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**AFTER ACTION REPORT**

**San Luis Valley Digital Trunked Radio (DTR)  
Tabletop  
Communications Exercise  
For  
Alamosa County and Conejos County**

**Conducted April 01, 2006 at Ortega Middle School, Alamosa,  
Colorado**

**Version 1.0**

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## Executive Summary

The purpose of this exercise was to introduce DTR radio protocols utilizing common channels that are already programmed into all DTR radios and then provide a fictional scenario where exercise participants could use DTR radio protocols to coordinate their emergency response actions with other agencies.



Since this was the first exercise designed and conducted by the San Luis Valley Exercise Design Team, the team decided to limit the scope of the exercise to only Alamosa and Conejos counties. Additionally, exercise participants were limited to Fire Department, Law Enforcement agencies and Emergency Medical Services agencies.

Exercise staff members were given short-range hand held “walkie talkie” unit to communicate between themselves.



Several days before the exercise, a representative from the Motorola Corporation came to Alamosa and provide a “DTR 101” class on how the radios operate, which knobs do what function. The intended audience were representatives from San Luis Valley emergency response agencies. These people would return to their agencies and familiarize their co-workers with what they learned in “DTR 101”.

Before the exercise started, Jon Montano (San Luis Valley RETAC Coordinator) gave a PowerPoint presentation on the basic principals of the Incident Command System or ICS.

After Jon concluded his ICS presentation, Pam Stewart (CSP Regional Communication Manager) gave a PowerPoint presentation on the DTR radio protocols.

At the beginning of the exercise, participants experience some awkwardness with the DTR radio protocols. As is with all new concepts, this was anticipated and participants quickly adjusted to the situation.

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As responders received exercise injects simulating dispatch sending them to the incident scene, they were prompted to announce their arrival to the IC on the Alamosa Mutual Aid Channel (MAC).

Once an Incident Commander was selected, the IC quickly began to assemble his command staff. His staff consisted of representatives from Law Enforcement, Fire Departments and Emergency Medical Services. This configuration provided the IC with an efficient method to coordinate activities between the three disciplines. At this point, exercise participants began to effectively use the DTR radio protocols.

The IC followed the DTR radio protocol and remained on the Alamosa MAC to communicate information between himself and the CSP Alamosa Regional Dispatch Center (hereafter called “dispatch”). Upon their arrival at the incident scene, other disciplines followed the DTR radio protocols and communicated on the following DTR channels:



- Fire Department personnel selected Simplex Channel “1” (SIMP 1)
- Law Enforcement personnel selected SIMP 2
- Emergency Medical Service personnel selected SIMP 3

The exercise scenario grew in complexity and the participants responded to the needs of the situation as they were handed exercise injects by the Controllers. After an ammonium nitrate and fuel oil (ANFO) bomb was discovered in a vehicle, the IC called for a two mile radius evacuation and the exercise was terminated.



After the exercise concluded a debriefing or “hot wash” was conducted with all participants. Then exercise participants were asked to fill out a written critique. One of the questions was “Please rate the overall exercise on the following scale” (1 being worse and 10 being best). The average score for this question was 8.2.

### **Background Information**

Radio communication between various emergency response disciplines has historically been poor to often non-existent. If an agency did not have the frequency of other agencies programmed into their radio, communication was not possible.

About ten years ago, several Colorado State agencies began to build the infrastructure for a Digital Trunked Radio (DTR) system. The purpose of this system was to enable local and state emergency response agencies to communicate between themselves on a statewide basis. These new DTR radios are components to a growing, statewide communication project to provide seamless and reliable interoperable communication between emergency response agencies in locations all around the State of Colorado.

San Luis Valley officials came together in early 2003 and made a decision to join the State of Colorado DTR system.

Since late in 2004, emergency response agencies within the San Luis Valley region have been receiving DTR radios through Homeland Security grant programs. At the time of this writing, most agencies have their DTR radios, but a few agencies still have not received them.

The DTR radio system directly supports one of the State Homeland Security capabilities called “Interoperable Communications”. Aside from the nearly crystal clear voice audio on the radios, probably the most important feature is commonality of radio channels contained in all DTR radios used in the State of Colorado.

