Cascadia Rising 2016

ARRL – Final Report

ARRL Cascadia Rising 2016 After Action Report

Report on CR16 activities from ARRL Headquarters and programs

Introduction

This report covers after action reports for ARRL Headquarters and programs that played a part in the Cascadia Rising 2016 (CR16) national-level exercise. ARRL leadership in the Oregon, Western Washington, and Idaho sections, as well as National Traffic System™ leadership were instructed to provide after action reports to ARRL Headquarters for inclusion in a single, national-level ARRL after action report. Additionally, the final after action report includes an evaluation on the use of the Amateur Radio Service 60-meter channels during the exercise.

Outline

- The Cascadia Rising Scenario
- ARRL Headquarters After Action Report
- ARRL Western Washington Section After Action Report
- ARRL Oregon Section After Action Report
- ARRL Idaho After Action Report
- ARRL National Traffic System After Action Report
- Evaluation of the Use of 60 Meters During CR16

The Cascadia Rising Scenario

The scenario for the Cascadia Rising exercise was a 9.0 earthquake off the coast of central Oregon, which triggered a tsunami disaster along the entire Pacific Northwest coastline. The exercise started with a blackout of all normal, regular communication systems.

ARRL Headquarters Cascadia Rising 2016 After Action Report

ARRL Headquarters used CR16 as an opportunity to test the ARRL HQ Emergency Response Team (HQ ERT) plan. The ARRL HQ ERT is comprised of key staff that can provide additional assistance to the ARRL field organization during times of large-scale disaster when the needs are greater than what can be handled during normal business operations. The team consists of incident, financial, personnel, field organization, and media/public relations management. The plan also provides for ARRL station W1AW to be ready to assist on air as needed.

The ARRL HQ-ERT activated on June 7, 2016 from 1200 – 1600 ET for CR16, the same time frame as the planned communications component of the exercise. Information and injects from

field organization leaders in Oregon, Washington, and Idaho provided direction for ARRL HQ exercise participants.

Key events during the exercise period:

- Activation of the ARRL HQ ERT commenced when word was received from field organization leaders that the earthquake had occurred.
- HQ ERT members met to go over known facts of the event.
- Throughout the activation, the team simulated events that would typically occur in a large-scale disaster. This was based on previous experience with Hurricane Katrina (2005) and Hurricane Irene (2011).
- The simulation included responding to the needs of the field organization in the affected area, as well as handling routine duties and requests from the field organization that would occur during a regular business day.
- Three additional events that were added to the simulation were:
    - The loss of a staff member due to the earthquake
    - Loss of ARRL HQ internet and phone service
    - A simulated EF-5 tornado occurring in Oklahoma, as an unrelated, secondary event
- The team assessed the possibility of deploying staff and communications vehicles to the disaster area. Staff members did travel to the affected area during Hurricane Katrina, so this inject was based on real-world events.

What Worked

- Winlink was found to be extremely useful during the exercise. This allowed radio amateurs in the disaster area to send radio e-mail to ARRL HQ, which could be received normally. When the internet and phone outage at ARRL HQ was injected to the exercise, the transition to RF-only radio e-mail between ARRL HQ and the disaster area occurred quickly and seamlessly.
- During the simulated ARRL HQ internet and phone outage, the staff utilized 2-meter simplex to communicate. This activity met all regulatory compliance concerns. This method of communication was determined to be effective even when internet and phone worked.
- Regular in-person briefings were conducted in the conference room. This allowed all team members to get up to speed on a fluid situation and stay informed. The conference room was determined to be an ideal incident information center and work area.
- Injects provided to ARRL HQ by field organization members arrived on time and effectively crafted the script throughout the exercise period.

What Didn't Work

- There is a serious shortage of trained ARRL Public Information Officers and Public Information Coordinators. There is a need for more of both, as well as improved training for the positions.
- There is no in-house protocol for dealing with a missing staff member or death of a staff member, particularly in a disaster scenario. The team handled the inject well, but policy and guidance is needed.
- As team members went about their respective tasks, it became clear that there was a need for a central task and work log for the event. This will help prevent issues of miscommunication or repeated work.

