



After Action Report

Colorado Department of Public Health & Environment SE Region Mass Clinic Exercise

ARESCO Districts 19, 16, 14, DRT/Ø

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- Date of activity: Saturday, 16 October 2004
- Duration of activity: 0630 – 1700
- 0630 – 0730 Setup
 - 0730 – 0800 Communication Testing
 - 0800 – 1500 Exercise
 - 1500 – 1700 Hotwash/Debrief
- Description of activity: This exercise tested the ability of health departments in nine SE Colorado counties to establish emergency immunization clinics to quickly immunize as many residents as possible in the event of a deadly viral pandemic. The exercise plan was to provide free flu shots (real vaccinations) to as many residents as possible in these counties, however, the unforeseen flu vaccine shortage forced the reduction of immunizations to only those in high risk categories (as defined by the CDC). ARES® provided communications from the Control Cell (EOC) to clinics in each of nine counties. Traffic included controller injects, responses, inquiries, exercise coordination and general exercise message traffic. A remote NCS site was utilized. Amateur radio was essential to this exercise as there was only one available phone line at the EOC in the Otero County Courthouse where the Control Cell was located.
- Locations:
- Control Cell: Otero County Courthouse, La Junta
 - Net Control Group: El Paso County, Black Forest
 - Clinics
 - Baca County, Springfield
 - Bent County, Las Animas
 - Cheyenne County, Cheyenne Wells
 - Crowley County, Ordway
 - Huerfano County, Walsenburg
 - Kiowa County, Eads
 - Las Animas County, Trinidad
 - Otero County, La Junta
 - Prowers County, Lamar
- Amateur radio groups: ARESCO Districts: 19, 16, 14 & DRT/Ø
- Served agency: Colorado Dept. of Public Health & Environment, SE Region
- Served agency role: Design, plan and execute the SE Region CDPH&E EXPLAN and EVALPLAN
- Amateurs participating: 37 operators representing eight ARES® Districts
- Mission Coordinator: Bill James, KCØFGJ (EC D-19)
- Assistant MC: Wes Wilson, KØHBZ (EC, DRT/D-Ø)
- D-19: KCØFGJ KCØRIZ NØLJQ NØQKE KCØRWK KCØITF KCØNOR KCØRBU WØKEV
 - D-16: KJØT
 - D-14: KCØMQK KCØPBR KCØPAZ KCØLNM
 - DRT/D-Ø: KØHBZ KØIKN KØQED KØTER KØYY K4ARM KAØPII KAØWUC KBØLJW KBØYCI KCØMIR KCØNRZ KCØQPS KCØQQO KD6FLM KIØKY N7LV NØMIK NØTQ NØXIA W5MJC WAØKAQ WBØITG
- Amateur service hours: 862 Total
- Planning, testing, preparation: 320

	<ul style="list-style-type: none"> • Operator Hours: 368.5 • Travel: 173.5 • <i>NOTE: Due to long travel distances, the majority of DRT members deployed Friday afternoon and were overnight at their assigned destinations. These hours were NOT included in the amateur service hours above.</i>
Frequencies:	<ul style="list-style-type: none"> • PPFMA 448.450- and VHF links: 449.500- (Lamar) & 145.355- (La Veta) • AVARC 146.700- repeater • KØIKN 147.375+ Repeater & 145.010 Packet Node, Haswell (permanently installed specifically for this exercise) • KØHBZ Portable Repeater & Packet Node 146.835- / 145.010 • Packet: 145.010 • HF Digital (Pactor): 3.615 MHz & 7.065 MHz Mark
Goals of activity:	<ul style="list-style-type: none"> • Provide Control Cell communications between the SE Region Manager/Exercise Director and Senior Controller at the Control Cell with controllers/evaluators at nine mass clinic sites. <ul style="list-style-type: none"> ○ Handle controller/evaluator traffic between clinics. ○ Handle tactical and logistical traffic or inquiries as requested. ○ Handle exercise message traffic as requested. • Explore and test communication capabilities (including digital) in remote areas of SE Colorado. <ul style="list-style-type: none"> ○ Test ability of a single-frequency packet network to handle multiple messages from multiple locations using a variety of different paths. ○ Test ability of ARES® operators to explore and determine best packet paths between remote locations. ○ Test ability to utilize multiple FM repeater frequencies simultaneously with VHF packet and HF digital modes. ○ Evaluate viability of deploying and utilizing HF Digital stations in remote portable operations (DRT-specific goal). • Test operator emergency preparedness for portable inside-agency operations utilizing external antennas at remote locations (DRT-specific goal). • Evaluate ability of operator “teams” from various districts to share equipment and work together to achieve a common communication goal. • Provide an inter-district training opportunity for members of ARESCO Districts 19, 16, 14 & DRT/Ø.
Goals accomplished?	Yes to all.
What went well?	<ul style="list-style-type: none"> • The exercise as a whole went far better than expected/anticipated. • Members of eight ARESCO districts came together and worked seamlessly as a unified team during this exercise. • The real “shining star” was the flawless performance of HF Pactor, deployed at the Control Cell in La Junta and at the Cheyenne Wells (Cheyenne County) & Springfield (Baca County) Clinics. • VHF packet was deployed and utilized at all 11 locations (Control Cell, nine clinics & NCS). Paths were found and packet traffic passed from all locations. • Use of an 8” passband cavity tuned to 145.010 on the Control Cell (EOC) packet station facilitated simultaneous side-by-side VHF packet and VHF repeater operation with virtually no interference or desense. • Digital operators, as requested, composed messages off-line, saved the messages as files, then connected and uploaded the message files to a digital mailbox. This greatly reduced connect and file transfer time and increased digital throughput. • About 70% of exercise traffic was handled via digital (VHF Packet & HF Pactor). • Stations at all but one location were set up and fully operational by 0730, 30 minutes before the exercise commenced. • District 19 has only been in existence as an ECom group for about a year and only a couple of months as an official ARES® district. This was their

