Some people are very familiar with it while others do not have a clue what it is or how to use it. It is found across the nation in almost every emergency communications center, police car, fire truck and ambulance. It’s a little orange book the size of a dessert plate. Yes, it is the Department of Transportation (DOT), Pipeline and Hazardous Materials Safety Administration’s (PHMSA) Emergency Response Guidebook (ERG).

The ERG was created as a tool to help 9-1-1 telecommunicators, firefighters, law enforcement officers, medical personnel and other first responders quickly identify the hazards present in emergencies involving hazardous material to protect themselves and the public.

The ERG is updated every four years and is available free to first responders. The current edition was released in 2016.

Each day in the United States there are at least 1 million shipments of hazardous material. Also, 2.5 million miles of gas and liquid pipeline run through our jurisdictions. The likelihood of dealing with a hazardous material incident in your jurisdiction is very high.

Pre-planning is always the best course of action when dealing with hazardous material. Part of pre-planning involves learning how...
to use the ERG quickly and efficiently. The first 30 minutes — the “initial phase” — of a hazmat incident are crucial. It’s vital to pass along the precautions needed in the initial phase to the first responders in the field and citizens calling in from the area of the incident. Quickly identifying the chemicals involved in the incident will save lives.

So how can telecommunicators use the ERG in a communications center? Let’s say a 9-1-1 caller takes a 9-1-1 call at 2:40 a.m., and the caller states there has been a train wreck. While pinpointing the area of the wreck the caller says “I smell smoke, I have to get out of here.” The caller also states the train wreck is right beside a mill where several people are working the night shift. Within a few minutes, all the 9-1-1 phones light up with more than 100 calls. Some callers are reporting the train wreck while others are reporting a low-lying fog or a leaking yellow substance. Moreover, the majority of the callers are complaining of coughing and difficulty breathing.

In this scenario, the call taker acquired four critical descriptions; the type of vehicle, low-lying fog, a leaking yellow substance and people experiencing breathing problems. Based on this information, it is apparent that this incident involves hazardous material. Without a known placard sign, shipping information or the exact name of the chemical, the telecommunicator is limited as to the actions that can be taken. But, two things are clear. Never advise a caller to go to check for a placard number and always advise first responders to take precautions as chemicals may be involved.

Whenever information is missing and the chemical cannot be identified, refer to Guide 111 in the orange section of the ERG until more information is available that will identify the chemical. The flowchart in Figure 1 (also available in the ERG 2016 Guidebook) will guide the telecommunicator through the process.

Continuing with the scenario, the first responder arrives on the scene and notices a man standing on the railroad tracks and another man lying on the ground. As the first responder begins to approach both gentlemen the guy standing advises there was a chemical leak and he cannot breathe. The first responder is overcome by the odor, turns around and drives a half-mile down the street to clean air. At this time, the first responder calls in to dispatch and advises he needs a major evacuation, and he and others could not breathe when near the source of the leak.

The communications center must initiate an evacuation of the area. How far and wide of the area should the evacuation extend? Not knowing what chemical has leaked the telecommunicator follows Guide 111 in the ERG, which stipulates that the evacuation area should be a half-mile in all directions.

Does your communications center have the ability to evacuate residents quickly? Has the system been tested in an exercise?

What do you advise citizens to do — stay where they are or leave the area? Depending on the situation, either of these actions can put the caller at risk of being harmed by the chemical. Remember that it is always better to advise the caller to position themselves upwind or uphill and to stay clear of vapors, fumes and spills.

In addition to the evacuation, the communications center will be tasked with multiple notifications such as those to the National Response Center (NRC), mutual aid...
agencies, hazmat teams, emergency management agencies, state health and environmental agencies, and the railroad company dispatch to name a few. Where is the contact information for these agencies? The ERG book provides blank emergency notification pages for you to add these numbers, which allows for easy access and provides all the information in one place.