Areas for Improvement/Future Actions

- The Ham Aid inventory needs to be assessed and equipment updated. This will be accomplished by Fall 2016.
- Guidance is needed for purchasing products and services related to response activities. The CFO's office will handle this.
- In a major event, a daily brief is prepared by the ARRL Emergency Preparedness Manager and distributed to the HQ ERT, section staff, and division leadership in the affected area. In the future, the entire Board and officers of ARRL will be added to the distribution list.
- There is a need for a recording system at W1AW that will allow the station manager to record on-air activities related to the event. The ARRL Media and PR Manager will handle this.
- A reassessment of pre-deployed Ham Aid inventory is needed. This is currently under way.
- External support for the Media and PR Manager is needed. An external backup allows ARRL messages related to the event to continue without interruption.
- The ARRL HQ ERT will make minor updates to the team's policy based on lessons learned from the exercise. One key update will be a phased activation process of the team and a dedicated e-mail address for events the team is activated for.

Western Washington Section ARRL Cascadia Rising 2016 After Action Report

Exercise Cascadia Rising 2016 was a joint Federal Emergency Management Agency (FEMA) and Washington State Emergency Management Division exercise based on a magnitude 9 earthquake that occurred in the Cascadia Subduction Zone, approximately 50 miles south-southwest of the City of Florence, Oregon. The Cascadia Subduction Zone is an approximately 700-mile-long segment of the Ring of Fire. The exercise took place during the week of June 6 through 10, 2016. The U.S. Department of Defense concurrently held several other exercises this week that supported Cascadia Rising 2016. The Canadian province of British Columbia, held their first province-wide exercise, Coastal Response, during the same time period. Their exercise activity took place at the City of Port Albernie, which is 121 miles from the provincial capital of Victoria.

The Amateur Radio Service (ARS) had some major roles in meeting the objectives set for the exercise. Amateur Radio operators not only provided communications continuity for several Emergency Management Agencies (EMA), they worked with the Washington State Patrol, Washington State Guard, Washington National Guard, and Federal Aviation Agency (FAA). They supported approximately 32 city, county, state, tribal, and federal agencies. As a part of Emergency Support Function 2 (ESF2), the ARS had some other tasking that was not accomplished due to perceived or actual prohibitions in 47 CFR Part 97 of the FCC rules. These tasks included providing gap filler services to the Emergency Advisory System, and providing communications interoperability with federal agencies licensed by the National Telecommunications and Information Administration (NTIA). These two issues are very important to the ARS stakeholders and need continued and concerted effort to find a resolution.

Accomplishments

- Skamania County participated on Thursday from 1000 – 1400 local time. During this time, we had Community Emergency Response Team (CERT) members calling in situation reports via Rapid Needs Assessment forms modeled after forms from a California CERT team. CERT members reported in to a Net Control Station (NCS) covering the central/western portions of the county and to a NCS on the eastern portion of the county. These NCSs then relayed the info to the Skamania County EOC. The EOC received a high volume of traffic, but they handled it extremely well and professionally.
- Working side-by-side with Idaho National Guard was a great experience for all involved.
- CERT members with ham licenses are very useful. We also used FRS/GMRS radios on a limited basis to transmit situation reports (SITREPS); this method would be very useful in a disaster.
- Once we worked out issues with forms and language on Day 1, all really went very well. The Northwest division of the FAA was convinced they need to add Amateur Radio back into their repertoire. The FAA canceled their Amateur Radio program just before 9/11.
- We were able to support all of our served agencies and clients effectively.

- Volunteers were able to provide communications support on location and during the planned participation period.
- Net Control and our served agencies were able to get most traffic to the Emergency Coordination Center (ECC) via Winlink (25 messages from Net Control), though not all directly.
- Communications protocols established between Whatcom Unified ECC, Whatcom Emergency Communications Group (WECG), and the other Auxiliary Communications Service (ACS) groups in the county generally worked well.
- We established cross-border communications with the Langley EOC in British Columbia.
- At-large operators were available with mobile HF and Winlink capabilities.
- Some new Amateur Radio operators checked in.
- The team divided to work on four radio assignments:
  - Establish a Resource Net for Renton Emergency Communications Services (RECS) members
  - Take incoming messages on established RECS simplex channels
  - Contact other EOC's
  - Contact State EOC
  - Contact King County EOC
  - Monitor 800 MHz
- The Amateur Radio operators expanded their activity to include supporting the call takers in the EOC
  - .

