

# **Information Paper on Hazardous Materials Automated Cargo Communications for Efficient and Safe Shipments (HM-ACCESS): Electronic Shipping Papers for Emergency Response Providers and Law Enforcement Personnel**

## **Background**

For several years, the hazardous material (HM) transportation community has invested in developing and implementing internal electronic systems to meet business needs and the growing demands of global transportation. Advancements have accordingly been made in both domestic and international electronic communication (e-communication) and electronic commerce. Moreover, the United Nations (UN) Model regulations incorporate recommendations for the use of electronic shipping papers (e-shipping papers). Creating a transportation environment without e-communication boundaries improves global harmonization and promotes performance-based electronic systems that strive to provide an equivalent or better level of safety to the current HM hardcopy shipping paper requirement.

## **Introduction to HM-ACCESS**

HM-ACCESS is a pilot project under the Moving Ahead for Progress in the 21st Century Act (MAP-21). The Pipeline and Hazardous Materials Safety Administration's (PHMSA's) Office of Hazardous Materials Safety (OHMS) is collaborating with modal administrations, law enforcement, emergency response providers, and industry representatives to evaluate the feasibility and effectiveness of allowing the use of paperless HM (e-HM) communications systems (e-systems) for HM shipments to:

- Improve the availability and accuracy of hazard and response information for shipments and packages;
- Improve the speed by which information is available to emergency responders when accidents occur;
- Improve the security of imported containers through better knowledge of shipments and reduced potential for diversion; and
- Allow U.S. companies to compete more effectively in the global economy by using the best tools available.

Based on interactive dialogues, information was gathered to determine the needs of stakeholders: shippers, carriers, emergency response providers, and law enforcement. Workshops were held with these stakeholders on September 27-28, 2012 to receive feedback on the information compiled thus far in synopsis papers, and to identify concerns, gaps, and vulnerabilities not previously discovered. The following are the results of the research conducted to date, including a prioritization of those issues.

## **Description of Stakeholders**

Emergency response providers require immediate access to HM shipping papers to identify the HM involved in an incident and to implement appropriate response mitigation actions. Law enforcement personnel use HM shipping papers as part of an inspection or investigation to determine compliance with applicable regulations. Carriers are required to provide shipping papers upon request. HM shipping papers may be requested immediately, or in advance of an inspection.

## **Emergency Response Providers and Law Enforcement Personnel Feedback and Opinions**

Emergency response providers and law enforcement personnel stated that e-systems must be:

- Scalable, to provide different levels of information to entities (police, fire, dispatch, EMS, etc.);
- Layered and redundant, available in both hardcopy and electronic; and
- Transmittable via Internet Protocol (IP) addresses.

Besides obtaining situational information from callers to Public Service Answering Points (PSAPs), emergency response providers indicated a need or preference to have the following HM information available:

- UN identification number;
- Hazard class or division number; packing group; and the 24-hour emergency contact telephone number;
- HM-specific information (boiling point, density, specific gravity, etc.);
- Technical and proper shipping name;
- Immediate hazards to health, fire, or explosion risks;
- Immediate precautions to be taken in the event of an accident or incident;
- Immediate methods for handling fires, spills, or leaks; and
- Preliminary first aid measures.

Both emergency response providers and law enforcement personnel recommended engaging the international community, and suggested linking e-shipping papers to the hardcopy.

According to law enforcement personnel, approximately 25 percent of motor carrier inspections are completed in hardcopy. An e-system in the future that provides shipping paper information instantaneously and as one record during an inspection (e.g., on a tablet provided by the driver) would be acceptable to most inspectors.

Motor carrier law enforcement personnel expressed a preference for a technologically flexible, performance standard versus a mandated system. Most inspectors who perform motor vehicle inspections on a routine basis have computers. Those performing inspections less frequently typically document results on hardcopy inspection forms.

The U. S. Coast Guard (USCG) reported that HM shipping papers required by container inspectors are available from the yard/terminal office at most small and some medium ports. That is, hardcopies are provided directly from the port's office to the inspector at smaller ports. At medium ports, a copy of the shipping paper is sent via email; the office prints a copy for USCG inspectors. At large ports, HM shipping papers are provided for exports. Import HM shipping papers are not obtained by the ports. An e-system would add convenience by allowing inspectors direct access to the information and reduce wait time, which can be up to 48 hours at some ports.

