

Hazardous Materials Automated Cargo Communication for Efficient and Safe Shipments (HM-ACCESS)

Synopsis: Emergency Responder Efforts

Stakeholder Group

The emergency responder stakeholder group includes:

- Public service answering points (PSAPs),
- Firefighting officials,
- Emergency medical service (EMS) providers, and
- Private companies that provide emergency response-related services and information for incidents involving hazardous materials (HM).

PSAP personnel training and professional experiences regarding HM vary greatly. Most PSAP personnel are not familiar with the look and content of a hazardous materials (HM) shipping paper, and those at small rural PSAPs may not know about placarding information.

Feedback and Opinions

Specific HM information is needed immediately by PSAP dispatchers and first responders; the information in this section is the minimum HM information fields that need to be included in any e-HM communication used for emergency response purposes.

PSAP dispatchers initially ask callers for a variety of situational information, including:

- The incident location.
- Incident and logistical/environmental/sensory details (e.g., “what’s the emergency,” what’s happening around you,” “what do you smell/hear/see,” etc.).
- Placard information on vehicle.
- Name and quantity of products, including HM, involved in the incident.
- Manifest information.
- Caller’s callback number.
- Driver’s name and contact information.
- Truck and trailer information (e.g., number) and condition.

On-scene first responders need, or prefer to have, the following HM information immediately:

- Basic description of the HM (boiling point, density, specific gravity, etc.).
- Technical and proper shipping name of the HM.
- Immediate hazards to health (threshold limit value and immediately dangerous to life and health information).
- Risks of fire or explosion.
- Immediate precautions to be taken in the event of an accident or incident.
- Immediate methods for handling fires, spills, or leaks.
- Preliminary first aid measures.
- UN identification number.
- Hazard class or division number.
- Packing group.
- Emergency contact telephone number.
- The truck and trailer numbers.

The PSAPs and first responders shared the following information regarding electronic-HM (e-HM) communication:

- E-HM communication needs to be scalable, to provide different levels of information to the entities (police, fire, dispatch, EMS, etc.) who need the information.
- It is important to have layered and redundant systems (i.e., both hardcopy and electronic).
- While response personnel need information quickly, they prefer to receive accurate information versus immediate unverified/non-factual information.
- Pulling,” rather than “pushing,” information is better for emergency responders. They prefer a system where they could go to get information they need when they need it.
- For first responder purposes, e-HM information needs to have the capability to be sent to an IP address.
- E-HM information needs to be arranged and provided in a standard, specified format, with exact fields for entering specific information about each HM. In addition, adding the HM’s trade name as a required shipping paper field would be helpful to first responders.

Private companies, such as CHEMTREC and Operation Respond Institute (ORI), provide HM information services to emergency responders. CHEMTREC is a public service hotline for emergency responders to obtain information and assistance for emergency incidents involving chemicals and HM. For the approximately 1.2 million daily HM shipments in the US, CHEMTREC receives an average of 325 calls, about 125 of which are HM incidents; these calls are generally made by shippers and carriers.

ORI developed the Operation Respond Emergency Information System (OREIS™), a software program that connects vetted emergency responders directly to a Class I rail carrier’s files electronically to identify whether or not HM are being transported on a specific railcar. If HM are present, OREIS™ provides a verification of the contents and initial guidance as to the appropriate response. The HM data resides in each rail carrier’s individual company system and is based on electronic data interchange (EDI) format. Electronic updates to the “consist” (i.e., the specific location of the railcar in the train) only occur when a train passes an automatic equipment identification (AEI) reader. Train crews maintain an accurate hardcopy of the consist at all times.

Concerns, Gaps, and Vulnerabilities

Some rural area PSAPs and emergency responders, and some small PSAPs and volunteer responders, do not have access to Broadband, and some are in areas with limited internet connectivity; obtaining HM information electronically and in a timely manner under these conditions will be difficult. In addition, many of these entities are at least five to ten years away from having the needed funding to move toward electronic data collection. Data reception must have next generation component, and associated equipment must be converted to digital.

First responder capabilities regarding access to electronic information varies. While some fire organizations may be able to get e-HM information directly from on-board equipment, most fire organizations do not have such capabilities, and rely on the PSAPs to convey the needed information to them. In addition, some of the firefighter population will need training to learn how to use available electronic tools for e-HM communication.

Obtaining information on the quantity, packaging, and manufacturer, especially for mixed and less than truckload (LTL) loads (where they would normally go to the manufacturer for specific HM information), may be a constraint to an e-HM system.

A “visual link” currently exists between the conveyance and the hardcopy shipping paper (i.e., the paper is on the vehicle). A link between the conveyance and the e-HM shipping papers will need to be identified for an e-HM system to work for the emergency response community.

The emergency response community also shared the following challenges associated with current HM product and shipping paper information:

- A “many-to-one” relationship between trade names and proper shipping name exists.
- Products with the same proper shipping name may have different response requirements.
- MSDS data is rarely titled and/or indexed by proper shipping name or technical name.
- Trade name information may not be transmitted, retained, mapped, and/or captured in the transfer of electronic data interchange (EDI) data across networks.
- Trade name information may not be readily apparent to responder or caller even if it is shown on the shipping documents.
- Shipping documents are often complex, and the lack of a standardized form and field layout adds confusion. Because most callers who place emergency calls are not familiar with shipping documents and HM information, many are confused about providing the requested information to emergency responders.
- Better information on defining and distinguishing the shipper and the carrier is needed.
- Having too much information is almost as bad as having too little.