



Colorado ARES San Luis Valley Vaccination Exercise After-Action Report October 21, 2005

Date of activity: October 21, 2005

Description of activity: Alamosa health officials conducted flu vaccination clinics across six counties. Communications is known to be unreliable in some locations with respect to cell phones and DTRS radios. ARES provided voice/data communications support for this exercise.

Duration of activity: 11 hours, 0600 to 1700 (in addition, some operators arrived the day prior and spent several hours for setup)

Amateur radio groups participating: Colorado ARES districts 4, 14, 16, 25

Served agencies participating: Alamosa County Health Services Center
San Luis Clinic
Creede Clinic

Describe served agency participation: Vaccination clinics were held, open to the public

Number of Amateurs participating: 12

List of amateurs participating: J D Burke KCØMWB
Steve Coonrad KIØMR
Joe Gaskin NØGYP
Gina Livingston KCØRKT
Rob Roller N7LV
George Sedlack KYØD
Daniel Skul NØRAD
Jeff Smith KBØYCI
Eugene Vaerewyck K9HBR
Janice Vaerewyck KCØUKU
Sid White K4ARM
Wes Wilson KØHBZ

Operator-hours of Amateur service: 121

Describe goals of participating amateur radio groups.

- ?? Provide communications between the Health Services Center in Alamosa and two clinics (Creede and San Luis) dispensing vaccinations, noting the difficult terrain at the two clinics.
- ?? Provide a training environment for operators to exercise field deployment skills while demonstrating amateur radio's ability to fill communications needs of the served agencies.
- ?? Exercise capability of operators from different districts to work together without prior experience in an area where ARES representation currently doesn't exist, and operators had no prior knowledge of amateur radio infrastructure (i.e., repeaters).
- ?? Test capability of 2m single sideband (SSB) voice as an alternate operating mode over medium distances.

Were the stated goals accomplished? Yes

What went well? General comments:
HF Propagation: Creede is located essentially in a canyon, making line-of-sight communications practically impossible across the 70 miles from Creede to Alamosa. Operators there established an HF station using both voice and data communications. HF worked extremely well with a Near Vertical Incidence Skywave (NVIS) antenna.

2m FM and 2m SSB voice did not work from this area with any degree of reliability. Weak 2m SSB signals were received in Alamosa, but too weak to use effectively.

In Alamosa:

Operations took place both outside the health center building and inside the building. The main operating location for communicating between Alamosa and the other two clinics was done from a vehicle mounted station, with an external fixed HF NVIS antenna and 2m beam. HTs were used to relay traffic from the operating location to the operators inside the building, who were stationed with the exercise personnel.

Deployment training worked well, although a little slow, for operators that don't normally deploy to the field with their own equipment. Many times in exercises, operators deploy to locations where a station is already set up by others, and no field deployment training takes place. Of the four operators at Alamosa, some had some previous experience, others had none.

In Creede:

Data communications on HF worked well from Creede. Credit is given to having an efficient fixed antenna at the site, and an experienced crew. Data comm was also a real eye-opener to the health and public safety officials present, who were unaware of the capabilities of amateur radio.

Operating location at the mining museum and community center worked very well. Operators arrived a day early, and were given keys to the facility, allowing 24/7 access if needed. This helped in conducting some comm tests prior to the exercise. Tremendously friendly hosts! Operating location in the center was near the kitchen, far away from most of the activity, but close enough to provide quick access to exercise personnel for messages. Full access was granted to all areas (green dot on ID card) during the exercise.

Access was provided to roof to install HF antenna. Limited options in the canyon for antenna installation. Our hosts again provided all necessary support.

Initial problems with RF affecting HF audio were corrected by reconfiguring the station so antenna feedline did not cross over other system power and data cabling.

Initial antenna concept worked flawlessly.

Recently acquired freestanding trailer tower was invaluable given the location and lack of guy rope/wire options.

Tower trailer was placed in a parking space directly in the center of the parking area in front of the Mining Museum/Community Center complex.

An additional 20-feet of masting (12' aluminum, 8' fiberglass) was attached to top of tower trailer (35') and an 80-meter dipole (128' in length) put up in an inverted V configuration with end ropes over the end of the 200-foot entryway awning.

This put the inverted V over the front edge of the 20' x 200' steel-roof awning which served as a reflector to bounce the signal upward out of the canyon and generally in the direction of Alamosa/San Luis.

Later in the day, Steve and Joe tested a portable NVIS antenna that consisted of two Hustler trapped 80 meter antennas configured

into a horizontal dipole.

Antenna could be heard in Alamosa, but was not "copyable."

Antenna probably would have worked fine earlier in the day before the 75-meter propagation dropped.

In San Luis:

San Luis is located east of Alamosa, immediately adjacent to a high hill on the west side, blocking line-of-sight signals to Alamosa. HF worked, and 2m signals were directed northward to reflect off of Blanca Peak. Numerous power lines in the vicinity of the clinic caused a significant amount of noise making both HF and 2m SSB reception difficult. 2m SSB signals transmitted from San Luis were received very well in Alamosa.

Areas needing improvement:

Alamosa:

Setup took longer than expected, and the Alamosa center was not operational at the start of the exercise. Since this was a demonstration exercise, and not a performance exercise, this would normally not have been an issue. However, after the exercise was complete, we learned that a CDPHE representative was at the Creede site and was recording performance measurements, even though ARES was not operating against performance requirements. Recommend that ARES be included earlier in the planning process, if possible, to get a clearer understanding of our role.

Having only one primary station to use for multiple modes caused some difficulty and unpreparedness when the radio was used on a different band. Testing on 2m SSB, for instance, required essentially taking down primary communications on the HF band.