- Overall, our objective to communicate with external agencies via voice and Winlink was achieved. It was great to be able to participate in an exercise of this magnitude and get a feeling of what it would be like to have this many people trying to send and receive data. All of our operators felt the exercise was very beneficial.
- We believe that regardless of the outcome of the exercise, it was beneficial to us to have our executives and top management realize the importance of Amateur Radio. The attention this exercise put on the ARES capabilities and the benefit of having us participate was priceless.
- Having Amateur Radio as a functional part of the exercise was huge. We felt, unlike in some other exercises, that we were actually part of the team and not some auxiliary group that was being tolerated.
- Puget Sound Energy ARES responded with professionalism and the knowledge necessary to make this a successful exercise. Problems with radios, PC programs, etc., were solved and necessary adjustments were made on the fly. Our members showed the knowledge to get the job done.
- Our objectives in the exercise were met. We demonstrated the capabilities of our team.

What Went Wrong

- For this specific scenario, it turns out a radio amateur with a "Go Box" was more useful than the Joint Incident Site Communications Capability (JISCC). We are more mobile,

have better frequency coverage, and have better situational awareness. That said, the JISCC has capabilities to communicate with other government agencies that Amateur Radio doesn't have. This deployment caught the Idaho National Guard (IDNG) between major personnel changes, and it was great training for them. The exercise also gave them a basis on which to train and grow. They had issues with a loss of satellite communications, were unable to communicate with the aircraft, and had very poor HF reception due to a poor antenna. Our ARES member with a Go Box using a Chameleon sloper had much greater capability. The IDNG was impressed.

- Inter-agency jargon hampered communications. We as ICS-trained amateurs know the ICS "emergency language." Apparently the agency had their own "emergency language" as did the ICS who spoke fluent "military emergency language". This and forms were our biggest challenges.

- Due to Search and Rescue radio room Winlink, computer, and Wi-Fi issues, we needed to rely on backup laptop. The CR-2016 scenario didn't stress the communications system enough. There were no repeater failures, internet outages, or loss of power included in the scenario.

- Several members never got the AlertSense notifications.

- Protocols were not always followed (e.g. use of 146.540 simplex for emergency voice traffic). There were too many voice requests to send traffic that could have been sent by Winlink.

- When the exercise began, we quickly discovered that the Simulation Cell was not able to contact us on our simplex frequency that we had intended for incoming messages. The decision was made quickly to have them call on our primary repeater frequency that we planned to use for our Resource Net. Because our participating members were in the room, we didn't expect much traffic on that net.

- Puget Sound Energy's largest concern is the heavy reliance on Winlink. If Winlink is available, it obviously should be utilized as much as possible. However, we believe the availability will be severely limited in an event of this magnitude. Our concerns are:
  o Most if not all Radio Mail Server (RMS) stations are not located in hardened sites. Many, if not all, would be out of service due to damage or lack of power, especially for prolonged time, as would be in a disaster like this. We realize that, for the sake of the exercise, the assumptions made concerning power supply were not realistic. It should be stressed that conclusions made in this regard should be viewed realistically, in order not to skew expectations in a real event, and not to get a false sense of security.
  o Puget Sound Energy experienced long delays in being able to connect to RMS stations in several of our locations due to overloading, even with all of them being in service.

What Needs to be Added

- The capability to communicate with the general public (beyond the Emergency Broadcast System) when all other communications are down is an issue. During a post-exercise discussion, we came up with the idea to send an ARES member with a Go Box to the local AM/FM radio station to receive announcements from the Joint Incident Command (JIC) via the EOC to be handed to the commercial radio broadcaster for transmission.

Announcement could include things like shelter locations, food distribution sites, first aid locations, etc. We are going to meet with a local broadcaster to discuss this in the coming weeks.