San Luis Valley emergency response agencies have been using their DTR radios on a daily basis to communicate and coordinate action with their own agency and their dispatch center. However, during emergency response actions involving multiple agencies communications between emergency responders have been hampered because no one was familiar with common communication channels.

This exercise introduces a new paradigm in communication techniques for each DTR radio user to communicate with other disciplines and coordinate their activities on channels contained in all DTR radios.

### **Goals and Objectives**

Exercise goals and objectives for the San Luis Valley Digital Trunked Radio System tabletop exercise follow:

**Goal** – Establish initial Incident Command structure and establish communication between all responding emergency response units and personnel.

### **Objectives**

1. Within 5 minutes of arrival at a disaster or emergency scene, the senior emergency responder will assume the duties of Incident Commander.

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2. Within 5 minutes after being dispatched to a disaster or emergency scene, each emergency response unit will demonstrate their ability to follow DTR radio protocols to contact the Incident Command to receive initial instructions.
3. Upon arrival at a disaster or emergency scene, each participant will demonstrate their ability to follow DTR radio protocols with appropriate MAC or simplex channels to contact and coordinate actions between responders of the same discipline.
4. Each participant will use the DTR radio to transmit at least two messages during the exercise.

### **Overall objectives for each discipline are as follows:**

#### Fire Department

- Evaluate the process used to determine the level of response.
- Evaluate the DTR radio coordination with local Law Enforcement and Emergency Medical Services in rescue operations at the incident scene.
- Evaluate the ability to function under Incident Command System.

#### Law Enforcement

- Evaluate the establishment of scene security and definitive inner and outer perimeters.
- Evaluate the DTR radio coordination with Fire Department and Emergency Medical Service in rescue operations at the incident.
- Evaluate use of pre-established procedures to mobilize all necessary Law Enforcement personnel and resources.
- Evaluate the ability to function under Incident Command System

#### Emergency Medical Services

- Evaluate the establishment of measures necessary for medical services at the incident.
- Evaluate the DTR radio coordination with local Law Enforcement and Fire Department in rescue operations at the scene.
- Evaluate the establishment of a staging area for all responding medical equipment

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- Evaluate establishment of a communication procedure for interaction with other response agencies.
- Evaluate the ability to function under Incident Command System.

Each exercise participant was given a statewide MAC channel to make contact with a representative located in the Colorado Department of Emergency Management Command Post located in the facility in Centennial, Colorado on Mutual Aid Channel 9 Southeast (M9 SE). The purpose of this activity was to demonstrate the long-range capabilities of the DTR radio system.

A number of exercise injects were developed to drive DTR radio traffic between participants to give everyone practice in locating and using various common channels found in all DTR radios. As an example, a Conejos County Deputy Sheriff was given an inject that directed him to contact any Emergency Medical Service unit at the incident scene. Injects similar to the example were developed for all disciplines participating in the tabletop exercise.

### **Pre-Exercise Activities**

Several months in advance of the exercise, representatives from the San Luis Valley Exercise Design Team contacted Ortega Middle School officials to discuss the possibility of using the school as the exercise site. School officials agreed and work began on which areas would be used during the exercise. The following areas of the school were used for the exercise:

Main entryway/lunch room seating area – The registration table was set up in this area. School officials also set up table with built-in seats used by students during lunch periods. This area also contained a refreshment station operated by a Red Cross volunteer.

Rooms 101 (Emergency Medical Service), 101A (Law Enforcement) and 105 (Fire Department) – These rooms were chosen because of the large seating area and the fact that each room featured a built-in PowerPoint projector mounting in the ceiling.

Library – This area was the initial meeting area for exercise participants. SLV Exercise Design Team members conducted short briefing on Incident Command System and the new DTR radio protocol. After the exercise started, this area contained the IC and his command staff.

Ortega middle School was also selected because of the following reasons:

The DTR radio signal strength was quite good in the area.  
Plenty of parking space for exercise staff, participants and observers.  
The school location was well known to everyone involved in the exercise

There is a mutual aid agreement between Ortega Middle School and Alamosa County to use the school during exercises and emergencies.

