), till we find the “location of the subject”, and then till we get that subject back to our base camp, we are constantly communicating location information. The entire base camp operation is focused on building a “picture” of the special relationship between our teams in the field, the terrain (and it’s hazards, like cliffs, or streams), its natural corridors (where subject would likely move), areas we’ve cleared (searched areas) and those we haven’t (areas to be searched). So it goes with most disaster responses.

We’ve grown accustomed to using GIS information in our daily lives, from planning a trip on MapQuest or Google Maps to finding a restaurant with our smart phones. We don’t even think how these GIS systems get that information. If you’re in Port Angeles and want to find a restaurant, there are a limited number of locations that are provided on your phone. However, take that same phone to New York City with it’s multitude of options, and the phone will still get you a map & list of restaurants. The common GIS systems we use daily access massive amounts of information (data) on a server (at some location on the Internet) and then download a small amount of it to answer our “location” question. That’s a great way to provide GIS information as long as there is Internet connectivity by cell 4G, WiFi or home cable connections.

But what happens if there is no Internet? Let’s go back for just a moment to the SAR Posse. We usually didn’t have reliable Internet as there’s no cell coverage in most of our “wilderness.” We couldn’t “download” our GIS information for just the area we were working in. We had to carry with us the information we needed. This is the reality of “no infrastructure” emergency response. That means the things we take for granted, like cell phones, cable TV, WiFi, Ethernet, even electricity aren’t available (without extreme measures like satellite terminals and generators).
The reality of Disaster on the Olympic Peninsula is some level of “infrastructure down” from power outages in winter storms to complete infrastructure failure with an event like a Cascadia Fault earthquake. For this reason a Disaster GIS system to support Emergency Operations on the North Olympic Peninsula needs to be “stand alone”. It must contain all the information (data) that could reasonably be needed to answer the “where/location” questions that will inevitably be asked by the ICS management team. Questions like: “where is the bridge out?” “where do I need the evacuees to report?” “where can I set up staging areas for incoming supplies?” “where can I land a helicopter?” “where do we already have a team on the ground near there?” and so on.

Maps quickly become out of date on many levels (look at the Legend fields on any printed map and you will see how old the information is).

In order to build such a “stand alone” GIS system you need a number of pieces. First, and maybe most importantly, there has to be some type of terrain visualization tool. A visualization tool must know where it is, relative to the rest of the world (something called geo-referenced). There are several visualization tools, with the most common being maps and photographic images. Each one has advantages and disadvantages. For our purposes the photographic image that we have available is the best choice. Its major advantage is that it’s current. Maps quickly become out of date on many levels (look at the Legend fields on any printed map and you will see how old the information is). Our photo imagery is 2015 and is typically updated every two years. A secondary advantage of imagery, which makes it superior for most emergency responses, is that it accurately records information not normally found on maps. That includes all the buildings that aren’t obscured from overhead view. Any good GIS system will allow you to measure linear dimensions, like distances from a building or the area of a building. This can be done with reasonable accuracy and in real time, as needed.

I was working an exercise some years ago where there was a “bomb” in a populated part of Port Angeles. The Bomb Squad made a rough standoff radius estimate base on the bomb’s characteristics and then passed an “evacuation zone” recommendation to Operations. It was just a radius in linear measure (yards, meters etc). Operations asked, “What buildings are within that radius, what buildings do we need to evacuate?” But, of course it wasn’t a good time to take a tape measure to the bomb location, stretch it out and then swing an arc. So I drew a measured radius line from the bomb location and asked the GIS to draw a circle with that radius. The resulting photograph had a neat evacuation circle drawn. The Operations Section only had to look at whether a building fell inside or outside the circle to determine it’s evacuation status.

Next month we’ll look at “layers” in a GIS system. We’ve already seen the first layer - the map or photo image. Layers are specific kinds of information you “overlay” on the map or photo to guide decision-making in an emergency setting.
HAM Radio and ARES
The Backbone of Emergency Communications

By Mike Becker

My belief is that we, as HAM radio operators provide a valuable emergency communications capability. It’s important for emergency resources in our county, other counties we interface with, and both state and federal agencies all understand that. Amateur Radio is a valuable communications resource.

HAM radio has the ability to communicate over short and long distances. It is capable of voice, digital, satellite and other communications medias. Because it operates on multiple bands it can work under varying atmospheric conditions. Many HAM operators have equipment at home, some of which is portable, thus allowing communications to be established where needed. Some HAMs become members of ARES/RACES so they are fluent in communications with emergency jurisdictions. HAMs provide vital communication links when normal communications channels are down, or additional communication capabilities are needed.