- Due to our county's topography, we have communities where there will be no communication available if repeaters are down. We need to figure out a way of establishing a method of communicating with these communities via a portable repeater, locating an ARES member with a Go Box as a relay station, etc.
- There is a need to expand the digital capability to transmit traffic between the NCS's and the EOC. In the coming months, we will be experimenting with both *RMS Express P2P* and *Fldigi* Narrow Band Emergency Messaging Software (NBEMS) to find a way to do this.
- Standardization on language and forms needs to be improved.
- There was little practice utilizing relaying messages. This age-old technique will be invaluable during this type of event. It is our experience that most operators have little to no experience with relaying information to emergency response organizations, unless they participate in NTS. Reliance on our repeaters can lull us into a false sense of security.
- Maybe this was intentional, but the length of the exercise made it difficult for most agencies to participate fully. Dedicating five days to an exercise is not feasible for most people. This created a fragmented view of what was actually being tested, and caused some confusion as to who was doing what when, even with the charts and information sent out. I would suggest having the same segments of the participants working on the same day. Amateur Radio participants should, in my opinion, all be participating at the same time. I would also suggest having the EOC being staffed the same day as the Amateur Radio operators, in order to give us the opportunity to work together.

Conclusions and Recommendations

- In an effort to take advantage of preformatted messages, Winlink should be the standard messaging system. However, some jurisdictions have been using *Fldigi* and others across the state may not have data-handling capabilities. In order to lessen the potential for confusion, Winlink should be adopted as the standard for sharing messages intra- and interstate.
- There is an identified need to have a uniform and published directory of Winlink addresses. One of the recommendations has been to use a method to the National Crime Information Center's addresses for criminal justice agencies. For example, WAWSP8000 is Washington, Washington State Patrol in District 8. WA0500000 is Washington county 05, Clallam County, and the zeros are for the Sheriff's Office.
- Some jurisdictions across the state may not have an HF station or the ability to handle data messaging. During a catastrophic emergency, a situation could arise where a radio station has lost their ability to handle data traffic. ARES/RACES/ACS need to retain the ability to efficiently and effectively handle voice messaging traffic. This skill must be trained and exercised alongside data message handling.
- From comments received from the ARES/RACES/ACS units, all of our equipment needs to be exercised on a regular basis to avoid an unexpected outage during a real-world event.

- The Amateur Radio Service needs to work with their State Emergency Communications Committee to explore and implement ways for ARES/RACES/ACS to support the Emergency Advisory System in the state.
- The Washington National Guard has become very proactive in seeking ways for communications interoperability. In conjunction with the Washington State Guard, the National Guard in Washington is providing Amateur Radio licensing classes to their soldiers. There may be a need for ARES/RACES/ACS volunteers to shadow a National Guard unit to teach them how to provide this communications interoperability.
- Not discussed in the after action reports received is communications interoperability between local, state, and tribal authorities with federal government, NTIA-licensed agencies. During Cascadia Rising 2016, the 60-meter band was identified as the place for interoperability. Even though the ARES/RACES/ACS units had been told they could work the federal government stations when the federal station called them, there is still a severe reluctance to do so. There needs to be clearly-worded authorization spelled out in the FCC's 47 CFR Part 97 rules.
- Also concerning 60 meters, the number of channels or frequencies are currently inadequate to support local, state, and tribal jurisdictions, along with federal agencies. The ARS needs additional 60-meter frequencies to be able to support their stakeholders.
- The emergency management world and federal agencies, especially the armed forces, are very reliant on acronyms and abbreviations. In order to be consistent with the principles of the Incident Command System, plain English should be used. With that said, acronyms and abbreviations are a way of life and hams either need to learn the terms or not be concerned with what they mean. With more stakeholder involvement, there should be training on message handling on a regular basis to address this concern.
- An observation by the ARRL Section Manager (SM) during the exercise is that the NTS message format is still in use in many places. We need to transition to the ICS 213 to streamline the message-handling process across all stakeholders.

Oregon Section ARRL Cascadia Rising 2016 After Action Report

Introduction

Cascadia Rising was a four-day FEMA Functional Exercise designed to test emergency communications and interoperability capabilities of multiple agencies as they prepare for an emergency crisis response on a local, regional, and national scale. Cascadia Rising 2016 (CR16) was designed to stress test FEMA National Radio System (FNARS), Public Safety Agency Radio (PSA), Civil Air Patrol (CAP), the ShAred RESources (SHARES) HF radio program, the use of the 60-meter FEMA interoperability channels, the Amateur Radio Winlink System, and Amateur Radio HF and VHF/UHF voice communications. Communications on all of these systems were ongoing throughout CR16, moving traffic between FEMA Region X, several Oregon tribes, County EOCs, federal agencies, the Red Cross, and other exercise partners.

