

Exercise 4-2

Interoperability Challenges

Unit 4

Purpose

The purpose of the exercise is to provide the students with an opportunity to identify the challenges specific to communications in certain all-hazards environments and explain how to use existing communications technology to overcome these challenges.

Objectives

Students will:

- Discuss how all-hazards environments pose unique challenges to the COML.
- Identify how communications technology can be used to overcome challenges.

Exercise Structure

This exercise is scheduled to last approximately 30 minutes, including instructor led discussion. Students will discuss potential challenges and solutions to achieving interoperability using the Urban Train Derailment Narrative and the Urban Train Derailment IAP. Students can also use information provided in the Central City tab. The Instructor will provide a series of injects to stimulate discussion that the students will respond to in a group-discussion format.

For the final phase of the exercise, the instructor may use any of the following injects:

- A fire truck on the way to the derailment skids and hits a cell tower. All the cell phone protocols you've arranged are broken. What should you do?
- Chlorine cloud is drifting toward the dispatch center.
- Equipment has been ordered for a critical mission but has been delayed.
- Wind changes direction and is now headed toward the ICP.
- Failure of the radio system due to unknown mechanical reasons.

Rules, Roles, and Responsibilities

Students will participate in an instructor-led discussion.

Following are the specific activities / instructions for your participation in the exercise:

1. Review the information provided.
2. Identify challenges to interoperability.
3. Identify technologies and techniques that can overcome these challenges.
4. Apply these to the initial challenges.

5. Repeat 3 and 4 with the Instructor's injects.

Instructors moderate discussions, answer questions, and provide additional information as required.

Exercise 4-2 Schedule

Activity	Duration	Participation Type
Exercise	30 minutes	Classroom

Urban Train Derailment Narrative

In the early morning today, a CC&BF freight train derailed and rolled down an embankment along the Roaring River. Parts of the front of the train lay on its side in the river and along the steeply sloping river bank. The area along the river bank is part of the Central City Riverfront Park. The train consisted of 4 diesel locomotives, 23 tank cars (pressurized and non-pressurized), 12 hopper cars, and 2 cryogenic liquid tank cars containing liquid oxygen (LOX). Initial assessment indicates that several of the pressurized tank cars containing chlorine and anhydrous ammonia have ruptured. Two of the LPG tank cars exploded on impact during the derailment, causing a fire. The hopper cars containing ammonium nitrate lie on their sides, and the contents have spilled onto the banks of the river. The locomotive diesel tanks have ruptured, spilling diesel into the river. The cryogenic tank cars appear to be intact; however, several of the non-pressurized tank cars have released an unknown quantity of crude sulfate turpentine into the river.

The Engineer driving the train managed to get to the river bank and is being treated at Central Hospital for serious injuries sustained in the derailment. Central City Police Department cars are on both sides of the river at the derailment. Their police radio picks up a report of a chlorine gas cloud forming immediately downstream from the leaking rail cars. This report was picked up by several citizens who contacted the local news stations in Central City. Reporters from the major local TV, radio, and newspaper news bureaus are on the way to the incident. One of the TV news crews is already shooting pictures. The local TV reporter is asking to do an interview for their evening news, and other reporters are lining up for interviews as well.

There is uncertainty about whom or which agency is in charge of the incident. There is a pervasive rumor that the train Engineer's license to operate the engine had expired, but that is being checked out. The neighborhoods immediately adjacent to the spill on both sides of the river are being evacuated due to the danger posed by the chlorine gas. The area about 200 yards from the derailment has been cordoned off. Hazmat crews and rail crews are busy containing the spill and bringing in equipment to remove the derailed cars. The mayor has issued an evacuation order for residents in the surrounding area, and is requesting assistance from the state. The Red Cross is establishing an evacuation center at North High School in Central City.

There are rumors that hundreds of Coho salmon, a federally listed threatened species have been killed in the river. The Parks Department, County, and State Department of Natural Resources have issued an advisory and closed the river to fishing, recreation and other uses for 25 miles downriver from the rail bridge site.

The Emergency Medical Agency (EMA) in Liberty County is reporting numerous incidents of burning eyes and lungs. The Central City hospital has exceeded its capability to staff the emergency room. There are numerous water intakes along this stretch of the Roaring River.

Liberty County is the largest county in the state in terms of population, and includes Central City, the largest and densest population center in the State of Columbia. The population of Central City is approximately 149,000 and the metropolitan area population is approximately 302,400. Central City serves as a major transportation hub within the state: commercial river traffic, rail, air, and interstate traffic and is 40 miles from the Port of Charlotte, on the Big Ocean.