The advantage to having various bands is that HAM radio can operate in many environments under adverse conditions when other radios may have difficulty.

HAM radios transmitting in the High Frequency (HF) bands can go long distances, including to the other side of the planet. Atmospheric conditions can adversely impact the ability to transmit, but due to the number of bands available, communications can most likely be made. HAM radios also operate in the Ultra High Frequency (UHF) and Very High Frequency (VHF) bands. These are line-of-sight radios similar to that of normal police and fire radios which also operate in these bands. As with police and fire radios the range can be extended by using repeaters to allow communications over longer distances.

HAM radio is more than just voice communications. It can also be used digitally, and this capability is twofold. First, users can send emails much as you are used to using this format. Connection is made to a ground station with internet capability and the message is put on the internet just as though it was sent from an email client. It is also delivered as though it had been received by an email client on the user’s computer. Emails can be sent anywhere in the world with HAM radio’s digital ability.

An additional capability is to send emails peer to peer. In an emergency where no internet connectivity exists and no email transmission is possible, two HAM stations can connect and transfer emails between them. A scenario for this capability would be a Cascadia rising event where all internet capabilities are lost. Command centers across Clallam County can send and receive emails between themselves, and relay emails as needed.

An additional option, which has yet to be fully explored is satellite
HAM & ARES
communications via HAM radios. Some satellites have HAM capability. This could be used to transmit both voice and data over very long distances.

Trained HAM operators are essential, and work with the county through ARES (Amateur Radio Emergency Services). These operators are trained in ICS procedures and stand ready to support, or supplement, emergency communications from the Emergency Operations Center (EOC) and Incident Command Centers. These operators are also able to network with other ARES members, as well as with state agencies to help in providing communications coverage. Additional information about ARES can be found at their website: http://clallamares.org

HAM and ARES operators with mobile equipment can quickly be sent into the field to provide information back to command centers and other emergency centers. These members are trained to operate individually as directed or be placed with other emergency personnel. Where this occurred and was invaluable was during 9/11 when all emergency communications equipment was destroyed at the top of the World Trade Center. Until these communications could be reestablished HAM operators helped to provide emergency communications for NYC.

HAM and ARES members often have base stations that can be used as relay stations when needed. Many of these base stations have both HF and UHF/VHF capability enabling the operators to listen and communicate on multiple frequencies to work with those in the field using line-of-sight communications (UHF/VHF). They can then relay vital information longer distances using HF. Meanwhile, the military can communicate on some HAM frequencies in both the HF and UHF bands. This provides additional communications ability between civilian command centers and the military.

Clallam County, working with ARES, has positioned HAM equipment in many of the county’s command centers as well as in various fire stations.

Most of these command centers are set up with both voice and digital capabilities. ARES members test equipment in many of the command centers every Tuesday at 9:30 AM. Additionally, ARES trains during county and local exercises and practices their own drills. ARES also runs a NET each Tuesday evening at 7:00 PM (except on the first Tuesday of the month when they meet at the court house) using the Striped Peak repeater to test member equipment and provide NET protocol exercise. After the Striped Peak NET, ARES members perform a simplex NET with their local command centers to test local equipment and local NET procedures. The Clallam County Amateur Radio Club (CCARC) has training for acquiring a HAM radio license as well as testing for it. These classes generally run twice a year. More information is available at: “http://www.olyham.net/”. Amateur Radio is both a hobby for many but also provides invaluable communications under varying conditions when other fixed systems can’t. The county is working with HAM and ARES on a radio backbone for support if normal communications are disrupted.
Emergency Satellite Internet
You Want It In An Emergency

By Mike Becker

What is PCICS? It is an Emergency Operations Center (Area Command Center, ACC) in a box with the ability to connect to the internet via satellite or directly by hard wiring to the internet. PCICS can be easily moved to where the emergency is, to provide compute resources for handling it.

The PCICS system can be thought of as two pieces: compute resources, and internet connectivity. The compute resources of our county (one located at the Sequim Police Department and the other at the County Court House) are comprised of a laptop running Microsoft OS, 8 tablets running Android, and a router.

Internet connectivity can be achieved in two ways, either hard wiring the router to the internet or connecting it through the satellite via the included satellite antenna. Hard wiring is as simple as plugging the router into an internet connection. As long as the internet provider does not prohibit adding a router to the network the system is up and running.

