RAIL SAFETY TRAINING FOR LAW ENFORCEMENT

SUMMARY

The Rail Safety Training Course for Law Enforcement project builds upon QinetiQ North America's (QNA) previous experience in developing first responder training. Specifically, in 2015, QNA developed a video sponsored by the Federal Railroad Administration (FRA) Office of Research, Development and Technology titled *Locomotive Emergency Response Training* (LERT). This 30-minute video educates emergency responders with basic information regarding freight rail operations and locomotives so that they know how to safely deal with emergency situations.

During the development of LERT, first responders and high-level emergency officials sent comments detailing the need to educate emergency dispatchers on handling rail emergencies. Emergency dispatchers are the "frontline officers" who interface directly between the railroads and responding emergency units. They ascertain the type and level of response required, identify response location, and perhaps most importantly, communicate with the railroads on behalf of the first responders.

Given the hectic and turbulent nature of emergencies, there is a plethora of opportunities for errors to occur, especially since most emergency dispatchers have no familiarity with rail operations or terminology. For example, QNA discovered that many emergency personnel do not know that parallel rail tracks can be owned or operated by multiple railroads. In this scenario, an emergency dispatcher would need to know that he or she must inform all the relevant railroads to ensure proper track shutdown. As such, proper training and familiarization with railroads is essential to equip emergency dispatchers with the tools and knowledge required to respond to a locomotive accident effectively and safely.

BACKGROUND

Law enforcement officers are typically the first emergency responders to reach the scene of an accident at a grade crossing. As such, it falls on them to ensure the safety of victims, the general public, and themselves. Unfortunately, most law enforcement officers are not provided with the proper training to contend with the many unique hazards and challenges present at a rail accident. Additionally, law enforcement officers

Figure 1

can sometimes be unaware of all relevant laws regarding rail crossing safety and railroad trespassing prevention. For example, it is not commonly known that more people are killed while trespassing on railroad property than die in grade crossing collisions. Law enforcement officers often believe that violations only occur when someone is crossing the tracks when the crossing signals are activated.

FRA funded this effort to develop the Rail Safety for Law Enforcement Training (RSLET) program that will eventually replace the current Operation Lifesaver Grade Crossing Collision Investigation program. The core goal of RSLET is twofold: encourage greater enforcement of trespassing and grade crossing laws; and increase awareness of safety hazards and conditions when responding to railroad incidents. The RSLET video aims to significantly deter violations and increase public safety around tracks and trains. The video covers all relevant procedures and practices as identified by both railroad experts and emergency officials.

OBJECTIVES

The objectives of RSLET include:

1. Define the training objectives and develop a training outline.

2. Develop a training course for law enforcement.

3. Pilot the training program with law enforcement to gather stakeholder feedback.

METHODS

Data Collection and Analysis: The first step in the project was to define the learning objectives of the training. These learning objectives articulate the knowledge and skills that the law enforcement need to acquire by the end of the video. In order to establish the learning objectives, the QNA team first reviewed National Transportation Safety Board (NTSB) and FRA accident investigation reports to determine the dynamics of incidents and the associated challenges encountered during response. A review of accident investigation reports was conducted to best define the learning objectives for law enforcement. This review resulted in the collection of valuable information about rail emergency incidents, including how emergency responders reacted in the past when receiving a call about a railroad emergency. This investigation looks at responders' actions and identifies potential areas of improvement. For

this review, QNA considered emergency responders as police officers, firefighters, and emergency dispatchers. By uncovering the deficits in current training procedures and highlighting what seems to have been effective to date, training objectives can be defined in an informed manner, which will ultimately lead to the successful development of a training video for emergency dispatchers.

To gather more information regarding the current gaps in training, data was obtained through a third party. The data comprised 262 law enforcement officials across the U.S. Data and results obtained from this survey helped further refine the learning objectives for this informational video. Areas that responders expressed a need for more detail during initial training included railroad incident response, incident investigation, jurisdiction, and securing the scene of an accident. Seventy-nine percent of this group indicated they had not received any refresher training in responding to a railroad emergency. When asked if the person would benefit from a refresher course, 88 percent endorsed the concept. These officers selected the type of additional training that would enhance their abilities to deal with a railroad incident. Multiple selections were enabled for this question. Popular venues included formal classroom instruction (68.7 percent), online courses (58.7 percent), on-the-job training (48.2 percent), and online videos (45.5 percent).

Figure 2

Based on the approved learning objectives, QNA developed an outline of the video content which was submitted to and approved by the FRA. The approved outline was expanded into a storyboard with detailed script. The purpose of this exercise was to provide specific content suggestions for the video. Based on an initial assessment of the training needs and on the team's expertise, QNA prepared all content for an online video. This allows the video to be available and accessible as a stand-alone training. The video can be downloaded and watched by law enforcement during breaks or between shifts.

For the video content, QNA utilized visual aids, animations, and video footage from other sources. Filming occurred over several months and involved using law enforcement as the talent. This allowed for the content to be delivered in the tone and language common to law enforcement. In developing the training, QNA followed human factors guidelines and training best practices. For example, research has shown that students retain the most content from the first and last 5 minutes of a training class. Keeping this principle in mind, the key learning points were repeated as a summary in the last 5 minutes to help maximize knowledge retention.

Once the course materials were developed, FRA reviewed and provided comments and suggested edits. QNA adopted these changes into the revised video. Once the initial draft of video was finalized, QNA solicited feedback from railroad and law enforcement representatives.

RESULTS

Assessment of the Video's Effectiveness: The pilot program involved distributing the video to law enforcement personnel and assessing their knowledge transfer after viewing the video. This process assisted the team in identifying the elements of the video which meet and satisfy the specified learning objectives. To specifically evaluate the effectiveness of the video, railroad

knowledge was assessed as a pre-assessment and then later examined for any improvements in railroad knowledge after viewing the online video.

For the pre-assessment, the following questions were asked.

1. On average, how frequently is a trespasser or motor vehicle struck by a train in the United States?
2. What are the most common causes of emergencies involving trains?
3. What is the typical stopping distance for a freight train traveling at 55 mph?
4. What are some potential complications you may encounter when responding to a call involving the railroad?
5. In what situation do emergency responders have right-of-way over trains?
6. When should you or your dispatcher contact the railroads?
7. What do you need to do to stop oncoming train traffic?
8. What is a USDOT number?
9. What are some key safety guidelines you should observe when responding to an incident involving the railroad?
10. Select all attributes associated with the train crew.
11. What are some proactive and active approaches you can take to reduce railroad emergencies?
12. Where can you find pertinent information to help you prepare for a railroad emergency?

Figure 3

Errors occurred on Question #3, #5, #6, #7, #8, #10, and #12. After viewing the video, law enforcement personnel had a significant improvement in knowledge transfer. Questions with errors in the pre-assessment were not evident in the post-assessment.

CONCLUSIONS

Once the video was finalized with edits and revision from all relevant stakeholders, FRA published the video on its website for all law enforcement to access. In addition to the video, DVDs were made available upon request.

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