It was also not clear upon arrival at the Alamosa health center exactly what the parking arrangements would be for health workers and visitors. After installing a fixed antenna, we found visitors and other exercise personnel parking in the vicinity of the antenna, and we had to make immediate changes to keep vehicles from driving in to our wire antenna. Again recommend that ARES be included earlier in the planning process, to get a better understanding of the situation and expectations prior to the exercise.

San Luis:

The location of the dispensing site was unfortunately selected to be right in the neighborhood of very noisy power lines. This caused significant interference for both HF and VHF communications. Recommend, when possible, a preliminary site survey including testing communications, be performed prior to an exercise such as this when the operating locations are known ahead of time. Of course, in this situation, the operators did not live in the immediate area, making it difficult to schedule time ahead of time.

General:

2m SSB: Going in to this exercise, planners did not know of any 2m repeaters in the area that would provide the needed coverage. 2m SSB was an option that has had very little use in past exercises, and it was decided to attempt to use it for this exercise. The terrain in Creede made it very difficult for signals to get to Alamosa. Signals were so weak that they were unusable. Signals between Alamosa and San Luis did very well, however. Blanca Peak served as a good signal reflector, since line-of-sight was impeded by terrain in San Luis. Although signals were received in Alamosa from San Luis very strong, signals from Alamosa to San

Luis were not received as well due to high power line noise in receivers. The San Luis location had close-proximity power lines which caused much interference.

The exercise plan should have more detail for contact information for the operators.

General comments:

The sheriff's department and other public safety officials had a good understanding of the difficulty with communicating from Creede. It is not uncommon to have regular telephone and power outages in this town. With some education, they quickly came to appreciate the role of ARES communicators and the capability of the equipment, despite its bulky nature, and understand that we are not what is typically known as Cbers. They were impressed with our data communications capability, especially with the e-mail capability, Winlink and HF in general, including the ability to send attachments, and its quasi-secure (data compression) mode. They were also impressed that ARES carried emergency power, generators, fuel, etc. Overall, there was good exposure of ARES to the public safety officials, especially in Creede.

The Alamosa regional health planner provided reimbursements for out-of-pocket expenses (gas, food, lodging).

Recommendations:

Encourage more operators to invest into data communications equipment, and exercise more with data communications. It seems to be leading a new wave in communications that, up until only a few years ago, was unknown. Served agencies are more accustomed to using e-mail for messaging and file transfers, and providing that kind of service, even though it's slower due to technical reasons, allows responders in the field to communicate in a more natural way. In addition, data comm is much quicker given the time spent spelling out words in voice mode, and relaying one or more times.

Traffic handling skills are always under scrutiny, especially in the areas of using ITU phonetics and NTS techniques, such as message numbering. Also, as we find ourselves operating more with public safety agencies using NIMS and ICS, we need more training in ICS and in using the more generally accepted ICS forms.

Continue to use 2m SSB as a mode during exercises. This mode, although not used much in the past, holds promise for simplex communications when (1) repeaters are not available, or (2) when alternate frequencies are needed over medium distances. 2m SSB with AFSK can also provide an alternate mode for digital communications, although more exercise is necessary to gain experience.

Develop ARES activity in the Alamosa and San Luis Valley region. Prior to the exercise, the SEC mailed dozens of letters to hams living in the area, based on data available with the FCC. A small number of people interested in emergency communications responded. Several of those people visited the Alamosa Health Services Center during the exercise, and made aware their interest in rekindling emergency comm activities in the region.

Map out repeater coverage for these areas in case future events require hams from neighboring districts provide support.

Maintain relationship with Alamosa region officials so they are aware of ARES presence and capabilities.

Lessons learned:

Plan for exercise performance to be evaluated, even though performance was not a part of the original requirement. Going in to

the exercise, ARES was present to DEMONSTRATE its ability to provide communication between the three locations. There were no time constraints, no requirement to be on the air at a certain time, and no other performance requirements identified. The only goal was to demonstrate that we could talk between locations. After the exercise, it was learned that representatives from CDPHE were present in Creede, and were expecting communications to take place at a specific time. Operators in Alamosa were unaware of the representatives' presence, and the fact they were measuring performance factors. Circumstances in Alamosa contributed to delays in setup, and Alamosa operators did not get on the air until near an hour after the vaccination clinics opened. Besides the demonstration, operators that hadn't worked together before, and operators that had little to no experience in field deployment were in training to develop deployment skills. These skills were being developed, and no specific time constraint was set.

2m SSB is known to provide good communications over medium range distances under good propagation conditions. It's not uncommon for 50 - 100 mile contacts to be made using 2m SSB under good conditions. During this exercise we learned that terrain plays a significant factor, especially when the distances involved are considerable. About one half of the 70 miles from Alamosa to Creede was up in a canyon.

Additional training needed:

Traffic handling skills, ITU phonetics, ICS form familiarization, ICS training, field deployment (what to bring to the field), data communications (Winlink, digital modes, etc), equipment familiarization (how to operate your equipment)

Ideas for future exercises:

More exercises involving field deployment WITH the operator's own equipment are necessary. In many exercises, including the annual Field Day, most ARES operators deploy to a site where someone else has set up club or other personal gear. Many operators don't often get an opportunity to deploy with their own gear. Suggest an exercise to someone's back yard, or to a park or other open area, or even an adjacent field during Field Day, where operators can set up their personal station in the field to experience first-hand the issues that will arise.

Not so much exercises, but additional training is necessary in the area of data communications to familiarize operators with frequencies, modes, software, and other functions regarding the use of HF digital modes like PACTOR, software such as AirMail, and understanding the basics of data comm. Some of the simplest things, like knowing what frequency and station to connect to when deployed, will make or break an operation.

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