The railroad company dispatcher advises the 9-1-1 communications center of the contents of the train cars: chlorine, sodium hydroxide, kaolin, particle board and coiled steel. Which of the chemicals on this list match the descriptions given by the callers and first responder on the scene? The answer is in the blue section of the ERG, the same place the communications center looked for it. The answer is chlorine. The book has chlorine highlighted in green, which indicates the chemical is a toxic inhalation hazard. Looking in the green section of the ERG will provide information about initial isolation and protective action distances and water-reactive material, which produces gases.

Now that the chemical has been identified and the hazards and precautions are known the rescue and clean-up can start.

Remember, always begin with the yellow or blue section in the ERG. This will guide you to the orange section. The orange section is the ultimate goal. If the UN number is known then go to the yellow section; If the name of the chemical is known then go to the blue section. If either of these is a highlighted entry, it indicates a toxic inhalation hazard. The critical actions to take in any chemical incident are to assess the situation, identify the hazards and secure the scene.

The above is an actual event that occurred in Graniteville, South Carolina, on January 6, 2005. Two locomotives with 42 railcars collided. One train was empty and stationary on the track, and the other was traveling approximately 47 miles per hour when it crashed into the stationary train. Forty-seven tons of chlorine immediately leaked out of the railcar, and 14 more tons leaked out in the next three days. The wreck occurred on the property of a local mill where approximately 185 employees were working. Some employees were trapped in the mill for several hours. Unfortunately, nine people died of inhalation effects from the chlorine.

David White, chairman of Industrial Fire World, said it best during a training session on lessons learned from the Graniteville train wreck: “This is the real world. This is what you’re going to face, and you better be ready to accept the challenges if you pin that badge on that says, ‘I am an emergency responder, and I will be there.’”

Sheila Hanna is the Education and Training Administrator for APCO Institute. Prior to joining APCO International, she worked as a 9-1-1 coordinator, trainer, QA, call taker and dispatcher. This year Sheila will celebrate 20 years of service in public safety.

References:
1 https://www.google.com/search?q=graniteville+train+wreck+picture&source=lnms&tbm=isch&sa=X&ved=0ahUKEwiRqP2HsnILcAhWydAaHbYHbAI4UAIgCCbwiw1920&bih=989#imgrc=rArBtwoZZoZZIC:
4 https://vimeo.com/115816772
5 https://www.southcarolinaradionetwork.com/2015/01/06/we-couldnt-breathe-the-graniteville-train-derailment-a-decade-later/
6 https://environmentalchemistry.com/yogi/hazmat/erg/erg/gn/111.html
1. How often is the ERG guidebook updated?
   a. Every year
   b. Every four years
   c. Every five years
   d. Every ten years

2. The current edition of the ERG is?
   a. 2008 Edition
   b. 2018 Edition
   c. 2016 Edition
   d. 2006 Edition

3. Which section in the ERG guidebook would you use if you were looking up the United Nations (UN) number?
   a. White
   b. Yellow
   c. Blue
   d. Orange
   e. Green

4. What section in the ERG guidebook would you use to get information on hazards, emergency response actions, PPE, evacuation distances, spill and fire control and first aid?
   a. White
   b. Yellow
   c. Blue
   d. Orange
   e. Green

5. What section in the ERG guidebook would you use when you have the name of a chemical?
   a. White
   b. Yellow
   c. Blue
   d. Orange
   e. Green

6. If the chemical name and UN number are unknown, what guide in the ERG book should you use?
   a. Guide 124
   b. Guide 128
   c. Guide 111
   d. Guide 200

7. It is highly recommended to advise callers in a chemical incident to stay where they are and not to leave.
   a. True
   b. False

8. A green highlight entry in the ERG book indicates toxic inhalation hazard.
   a. True
   b. False

9. The critical steps during any chemical incident are to assess the situation, identify the hazards and secure the scene.
   a. True
   b. False

10. The scenario used in the article is amplified and could never happen in real life.
    a. True
    b. False

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