### **Participants and Agencies**

The following agencies (in alphabetical order) and individuals were the exercise participants:

#### ***Alamosa County Sheriff***

- Robert Davis

#### ***Alamosa Emergency Medical Service***

- Jason McGinnis
- Shannon Odet
- Ted Andersen

#### ***Alamosa Fire Department***

- Dave Teem
- Tony Bobicki
- Mike Adcock
- J.J. Snook
- Jim Chapman
- Rod Rodgers
- Jason Russell
- Andrew Chavez
- Jeff Johnson
- Zach Cerny

#### ***Alamosa Police Department***

- John Michalke
- Jeff Martinez
- Robert Jackson
- Martin Dominguez

#### ***Antonito Fire Department***

- Art Atencio

#### **Colorado State Patrol Alamosa Regional Dispatch Center**

- Mike Hagaman
- Kenric Holman
- Donna Goodwin
- Cameron Decker

#### ***Conejos County emergency Medical Service***

- Coleen Martin

#### ***Conejos County Sheriff***

- Joe Taylor
- Justin Harlan
- Lucas Sowards
- Marcos Naranjo
- Chris Crown

#### ***Manassa Fire Department***

- John Comstock

#### ***Mosca-Hooper Fire Department***

- Blaine Witherspoon
- Glen Buxkemper

#### ***La Jara Fire Department***

- Tom Salazar

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The following San Luis Valley Exercise Design Team members, with their exercise positions, were present during the exercise:



Pete Magee – Exercise Director and Senior Controller

Lorrie Crawford – Registration Desk

Pam Stewart – Controller for the CSP Alamosa Regional Dispatch Center

Dave Pote – Controller for Law Enforcement

Don Chapman – Controller for Fire Departments

Rodney King – Controller for Emergency Medical Services

Cameron Decker – Evaluator for the CSP Alamosa Regional Dispatch Center

Jeff Babcock – Evaluator for Law Enforcement

Jim Clare – Evaluator for Fire Departments

Jon Montano – Evaluator for Emergency Medical Services

There were several observers at our exercise:



Jack Cobb – Colorado Department of Emergency Management (from the Centennial, CO office)

Erin Smith – Reporter for the Pueblo Chieftain Newspaper (she is from the Alamosa, CO area)

### **Description of the Exercise Scenario**

The exercise scenario starts with a two vehicle accident at the intersection of U.S. Highway 285 and Alamosa County Road 12. The scenario builds in complexity, requiring participants to coordinate activities with the DTR radio in accordance with the DTR radio protocols.

- Automobile traveling East on CR 12 at excessive speed collides with a 14 passenger van traveling South of US 285.
- Automobile skids into bar ditch next to AmeriGas fence and catches fire.
- Citizen passing by calls 911 on cell phone to report accident (the report does not mention any injuries or fire, just a two car accident)
- AmeriGas propane truck in the AmeriGas yard is in the process of being filled with propane – truck driver sees fire starting and jumps off his truck and runs away.
- Grass along AmeriGas fence and inside propane storage yard begins to burn.
- Homes near accident site are in danger of the fire.
- Alamosa Fire Department and Alamosa Sheriff Deputy arrives.
- The 14 passenger van is full of senior citizens, some are injured, one is dead.
- Law Enforcement stops traffic on US 285 and CR 12 and decides on which detour is best.
- Nearby homes are evacuated.
- One of the stopped vehicles is an old Volkswagen mini-bus with one occupant and covered with anti-war slogans.
- Conejos county Emergency Medical Service, Sheriff and La Jara Fire Department are called for mutual aid assistance.
- The AmeriGas propane truck left unattended in the propane storage yard catches on fire.
- Newspaper reporters from the Valley Courier and Pueblo Chieftain arrive and want information.
- Alamosa County Sheriff Deputy starts to talk to the driver of the Volkswagen mini-bus because he appears nervous; the deputy grows suspicious of the driver

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when he smells fertilizer and fuel oil odor and sees an AK-47 rifle on the seat partially covered by a coat.