Oregon Section ARES/RACES Preparation

Oregon ARES/RACES leadership has been attending FEMA briefings and receiving updates on CR16 for the past two years. In recognition of the importance of CR16 to the State of Oregon, ARES units have been training under realistic simulated emergency test (SET) conditions. Two SETs are organized each year involving the entire state, with units from 25 – 30 counties operating on emergency power in the field on HF, Winlink, and VHF channels. Each SET has involved around 300 ARES members operating from hospitals, CERT teams, public utilities, city and county EOCs, as well as the Oregon Office of Emergency Management (Oregon OEM). In the end, the actual CR16 exercise was less demanding than our training protocols. We felt confident that we could handle about anything asked of us and performed well.

Cascadia Rising 2016 Operations

Tuesday, June 7

CR16 had been scripted to play this opening morning as a "Radio Only" event, so ARES units statewide were center stage. One hour after the "earthquake" at 0800 local time, more than 45 ARES/RACES stations around the state checked in to the State ARES 80-meter CR16 net. Thirteen County EOC stations were immediately activated by their Emergency Managers for the first day of the exercise. During those first four hours, 209 Winlink exercise messages (Unit Activations, County Declarations of Emergency, Situation Reports, Requests for Assistance, and ICS-213 General Message) were received at Oregon OEM. Operators reported Winlink connections to gateways in California, Utah, Nevada, and Canada, some requiring 25 – 30 minutes of download time via Pactor 3. Some very long, detailed messages involving HAZMAT material spills were sent via Winlink.

Voice messages were also being passed from FEMA Region X in Seattle on the 60-meter net, while FNARS was used for FEMA keyboard chat. On SHARES, OOEM had contacts with Portland FBI, Idaho Department of Health Services, Oregon Health Services, the Washington State EOC at Camp Murray, and others. Most of the 80-meter ARES net activity was County EOC check-ins to establish communication links. VHF/UHF voice communications with Oregon Deptartment of Transportation was also established.

The afternoon was also very active. Everything was logged on ICS-309 forms. All traffic was tagged with the operator's name, time received, and radio mode used, then copied. The originals were taken from the radio room to the Oregon OEM ECC liaison, who then delivered it to the responsible responder. For the six operators at OOEM, it was a very busy day.

At the County level, ARES units were exchanging Emergency Manager inject traffic via Winlink peer to peer and Post Office Box systems, as well as VHF simplex and local repeaters (some counties allowed use of emergency power-equipped repeaters). City EOCs, hospitals, fire departments, CERT teams and others were active. In the Portland Metro Area, a typical EOCs traffic load was in the order of 150 messages sent/received. Some 22 County Emergency Managers and at least five City Emergency Managers were involved. We have heard nothing but great performance reports from our Emergency Managers.

At the National level, Oregon ARRL Liaison Station KX7YT began transmitting Winlink traffic by HF Winmor to ARRL Headquarters station W1AW in Connecticut, using gateways in Nevada and California. The first messages were the exercise NOAA National Tsunami Warning Station earthquake notification and tsunami warnings. Over the course of the morning, 17 messages were sent/received by W1AW. ARRL HQ was contacted on 20-meter SSB and check-ins with the ARRL 20-meter Cascadia Net were made.

Four National Traffic System™ (NTS) stations in Oregon were mailed instructions and message injects in early June. Each piece of traffic had a 15-word message — each "word" consisting of five random letters — to be sent via digital modes (Winlink HF Pactor), CW, or SSB to FEMA Region 3 in Philadelphia via NTS. Three messages were to be sent by each operator on Wednesday, and a single message was sent on Thursday, for a total of 48 messages. Each was sent at a specific local time to test delivery speed to Philadelphia. None of the NTS stations were integrated into ARES units operation during CR16.