first deployment operation. Their members rolled up their sleeves, prepared exhaustively in advance and contributed significantly to the success of this exercise. They are to be highly commended.

- DRT members made and executed their travel and overnight accommodation arrangements well and without incident or problems.
 - At the 11th hour, a remote NCS site was requested and DRT Home-Base Support operator Sid White (K4ARM) recruited four D-14 operators to help with NCS operations. This was very beneficial.
 - At least two viable communication paths (primary & backup) were identified and utilized for each location. Springfield was unique in that they had no V/UHF repeater access, they successfully utilized HF Digital as primary and VHF packet as secondary.
 - The ICS-213 General Message Form and an ASCII version used for digital communications worked very well. It was easily understood by everyone.
- Improvement Needed:
- Need a much better system for receiving/managing digital traffic at the main hub – some type of portable packet cluster that multiple stations can connect to and where messages can be retrieved at the same time other stations are connected and uploading messages.
 - Traffic Handling Skills
 - Proficiency in standard ITU Phonetics!
 - Pass traffic at a slow-enough pace that receiving stations can copy it accurately and comfortably. One NCS operator commented “some messages were delivered at such a brisk pace that I doubt if my tape recorder could have kept up!”
 - Learn basic traffic handling instructions like WORD BEFORE, WORD AFTER, ALL BEFORE, ALL AFTER, etc.
 - It is important to practice BOTH sending and receiving traffic.
 - While messages were getting through accurately, they were not moving as quickly and efficiently as they should – message turnaround of 20-40 minutes was not uncommon. This was primarily the result of –
 - Traffic handling limitations (above)
 - Digital mailbox logjams (also above)
 - “Global Messages,” to be copied by all stations, need to be preceded with a quick NCS roll call confirmation that all stations are monitoring and ready to copy.
 - Net stations need to stop editorializing! Stations would make a mistake, then waste valuable net time explaining why they made the error. Not necessary. Avoid long “thank you’s” and other non-essential comments – save them for the end of the exercise. Stick to brief, brief, BRIEF!
 - Too much clipping on repeaters – KEY MICROPHONE, [W.A.I.T] TALK.
 - One location had consistent communication challenges on both phone and packet, despite being considered one of the less-challenging sites during pre-exercise testing (under investigation).
- Lessons learned:
- Initially, packet was discussed and it was felt that it would be beneficial, but probably only practical at a few locations. Upon investigation, the Coordinators discovered that an extensive, but neglected, packet network existed on 145.010. Some stations had simply been turned off for lack of use – others required minor rejuvenation. With the addition of a portable node, packet communications amongst all eleven locations was established. LL: Individual packet nodes are an extremely valuable ARES® resource, and although they may not get much day-to-day use, they should be documented, maintained and incorporated into exercises so they are known, available and functioning when needed.
 - Districts should devise a practical message numbering system. We established a system and it worked fairly well, except some flaws surfaced in our response system. The numbering system should be organized so the files automatically align themselves in alpha-numeric

order in a computer file folder. For this exercise we used the first two letters of the county where the clinic was located, followed by a 3-digit (required) count. For example, the 12th message originating from Prowers County Clinic was "PR012." The first message from Control Cell was "CC001."

- A large status board, whether agency-provided or brought by the operators should be utilized (especially at the EOC) to track locations, frequencies, tacticals, packet paths and agency representative names.
- In wide-coverage operations like this, operators should understand repeater & packet node locations and have a map/compass so antennas can be placed and oriented properly, especially those using beams.
- For portable operations, always tie (light nylon string) your beam so it doesn't turn in the wind (gray taping the mast joints isn't adequate).
- At NCS there needs to be a dedicated radio (NOT a single dual-band radio monitoring two frequencies!) with a dedicated operator for each frequency involved in an enterprise as big as the Mass Clinic Exercise.
- The NCS environment should provide spaces that are as discrete and separate as possible for each of the NCS operators. Headphones (with boom-mics, if possible) are a must if NCSs are to be closely co-located.
- If you haven't heard any traffic on the net frequency recently, it's time to request a comm check from NCS.
- Flagpoles (common at many public facilities) make excellent HF dipole/inverted V/sloper supports.
- Carry some @6" PVC pipe pieces ¾" ID or larger to protect coax and other cables through when they have to be run through doorways.
- Carry some foam pipe insulation to put between the bottom of a window and the sill, it protects the coax and keeps wind, cold and dirt from blowing in.