- The mini-bus driver hits the deputy with the truck door, knocking him down and starts running North on US 285.
- The deputy thinks the mini-bus contains ammonium nitrate bombs.
- The IC calls dispatch for a bomb squad to evaluate the Volkswagen mini-bus.

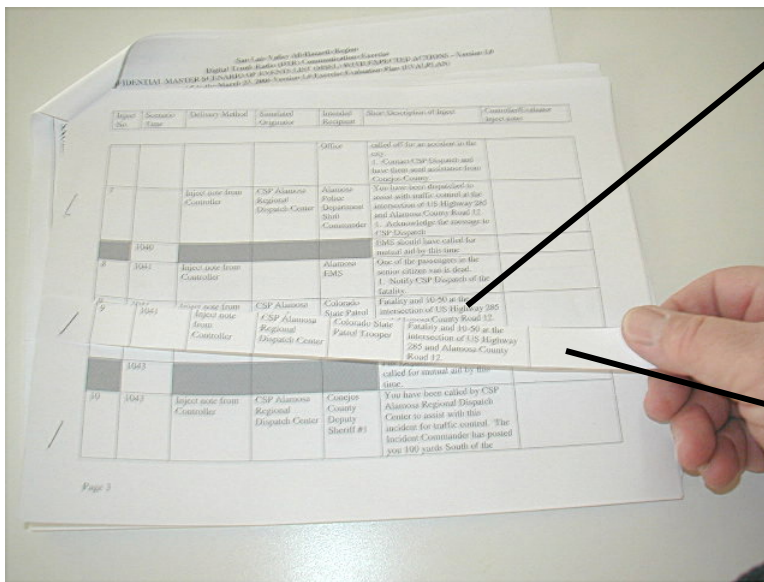
## Accomplishments and Shortfalls

### Accomplishments

Exercise goals and objectives were all accomplished within the time allotted.

Controllers handed written “injects” from the Master Scenario of Events Listing (MSEL) to exercise participants at pre-selected times. There were actually two versions of the MSEL. One version was the standard MSEL with a description of each inject. The second MSEL version contained all the same information plus expected or anticipated actions on the part of the exercise participants.

Controllers cut the first MSEL version into paper strips, each strip containing one inject. These strips were then stapled to the second MSEL version. At the designated time, the Controller simply pulled off the inject and handed it to an exercise participant. Since the Controller still had the second MSEL version in his hand, it was intended to keep track of which injects had been handed out and which had not. This photo shows how this process was managed:



This area of MSEL contains the inject information along with the expected action on the part of the recipient

This slip of paper is the actual inject that the Controller handed to each recipient.

### ***Shortfalls***

There was not enough time between injects. This created some confusion at several points during the exercise. We will try to separate most of the injects by five or more minutes during future DTR exercises.

The Incident Commander and his staff (representatives from Law Enforcement, Fire Department and Emergency Medical Services) moved into the Ortega Middle School Library. This was appropriate and planned. However, the SLV Exercise Design Team did not have a Controller or Evaluator assigned to this area. The Exercise Director and Senior Controller filled in for this position. We will have pre-selected Controllers and Evaluators for this area during the next DTR exercise.

All other exercise participants were located in three separate class rooms. The SLV Exercise Design Team would have been able to provide more consistent PowerPoint information if we had used only one projector which projected a large image that all participants could see and use as a basis to make decisions. In looking back, we should have had all participants in one large room such as a school gymnasium. Different emergency response disciplines would be in separate corners of the room, in a position that enables everyone to see the same PowerPoint projection. This would allow the exercise staff to more efficiently develop the scenario visually for participants.

### **San Luis Valley Exercise Design Team Comments**

#### ***From Pete Magee***

Registration – The registration process went very well. Participants were provided with materials relevant to the exercise and had an opportunity to relax and socialize in a large, open environment. Refreshments were available and the setting was relaxed and informal. My impression was that this placed many (if not all) of the participants at ease and this contributed to the commendable performance during the exercise.