Wednesday through Friday, June 8 – 10

The exercise plan for these three days stated internet and other communications were functional at Oregon OEM, so the Amateur Radio operators had easier duty during this period. Several Counties did, however, choose to activate their ARES units in radio-only modes on these days, so the ARES operators were kept busy. FEMA arrived in force at OOEM on Wednesday, and as their communications vans were activated, ARES operators in the OOEM radio room began to experience RF interference on their SHARES/FNARS radios. This was scripted. This interference underscored the need for frequency coordination among shareholders. About 100 Winlink messages were received at Oregon OEM from participating agencies that chose to be active on Wednesday. Again, at 0800 local time on Thursday morning, unit activity Winlink traffic started coming into Oregon OEM, and County units began checking into the 80-meter net. Oregon ARES operators took traffic on 60 meters, SHARES and FNARS, but the majority of the activity was again on HF Winlink. By the end of the day on Thursday, 52 messages were received and passed to the ECC coordinator. About five messages from the ECC were transmitted from Oregon OEM to participants. As Cascadia Rising wound down on Friday, activity dropped off. CR16 ended at 4 PM Friday. OOEM Director Andrew Phelps personally thanked all of the Amateur Radio operators for their service, noting that Oregon ARES is "vital to our success."

ARES Unit Participation

At the time of this writing, we know that 22 county units and the OOEM Amateur Radio unit formally participated in CR16. Several other County Units monitored the HF net, served as relay station, or organized their own local event. Based on records from previous SETs of similar scale, we would estimate about 300 volunteers participated. Photos of Cascadia Rising activities are available.

What Worked

- The two years of training preparing for CR16 was time well spent. The four statewide SETs we held have driven the member training and County EOC station readiness. This was critical to our success in CR16.
- Oregon ARES is a heavy user of the Winlink System on VHF and HF frequencies. Without Winlink and our training in the use of RMS Express (now Winlink Express), we would have been unable to process the huge volumes of traffic required. We are hopeful the FCC will approve the use of Pactor 4 soon; we feel it would have been extremely beneficial.
- County units across the state have developed relationships with their local served agencies that greatly improve our response to a disaster. These include hospitals, CERT teams, utilities, city EOCs, Public Safety, and many governmental agencies. We now find that federal agencies are requesting ARES assistance with their Amateur Radio programs.

What Did Not Work

- Oregon ARES/RACES has far too few active, trained operators. This is a system-wide problem. Of the 17,500 licensed Amateurs in Oregon, only 2 – 3% are actively involved in ARES. Should a real disaster occur, ARES would be stretched beyond its capacity. This is as much a problem for all of the Emergency Managers we serve as it is for Oregon ARES/RACES. Joint action from all stakeholders is needed to address this issue. Once recruited, actually training the numbers of people needed is another problem to address.
- More HF NCS stations must be recruited and on the air during exercises. As noise levels are very high at OOEM, the ARU operators (especially on 80 meters) have a very difficult time hearing others.
- Equipment: While HF Pactor 3 works well, we would benefit from Pactor 4 capabilities to deal with the volume of traffic coming into our County and State EOCs. Further, the existing Oregon ARES Digital Network was funded in 2008 and is now 8 years old. At some point, funding to begin replacing the existing equipment will be needed.

Idaho Section ARRL Cascadia Rising 2016 After Action Report

Report includes the following areas:

Bonner County
Kootenai County
Shoeshone County
Boise EOC
Idaho EOC

With the exception of Bonner County, there were no reports of how many people participated nor for how long. No message counts were provided, and no information on the number of served agencies were included. There were, however, some good things and some areas to improve.

What Worked

- Members of Idaho ARES cooperated, worked well together, and generally seemed to have a good time.

- Equipment was mostly deployed and operational in a timely manner.

- Most units were equipped with digital HF.

- Where used, WebEOC was beneficial.

- ICS 213 message forms were used, at least some of the time.

Areas for Improvement

More frequency coordination is needed. There is confusion about the standard operating frequency of 7229 kHz. Although this seems like a minor issue, in a real emergency we may not have had a backup communications system to evaluate the coordination issue.

To exacerbate the frequency issues, band conditions were bad to worse, making it difficult to make contacts.

We recommend publishing the standard frequencies used and developing a backup plan for when QRM or other noises make the standard frequencies unusable.

WebEOC was not available to all participants/units. Not every operator needs to have direct access, but being near someone who does have access would be helpful with situational awareness.

One suggestion was to use WinLink2000 and the internet for traffic handling on digital. This is fine, assuming the internet is operational somewhere outside the exercise area, and that units have access to some form of satellite link to it (assuming local internet is down).

Several locations wished they had more stations operational and more operators (at least two per station). My personal experience operating HF radio for Latah County is that we should ideally have two voice HF and two digital HF stations, so we can keep administrive communications separate from traffic handling. Due to antenna restrictions, we'd have to separate the stations to minimize interference.