If a hard wired connection is not available the router can be plugged into the BGAN Satellite antenna (terminal) provided with the system. The satellite antenna must be pointed to the appropriate satellite and the internet activated, but once complete the system is connected to the internet. The connection is very slow (think 128K modem), expensive (~$3.50 per mega byte) and provisions will probably need to be made to control what is passed, but the connection provides full access to the internet.

The PCICS system is only half of the equation. It is the technology providing compute resources and internet connectivity. The real solution is how the compute resources are configured to become tools in an emergency. This is under development now and is a work in progress as lessons are learned from emergencies and then implemented to fine tune the system.

Current implementation of PCICS is to provide links and tools for resources during an emergency so they are a fingertip away.

Full implementation requires internet connection and a backup designed to provide offline resources if the internet is not available.

Full implementation provides links to various internet sites and to agencies that may be helpful in an emergency. These include links to Washington State EOC (WEB EOC), links to weather resources, tsunami resources, flood resources, county resources, and others we’ll turn to in an emergency. Additional ones are provided for equipment instruction manuals, as well as full access to ICS forms with instructions for filling them out.

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The subset solution provides tools and information on the computers that can be accessed without internet connections. Examples are aviation charts, access to Wiser (assist to emergency responders in hazardous materials), map utilities and other resources. The addition of marine charts and GIS maps for the county, as well as other pertinent documents, is currently being reviewed.

A key component in communicating is email, which is currently done locally through gmail. It’s advantage is that gmail will be available once connected to the internet no matter where the PCICS system is located. The disadvantage is that all emails must go through the internet connection even if the email is being routed within the EOC (ACC), costly if using the satellite and totally unavailable if no connection can be made to the internet. A solution is being reviewed that would provide email via a local (part of the PCICS system) computer, thus having email communications always available within the EOC (ACC). Depending on what is ultimately chosen, this email system may help to implement standard operating procedures within the EOC (ACC) as well as provide permanent archived information for the emergency.

Connections to the router are wireless with the ability to hard wire devices to it. All compute resources are pre-configured to automatically log in to the router so they are immediately available when powered on. Work is underway, and almost completed to have all devices automatically log in to either the county or Sequim router. Then in a joint operation all devices will automatically connect to the active one and be ready for immediate use. Additionally, agencies bringing wireless compute devices can be connected.

Graphical Instructions are being created to show how to set up and use the system. The intent is to make it simple enough so a person could be brought in off the street to use it, and quickly become a productive part of the emergency management team. Work is continuing to this goal. Currently, setup instructions are such that a person should be able to have the system up and running in 10 minutes if they’ve done it before and 20 minutes if not.

Should power not be available one additional item is needed, a battery. All components except the router are battery operated. The county and Sequim each have solar powered batteries and an inverter to provide (limited) 110 volt service. The router can be plugged into these batteries. Additionally, compute resources can be recharged so they are available through the emergency.

Satellite services are costly and can be purchased in different ways. Prepaid SIM cards are being used now. These provide approximately a megabyte of data for $3.50. However, when the units on the card are gone the satellite connection is terminated unless refilled prior to depletion and expiration. The units are good for only a year but they rollover if refilled prior to expiring. Another option is to purchase a service with a monthly charge that varies by provider but it’s in the range of $60 a month, with a cost of $5.00 per megabyte of data.

PCICS systems can be purchased as a unit or put together by buying components separately. A large cost savings can be achieved by putting it together piece by piece.

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Amateur Radio Operators
Keep Lines of Communication Open When Most Needed

By Bruce Reiter, ARES Emergency Coordinator

We have disaster response plans but key to their success are backup systems that were put in place. One in particular is vital, and is provided by local volunteers. Clallam County Amateur Radio Emergency Service (CCARES) is an organization of amateur radio operators who turn their passion into public service. They provide backup emergency radio operations to the County and other emergency response agencies on the Peninsula.
CCARES works with the Clallam County Amateur Radio Club to promote amateur radio through training, weekly radio nets, radio license classes and testing.
Operating under the auspices of the Sheriff’s Emergency Management Unit, CCARES members are listed as Sheriff’s Volunteers. Background checks are conducted prior to acceptance into the program.
These dedicated volunteers meet monthly at the Emergency Operations Center in Port Angeles, and at Forks City Hall. Meetings take place on the first Tuesday of each month at 7 pm. While important for training and preparedness purposes they also serve to bring like-minded amateur