Presentations on ICS basics and the DTR radio protocol – The refresher courses in both ICS and DTR protocol were an excellent decision on the part of the exercise design team. Both review courses were short enough, yet detailed enough, to review the salient components and prepare the participants for the exercise to follow. The facility in which the refresher courses were conducted was ample in size and at the same time small enough such that all participants experienced an impression of comradery and urgency. Participants paid attention to these reviews. There were not any individuals in these lectures who appeared bored. This suggest to me that these refresher courses on both ICS and DTR are something that will need to be offered on a continuing basis. As fundamental components of all exercises, we should consider some on-going review of these elements for the future.

The exercise – The separation of the participants by discipline had good aspects and other aspects upon which may be improved. The good aspects included the projector displays of the simulated site of the exercise, the available maps and most importantly, the necessary use of the DTR radios to communicate outside of their discipline. The less than desired aspects of this arrangement were the difference in the simulated timeline of the exercise between disciplines. Some disciplines are several minutes ahead of other disciplines. Some disciplines had many more participants than others. I suggest that in future exercises of this type we assign individuals to other disciplines to provide an equal number of participants in each discipline. This approach may force DTR users to become even more familiar with the operation of their radio, as well as more familiar with the procedures and responsibilities of other first responders. My most unsettling observation of this exercise was at the start of the exercise. Everyone did not hear the initial call-out from dispatch and as such, there was some confusion as to the beginning of the exercise. In addition, with the first inject, a participant suggest that this was an unlikely scenario as a different agency would have been notified and they would perhaps have requested additional support. We need to design the scenario and initial injects such to avoid this type of “confusion” in the future. The other area in which we need improvement is that we failed to foresee the need of a Controller and Evaluator for the IC and his command staff.

The “Hot Wash” – I was very pleased at the number of comments, suggestions and critiques offered by the participants. This number of comments indicated to me that this type of exercise is necessary and appreciated by the participants. I felt that having a “working lunch” with the “hot wash” in one large room was an excellent idea and provided all participants with a relaxed environment within which they were free to discuss with the exercise design team, the Controllers and Evaluators all aspects of this exercise.

***From Jon Montano***

Consider having exercise participants in one room with a PowerPoint projection of the scene that everyone can see. A large room such as a school gymnasium would provide enough room for each discipline to separate into corners of the room. This would keep them apart so that they are required to use their DTR radios to communicate as opposed to physically talking to each other.

Controllers need to make announcements on the hand held “walkie talkies” each time they hand out an inject to exercise participants. This will help the exercise staff keep track of how the exercise is flowing.

We only had a few minutes or less between injects. This created a somewhat unrealistic scenario and caused the exercise to be artificially compressed more that it should have been.

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We did not have Controllers and Evaluators with the Incident Commander. He and his command staff were located in the Ortega Middle School library. During the next exercise we should insure a Controller and an Evaluator are located with the IC.

### *From Don Chapman*

I think we need to spread the exercise injects out a little more. One or two minutes between injects was not realistic, and if the injects are not given exactly on time, this can result or lead to poor coordination between Controllers.

I think the who exercise went well except for the following:

- Dispatch tried to move people onto MAC channels before we had planned. In real life they wouldn't be doing that, rather the IC would ask for that to happen.
- The exercise showed that most emergency response agencies here in the San Luis Valley have a big need for ICS training.
- Information about the bomb was not passed to Emergency Medical Services. Fire Departments and Law Enforcement were notified.
- We need to communicate what injects are being passed out by controllers. I tried to follow the time line we set and when I was done with my injects I figured out that I was way ahead of other Controllers.

Overall, I think it was a great learning experience for everyone involved including the exercise design team. One thing we need to keep in mind as we do more of these DTR exercises is the fact that hardly anyone in the San Luis Valley has done any of this type of training.

### *From Jeff Babcock*

Provide maps, layout, pictures, and etc., so participants have a better overall scene awareness.

Reinforce to emergency responders the need to use county MAC channels as the default channel to report into an Incident Commander. Make dispatch center aware of this need.

### *From Jim Clare*

First item of notice was not all participants showed up for the exercise. The exercise design team may want to have some form of conformation a few days ahead to help with meals and active participants for the exercise.