We recommend including a "shelter-in-place" activity during the annual SET to provide each operational unit with multiple HF stations with enough separation to avoid interference. HF stations could be linked with VHF for coordination.

Publish expectations of an after action report (AAR) from each operational unit before an exercise takes place.

ARRL National Traffic System Cascadia Rising 2016 After Action Report

NTS Leadership indicated they would not be submitting an after action report.

It should be noted that the ARRL National Traffic System (NTS) participated in the exercise without coordination with other ARRL programs in the Pacific Northwest or with ARRL Headquarters. NTS leadership chose to participate in the exercise independently and without coordination.

Evaluation of the Use of 60 Meters During CR16

- Amateur Radio operators were (and still are) reluctant to use 60 meters to work federal stations; there was very little Amateur Radio use of the band.

- Many of the EOCs in the State of Washington are using older HF transceivers such as the ICOM IC-706 which is not 60-meter capable without modification. Some of the EC/ROs voiced reluctance to modify their equipment to be able to work 60 meters.

- Some of the EC/ROs reported not having antennas designed for 60 meters and have limited space for a resonant antenna on that band.

- 60 meters was a good alternative for short distance HF work, 300 – 500 miles.

- All five of the 60 meter channels were set aside for communications to/from federal entities. Intra-state/local jurisdiction use would not have been possible. It is obvious that five 60 meter channels are insufficient to meet the needs of state/local governments and NGOs that need to communicate with each other during a large disaster.

- During the planning stages, we discussed transmitter output power and during Cascadia Rising it was difficult to hear stations on the fringes of the exercise area. As an example, Idaho Bureau of Homeland Security (BHS), Boise, and Oregon Office of Emergency Management, Salem, had difficulty communicating with each other on 60 meters. It was interesting to notethat a station about the same distance at Port Alberni, British Columbia, Canada working Exercise Coast Response was heard much better. If we were required to reduce our transmitter power, I am confident we could not have communicated across the geography and terrain that will berequired during a disaster of the Cascadia Rising 2016 proportions.

Recommendations

- The ARS in the U.S. needs additional 60 meter frequencies sufficient to provide frequency resources for intra-state, short-distance HF communications aside from interoperability with federal agencies. It is noted that a non-channelized allocation was authorized by World Radio Conference 2015, and the U.S. is in the early stages of implementing that authorization.

- The transmitter output needs to remain as it is on the present 60-meter channels with the same restriction on antennas.

- There needs to be an incentive program to encourage EMAs to update their radio equipment, increasing 60-meter effectiveness among all stakeholders.

- The FCC needs to be encouraged to update 47 CFR Part 97 of their rules to allow ARS Amateur Radio stations to communicate with federal stations.

ARRL Cascadia Rising 2016 After Action Report Submitted by:

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July 2016

FEMA Region X

Emergency Communications Coordination Working Group Meeting

Boise, Idaho – July 19, 2016

Cascadia Rising 2016 Debrief

On July 19, 2016, I had the privilege of attending the FEMA Region 10 Emergency Communications Coordination Working Group meeting in Boise, Idaho, at the Office of Emergency Management.

The main topic of discussion was Cascadia Rising 2016. The Emergency Support Function 2 (ESF2) coordinator for Idaho, Oregon and Washington made reports to the group.

Oregon: Terry Pietras, W7JOC, reported that at the start of the exercise (STARTEX), he and the Amateur Radio Emergency Services (ARES) team hid out in the Continuity of Operations (COOP) trailer and waited for Oregon State Emergency Operations Center (EOC) staff to come and find them. This was a lesson that ARES doesn't just appear immediately following a disaster. It took the EOC staff 20 minutes to find them. Pietras also talked about their Oregon Tribal Network and how effective it was during the exercise. They used colored message forms and colored routing slips to efficiently and effectively route traffic in the state EOC. Terry was very complimentary of the ARES volunteers that support the state and local governments.

Washington: Roy Benavente, KE7UOG, deferred to Monte Simpson, AF7PQ, Washington, State RACES Officer to report on Amateur Radio Service involvement. Simpson cited four recommendations he made to the Federal Communications Commission (FCC) and the National Telecommunications and Information Administration (NTIA) and the results of those requests:

1) Request for HF privileges for Technician class licensees. Simpson provided a specific list of names and call signs for approval, and the grant for temporary General class privileges were granted.

