



Colorado ARES/RACES
Disaster Response Team (DRT)



After Action Report

***State EOC
Communication Support Exercise***

- Date of activity: Wednesday, May 10, 2006
Duration of activity: 08:00 – 12:30
Description of activity: Multi-mode communication exercise between State EOC and DRT Base Camp in Pueblo, CO. Exercise was held concurrently with, but independent from, the Chemical Storage Emergency Preparedness Plan (CSEPP) exercise in Pueblo.
- EMCOMM structure: RACES
Amateur radio groups: Colorado RACES
State EOC Communication Support Group
CO ARES/RACES Disaster Response Team
- Served agency: Colorado Division of Emergency Management/State EOC
Served agency role: Exercise direction & control; generate simulated exercise message traffic
Amateurs participating: DRT – 14 operators total
- 11 deployed operators: KØHBZ WA4HND N7LV KØTER KCØMIR KØQED WØPAF KCØDTQ KCØFGJ KCØRBU KBØYCI
 - 3 home-base support operators: W5VSI WAØKAQ K4ARM
- Amateur service hours: DRT Hours: 182.7
Goals of activity:
- Establish a DRT Base Camp, operating on emergency power in field conditions, capable of communicating in several modes, including both phone & digital.
 - Test ability to communicate between SEOC in Centennial and DRT Base in Pueblo using various modes: VHF & UHF FM phone, HF SSB, VHF Packet, HF Pactor, VHF Packet <> HF Pactor gateway, HF Pactor III <> Winlink 2000 E-mail interface.
 - Test ability to pass simulated emergency messages over a variety of phone and digital modes.
- Goals accomplished? Yes to all
What went well?
- Communication successful and message traffic delivered on all modes tested
 - Communication challenges, when identified, were overcome through co-ordination on phone/admin frequency.
 - 2 portable HF stations were set up in relatively close proximity with inverted-V antenna wire configurations 90° away from each other. No noticeable cross-band interference noted.
 - DRT field-based operations were conducted entirely on emergency power (generator & solar).
 - DRT Home-Based Support (HBS) stations were extremely effective in helping facilitate operations:
 - W5VSI, Littleton: Provided VHF <> HF digital gateway, helped with digital logistics & training.
 - WAØKAQ, Pueblo West: Helped with planning, deployment logistics, talk-in & mapping.
 - K4ARM, Black Forest: Operational, messaging and general net support.
- Improvement Needed:
- Use of ICS-213 General Message Form – need more detailed “To”, “From”, “Position”, “Signature” and “Reply Signature” information. Be specific: Who is the message to be delivered to (either specific name or function)? Who specifically provided the reply information? etc.
 - Digital message delivery was delayed by having to hand-transcribe messages to ICS-213 form. Portable printers need to be set up immediately as a part of overall

station setup.

- Compose messages to be clear, complete & concise – and not ramble – “Just the facts, Ma’am!”
 - DRT Winlink 2000 operator had difficulty getting E-mail messages through to E-mail address provided for SEOC (possible firewall issues). Workaround was successful, but some messages were delayed in process.
 - The SEOC packet station did not have a mailbox and that made leaving SEOC packet messages a problem. An acceptable workaround was established by leaving SEOC messages on the W5VSI gateway station mailbox then notifying SEOC via phone net they needed to pick up the message. The fundamental SEOC mailbox issue still needs to be resolved.
- Lessons learned:
- Mobile units utilizing remote V/UHF repeaters may be shadowed from coverage by buildings in congested downtown areas. Move, as necessary, to find best possible coverage location.
 - Two operators deployed to agency, one must remain with vehicle and stay in contact with net at all times, other should deliver messages to agency. Operators should utilize HTs on simplex to maintain communication and relay messages & replies between each other.
 - If only one operator deployed: Use mobile crossband (if available) so operator can deliver messages and stay in contact with primary net frequency using HT from inside agency.
 - Digital operators need to pre-type/compose messages and save to file before connecting. Composing messages while connected ties up mailboxes, digis & nodes unnecessarily and can block other traffic that may need to move on the frequency.
 - When a digital station is running a tactical callsign (i.e., “DRT” or “SEOC”) a message must be sent as follows “S DRT” or “S SEOC” to activate the mailbox light. If not, the mailbox light isn’t activated, and the receiving operator may miss a message by not knowing that a message has been deposited in the mailbox.
 - Portable printers are essential to efficient message output & delivery (both digital & phone messages). They could also be critical to quickly print maps from mapping software when deploying operators in unfamiliar territory.
 - The Colorado Connection linked repeater system was tested, and while DRT Base was able to copy full-quieting, full-scale, we were unable to get back into the system. Use of the Connection from Pueblo has been marginal for some time.
 - The RF side of Winlink 2000 is not a constantly connected state – it is more like old “dial-up” telephone-based E-mail service. As a result, the agency sending an E-mail should advise the remote WL2K operator via the phone/admin net that a message(s) has been sent, so the operator can connect to a PMBO and retrieve the message(s). A common practice is for the WL2K radio operator to establish a connection schedule (every 15, 30, 60, 90 or 120 minutes) depending upon urgency of the incident message requirements and volume of traffic.
- Recommendations:
- Locate KØQED’s portable PMBO unit farther away from base packet operations to reduce de-sensing between stations.
 - Per State RO Al Acker (WA4HND), DRT should consider acquiring appropriate type-accepted commercial radios & necessary permissions to facilitate direct communication between DRT base operation (at the very least) and appropriate public safety agencies. (NOTE: many RACES units are already asked/expected to do this – it is a practice more common to RACES operations than ARES).
 - Have computer with mapping software and portable printer set up and ready to help facilitate operator deployments when requested.
 - Use headsets on multiple stations operating in close proximity at DRT Base to reduce AF interference (**see general comments below).
- General comments:
- **In an actual incident, headsets would be utilized on all co-located DRT stations. In this exercise, however, radios were left on speaker for training purposes so DRT member observers could hear, watch, log & monitor both sides of exercise transmissions.
 - In this exercise the exact same message traffic was often passed over several

different modes. This resulted in some very lengthy and text-intensive traffic being passed over the phone frequencies. In reality, phone modes should be used for shorter tactical and operational messages (or emergency/priority traffic). Longer, text-intensive logistics, H&W messages, etc., should be relegated entirely to digital modes.

- Since this was a RACES-only exercise, there was no ARES/D-16 involvement. DRT was asked to send an operator(s) to the Pueblo EOC to receive/deliver traffic. There was (and we knew there was) a D-16 operator assigned at that facility supporting the Pueblo CSEPP Exercise. It "might" have been beneficial to make contact and test ability to pass exercise traffic through this channel as a test of potential RACES/ARES interaction.
- This was the very first exercise for the newly-formed State EOC Communication Support Group. It took place before they even had an opportunity to conduct their first formal training session. DRT members look forward to opportunities to work with the SEOC CSG in future exercises.

Additional training: • DRT has a very strong digital emphasis. Its Digital Development Group (DDG) has invested a lot of time & effort to develop effective digital techniques, procedures, protocols & software that have been extensively tested in both exercises and real-world incidents. Recommend cross-training with SEOC group to share and co-train using these techniques.

Future exercise ideas: Joint SEOC/DRT exercises should be conducted on a regular basis (recommend 2-4 times annually), however, with fuel costs near \$3/gallon, costs of DRT deployment for exercise purposes must be given due consideration {estimated overall cost for fuel & incidental expenses borne by DRT members for this exercise was @\$600}.

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