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Links for Emergency Service Information

http://www.clallam.net/EmergencyManagement/resources.html

http://www.clallam.net/EmergencyManagement/index.html

http://www.clallam.net/EmergencyManagement/emcontact.html

http://www.clallam.net/EmergencyManagement/resources.html

http://www.clallam.net/Maps/evacuation.html

http://www.clallam.net/EmergencyManagement/volunteer.html

http://www.clallam.net/EmergencyManagement/rea.html

http://mil.wa.gov/other-links/web-eoc

http://www.wsdot.com/traffic/weather/default.aspx

http://wcatwc.arh.noaa.gov/

http://www.pnsn.org/

PCICS – Emergency Satellite Internet  Continued from page 9

Either way, PCICS can be placed on the county and Sequim systems with the assistance of the county. This technology brings compute resources to the site of an emergency, or operates compute resources when internet connectivity is lacking locally by utilizing satellite connections. In an emergency in which all communication is lost with no internet link to outside resources, PCICS provides that communication capability. If portions of the county are disconnected PCICS is an option for providing communications between PCICS systems in various parts of the county as well
Emergency Communications – 3 Rules of 3

By David Hull

Communication is the transfer of information in accurate, understandable format. Communicating is the foundation of effective response to an emergency. Without communications there will be no situational awareness. There will be no command or control of resources. There will be panic in the general public.

The First Rule:
Communications must provide information to three communities: (a) the field and responders for both intel gathering and command & control, (b) the Up chain (in our case WADEM and/or FEMA) for coordination, command & resupply and (c) the public, to provide information, avoid panic and civil unrest, and to coordinate public participation like distribution points & evacuations. In order to accomplish this under emergency situations, Rule Two must be met.

The Second Rule:
Communications to support Emergency Response must be (a) reliable (information must be transferred accurately every time), (b) survivable (equipment/infrastructure, plans & procedures must survive the Emergency) and (c) effective (the highest priority information must be communicated in real time to the correct recipients). For the second rule to be accomplished rule three must be considered.

The Third Rule:
There are typically three modes of modern information transfer. They are (a) Voice (dispatch, ARES/HAM etc), (b) Text (cell text messaging, emails etc.), and (c) Media (images, both static, like pictures and maps), and dynamic (videos e.g. Skype). These communications "modes" each have a place in emergency communications. Each one has advantages & limitations. It is imperative that the best "mode" be chosen for a particular communication requirement and situational capability.

In order to accomplish this, the communications management team (COML, COMT's, Message Center Supervisor, Doc Unit and scribes) must all understand the roles they play and have access to the information they need.

Each of these "rules" drives the choices a COML makes in selecting a set of resources (people and equipment) necessary to make a particular communication happen.

The rules create opportunities and set limitations on Emergency Communications. Balancing these opportunities and limitations by the COML allows critical communications to get through in the most effective manner.

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Our goal on the communications side is defined as:

**Interoperability**

**Interoperability** is the ability to communicate, as needed, on demand and as authorized at all levels of government – and across all Public Safety disciplines.

The need for communications interoperability is a significant public safety issue for citizens and emergency responders readily recognized by our local public safety radio buffs together.

In addition to standing ready to help as an important communications link in an emergency, you’ll find ARES members supporting community events such as the North Olympic Discovery Marathon and the Clallam County Fair. Their time and equipment help these events run smoothly. CCARES membership information can be found on their website: clallamares.org or by contacting ARES Emergency Coordinator Bruce Reiter at brewkatrit@aol.com. But the best way to learn more about the program is to attend a monthly meeting. You will be welcomed, and if your passion is amateur radio then you should consider joining our organization to proudly give back to the community by

**Rules – Continued from page 11**

They also permit the Incident Commander and the Operations Section Chief to operate in "real time" with accurate information. To be able to "balance the rule options" the COML must have good information on the parameters of these rules, both preplanned and situational status, in real time, for the current mission. Preplanned information includes things like inventories of equipment with capabilities and locations. It also includes the skill base required to operate this equipment as well as the locations of individuals set to run it all. Real time situation/status information includes damage assessments on infrastructure (equipment [i.e. repeater towers] and infrastructure, like bridges [access to equipment]), and personnel availability (sick, injured or otherwise [i.e. geographically isolated] unavailable). If this sounds complex, it is. It requires volumes of information, understanding of the intent of the communication (what information the user needs), system integration skills, prioritization skills, and above all leadership skills. Pity the poor COML!