Recommendations:

- Operators should develop a personal check list/sheet for equipment deployment and station setup.
- Accurate time stamping, both of voice and digital communications is important. Small portable atomic alarm clocks are quite common and inexpensive – recommend operators carry one in their go-kit for time accuracy/consistency.
- Use a distinctive color paper (like pastel yellow, green, blue or red) for radio message forms (like the ICS-213). Radio messages often are priority items and colored paper is easy to spot in a pile of white paper. When receiving a colored message form, agency representatives immediately recognize it as a radio message and they appreciate it – I've heard this comment many, MANY times from agency representatives in other exercises.
- Several operators noted that due to distances involved, and less-than-full-quieting copy at several locations, a female NCS voice was much easier to hear and copy than the lower-tone male voices.
- If using digital communications, and the agency is using computers, transfer a copy of the ASCII ICS-213 General Message Form to the agency computers and they can prepare the messages (rather than write them longhand) then transfer them directly to the radio operator via floppy disk, flash disk, LAN or other data-transfer media. This saves time and also helps alleviate difficulty reading some agency personnel's handwriting.
- Develop a way of organizing message forms (paper or computer file), generally in alpha-numeric or sequential order. Use a three-ring binder and hole punch or manila folders. The important thing is some type of message-filing system for quick reference and retrieval when needed.
- One suggestion for handwritten messages was to have a pack of carbon paper so agency representatives can have the original and radio

- operators keep a reference copy. If using a computer and printer, simply print two copies of each message.
- For ARES® applications, the ICS-213 General Message Form lacks fields for message number, time of receipt and time of delivery (all of which had to be notated somewhere on the form).
- General comments:
- This wide-scale, multi-district operation presented many challenges not normally encountered in local individual-district exercises. Despite the many "improvement needed" and "lessons learned" above, the job overall was VERY well done and deserves a big red check in the "success" column (see "Agency Feedback" below).
 - As is the case in most exercises, many operators felt that more message traffic would have been beneficial. By comparison, this exercise provided considerably more message traffic than most. Digital efficiency really saved the day in this regard – had we relied on phone messaging alone, we would have been in big traffic-handling trouble.
 - This event provided the stimulus to fully explore amateur radio communication infrastructure in remote SE Colorado. This will be very beneficial to the D-19 group in future events. It also gave the DRT valuable insight into communication challenges and solutions when conducting operations in remote/low population areas of the state.
 - Bill (KCØFGJ) and I appreciate all the time, effort, training, expertise and extensive preparation put forth by our ARES® volunteers in this event – their extraordinary efforts made it happen and appear relatively easy.
 - As EC for DRT/D-Ø this was an outstanding opportunity to test our operators, equipment and emergency preparedness in a wide-spread exercise over long distances – that presented technical challenges likely to arise during DRT emergency operations.
- Additional training:
- General traffic handling skills.
 - Message management skills at network hub or NCS during combined HF Digital and V/UHF packet networks.
 - Basic ARES® SOP procedures like pre-event testing, checking in with NCS when operational, notifying NCS when ops are away from radio for brief periods, try NOT to leave communications unattended, checking with NCS and ARES® Coordinator before securing stations and departing.
- Agency Feedback:
- Kris Stokke, Exercise Director: "The ARES® personnel were tremendous, knowledgeable, resourceful and solution minded. I keep hearing feedback of the technical wonder that was created in each county to assure communication in our rural/frontier landscape and saw first hand the ability of ARES® in our Exercise Control Cell. State public health personnel were stunned at the progressiveness you displayed. . . Without the ARES® personnel, this exercise could have really flopped in the area of communication."
 - Diana Harris, Senior Controller: "I have to echo Kris' sentiments. Exercise communication would have been extraordinarily poor had it not been for the ARES® folks. We really do appreciate all the work that you put into the exercise! Just from an exercise control standpoint, Kris and I would've been in quite a mess trying to communicate with all the controllers just using one land line."
- Future exercise ideas:
- Several commented that this was one of the best exercises they had participated in and would like to see more exercises conducted on this scale. There is a great deal to be learned from multi-district exercises to help prepare ARESCO for a wide-scale incident.
- Report submitted by: Wes Wilson, KØHBZ
Emergency Coordinator
ARESCO Disaster Response Team (DRT/D-Ø)