2) Request for hams in Whatcom County to work outside of US Amateur Radio frequency allocations, so they could communicate more easily with Canadian amateurs, who have different frequency allocations. The Canadians use the lower portion of the Amateur Radio bands for voice communications; U.S. licensees, that falls within the CW/data portion of the band. A list of specific hams by name and call sign were provided, along with what frequencies they would need to use. This request was based on the fact that Whatcom County will be isolated from the rest of Washington state and the U.S. during a catastrophic event, such as Cascadia Rising. This request was approved.

3) Request to provide assistance to the Emergency Alert System (EAS) by backfilling for a failed EAS. This was requested because so many hams are reluctant to do anything involving the media. This request was tentatively approved; however, no final answer was received.

4) Request for Amateur Radio Service licensees to call and work federal, NTIA-licensed agencies. Prior to the exercise, we received guidance that ARS stations could work federal stations if they were called by the federal station. Amateur Radio Service was prohibited from calling and working a federal station. No response to this request was received. I was told by FEMA that a response was indeed received, and it was posted on the ARRL website. Both the FCC and NTIA granted the request for the period of Cascadia Rising. I have asked for a copy or URL for that article, but have not received a response yet. I was told that the FCC felt these issues were minor and wanted to know why they were of concern. During planning and execution of the Cascadia Rising exercise, there was concern regarding both assisting the EAS and use of 60 meters to talk to federal stations. Most of the pushback came from leadership of the Amateur Radio Emergency Services (ARES) and Radio Amateur Civil Emergency Service (RACES) leadership; documentation showing that the requests made were legitimate is required. The state ESF2 reps have been holding monthly phone meetings to discuss communications interoperability, and there is strong interest in Amateur Radio to provide that interoperability.

Simpson suggested ARES/RACES should have similar interstate drills and exercises. The cellular providers, primarily Verizon and Sprint, expressed a desire to assist and requested they be included in future interoperability discussions.

Idaho: Bob Wells, KF7TWO, announced that the state Emergency Management Association is now called Office of Emergency Management (OEM). Amateur Radio operators handled all of Idaho's participation in Cascadia Rising. The staff of OEM appreciates the contribution hams made and the fact they took time off from work to help OEM.

Idaho pointed out inconsistencies in a standard time format. Some jurisdictions use local time, and others use Coordinated Universal Time (UTC). There needs to be consistency of a time format across all jurisdictions, especially as a message moves to/through several time zones.

Wells mentioned that sharing information for situational awareness is important to keep in touch with many sources, such as railroads. As an example, he mentioned that during a train accident in Oregon, all trains on that line, if stopped, would have caused considerable backup through Oregon and into Idaho. The National Weather Service (NWS) in the Midwest has PSK31 weekly nets.

All of the states mentioned that interoperability with our tribal partners is very important. Washington's Roy Benavente, KE7UOG, brought up the communications drill to occur during the National Tribal Emergency Management Council conference in September.

At the end of the discussion, the Idaho ARES representative handed out examples of the forms they use in the radio room at Idaho OEM. Inconsistency between the various forms among states and agencies was discussed, as well as the lack of functionality of the ICS213. The representative expressed the need for common forms to be used throughout the system, to facilitate interoperability.

At the end of the meeting, ARRL Northwestern Division Director Jim Pace, K7CEX, was invited to speak about ARRL. I took the time to mention that ARRL is in the process of bringing ARES and the National Traffic System™ (NTS) together. NTS has a very important part in disasters, especially during the recovery phase. It is NTS that will be helping the people of our jurisdictions to keep in touch with family and relay related message traffic, such as Red Cross Disaster Welfare Inquiries. The NTS helps us meet the expectations of being issued a FCC license that are at the public's interest, convenience, and necessity.

There are three meeting takeaways for the Amateur Radio Service:

1) Uniform time reference in messages

2) Uniform message formats

3) FEMA Region 10/Pacific Northwest Division interoperability drills and exercises

Perhaps our Section Emergency Coordinators (SECs) can work on these issues together.

Respectfully submitted,

Monte, AF7PQ

ARRL Section Manager

Western Washington