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Need to have some way to let the controllers and evaluators know when the injects have been handed to the exercise participants. This could be done with the hand held “walkie talkie” radios handed out before the exercise.

Injects were handed out according to time frames, but they need to be spaced out to make the incident run smoother. Perhaps a dry run with all the injects prior to the exercise would be helpful.

Extra injects with radio checks worked out good later on in the exercise once the exercise participants were comfortable with what they were doing.

It was very evident that most players were not familiar with the radio system. We had a lot of comments that this training was the best they had had to day.

Need to work at getting better unified command structure with players to help make the exercise flow better. Maybe more training before the exercise.

May want to have some type of a more hand-on drill to find channels on the radios before the actual exercise starts. This may make the exercise flow better.

May want to make sure all pagers and radios work in the building that the exercise is going to take place in before hand. There were some transmissions the would bleed over onto other channels.

The paperwork for the Evaluators was good to follow and work with during the exercise.

May need to stress the IC and the Officer in Charge (OIC) process as to how it works so exercise participants know more about what is going on.

Dispatch did an excellent job or working with the exercise.

May want to go over DTR radio protocols a little bit more with exercise participants before the exercise starts.

It may be a good idea to have everyone see the PowerPoint program before the exercise or have it so all can see during the exercise, such as in a large room.

Need to make sure when talking to the IC or the OIC that clear language is used rather than department numbers, or perhaps use both.

Exercise facility, registration and luncheon were done very well.

### **Summary of the “Hot Wash” debriefing**

Exercise participants were, for the most part, very pleased with the chance to use their DTR radios in a coordinated fashion. This has been a point of frustration for many emergency responders,

Request Alamosa County Sheriff Dave Stong to provide the regional Incident Command Vehicle at these exercises. The exercise Incident Commander and his staff should relocate to this vehicle just as they would do during an actual incident.

### **Written comments from exercise participants follow:**

Everything happened too fast, timeline was not realistic.

Specify to [emergency] agencies to send people [to this exercise] they believe will be incident managers; emphasize that point.

### **Recommendations**

#### ***Training needs***

Emergency responders need more Incident Command System training. This is especially true for those who will have a leadership role during emergencies or disasters.

Conduct more DTR radio exercises around the San Luis Valley. Expose as many emergency responders to the DTR radio protocols as possible.

Emergency responder agencies should include DTR radio training and use of the protocols during period in-service training sessions.

Anyone who would have a role during emergencies or disaster should attend the National Incident Management System (NIMS) training. This is currently taking place around the San Luis Valley, but not all responders have attended this training.

#### ***Changes in the Emergency Plan***

County Emergency Managers should consider adding the DTR radio protocols to their County Emergency Plans.

## Improvement Plan Matrix for Alamosa and Conejos County Public Safety Agencies

Tasks	Recommendations	Improvement Actions	Responsible Party/ Agency	Completion Date
<p>First responders need to attend awareness training for managing incidents during emergencies</p>	<p>Managers of first responder agencies should insure all personnel who would respond to an emergency or disaster scene attend awareness training for managing incidents.</p> <p>Evaluators should follow up with agencies within their respective discipline to ensure training is completed.</p>	<p>All first responders should attend National Incident Management System (NIMS) IS-700 training</p> <hr/> <p>All first responders should attend Incident Command System (ICS) ICS-100 training</p>	<p>Law Enforcement/ Jeff Babcock</p> <p>Fire Departments/ Jim Clare</p> <p>Emergency Medical Services/ Jon Montano</p>	<p>September 30, 2006</p>
<p>First responder agencies should become more familiar with the Digital Trunked Radio (DTR) system.</p>	<p>First responders should become more familiar with the interoperable communications capability available with DTR radios.</p>	<p>First responder agencies should include practice sessions using DTR radios and the DTR radio protocols during in-service training meetings</p>	<p>Law Enforcement/ Jeff Babcock</p> <p>Fire Departments/ Jim Clare</p> <p>Emergency Medical Services/ Jon Montano</p>	<p>July 31, 2006</p>