## **Emergency Response Providers and Law Enforcement Personnel Concerns, Gaps, and Vulnerabilities**

Collectively, emergency response providers and law enforcement personnel discussed uploading electronic data directly into inspection systems. During this discussion, stakeholders identified the following considerations:

- Too much information can be detrimental (i.e., information other than what is required under 49 Code of Federal Regulations Subpart C may result in response delay);
- The volume of data could become unmanageable leading to capacity limitations such as bandwidth and storage;
- Equipment and data are not standardized;
- There would be a need for back-up system(s);

- New devices for receiving e-HM information must be acquired;
- Whether or not the government has access to, or collects, the data;
- Inaccurate and missing information in the paper-based system could be carried over to an electronic system;
- Inconsistencies between the shipment and the HM shipping paper;
- Emergency response providers and law enforcement personnel in rural, remote, and geographically challenging areas for e-communication;
- Some small/volunteer departments have limited internet connectivity or no wireless capability.

Additional discussion items included:

Stakeholders discussed difficulties with identifying the shipper during intermodal shipments, when multiple carriers are involved with the shipment. Consequently, stakeholders proposed to better identify the shipper from the carrier on shipping papers.

Stakeholders communicated that currently there is a “visual link” between the conveyance and the hardcopy shipping paper (i.e., the paper in the vehicle). For an e-system to be successful, a link should be created between the conveyance and the e-system.

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

Stakeholders also expressed that shipping documents are often complex, and a standardized format is necessary. The inclusion of the HM’s trade name as a required shipping paper field would also be helpful, as it may not be apparent to the user that the name of the material on the shipping document is a trade name, causing emergency response or inspection delays. Further, stakeholders reported that there is a many-to-one relationship between trade names and proper shipping names, which may cause confusion if there are different response procedures for products having the same proper shipping name.

Throughout the motor carrier inspection community, devices and data are not standardized. For violations associated with inconsistencies between the shipment and shipping paper, these inspectors stated that they should be provided a copy of the shipping paper for documentation purposes.

USCG inspectors stated: (1) they do not possess the ability to access electronic documents from the field, and there are no plans to create this capability as security concerns outweigh the benefits; (2) a choice between hardcopy and e-shipping papers may lead to confusion regarding how to obtain the documents from the ports; and (3) there is confusion about when international shipment data would be made available in transport when using an e-system.

### **Top Considerations and Gaps**

PHMSA aggregated similar considerations and gaps; then, PHMSA identified the top issues in each of two information papers, for emergency responders/law enforcement personnel (this paper) and for shippers/carriers, respectively. The goal of this prioritization is to identify the key considerations and gaps that must be addressed to ensure the successful implementation of e-systems.

The top considerations and gaps for emergency response providers and law enforcement personnel are:

#### Considerations

- HM information must be scalable (i.e., information should fit the intended need);
- Shipping paper information should be provided in a standard, specific format;
- Electronic information should be immediately available during an emergency response, if possible, but always accurate;
- Paperless communication should be regulated by means of a performance standard approach;
- Electronic shipping paper information should be capable of being instantaneously viewed during an inspection; and
- Electronic information should reduce inspectors' wait time.

#### Gaps

- There is a lack of training on available electronic tools;
- Too much information can be detrimental (i.e. information other than what is required under 49, CFR Subpart C may result in response delay);
- Multiple trade names to one proper shipping name exist;
- Equipment and data are not standardized;
- Accessibility to receive e-HM information, availability of equipment, and connectivity dead zones are limiters; and
- New devices for receiving e-HM information must be acquired.

#### **Common E-System Requirements among All Stakeholders**

Common requirements for the implementation of e-shipping papers identified by shippers, carriers, emergency response providers, and law enforcement personnel are:

- Equivalent or higher level of safety to current requirements;
- Internationally harmonized and uniformed information;
- Secured from unauthorized access;
- Capable of allowing shippers to be responsible for data entry and error correction;
- Cost-effective;
- Able to allow e-shipping papers to be accessible through wireless capabilities; and
- Protect commercially-sensitive information.

#### **Summary**

The use of e-communication will continue to grow in all sectors, including transportation. PHMSA understands that emergency response providers, law enforcement personnel, shippers, and carriers are critical stakeholders in helping to ensure that safety remains paramount in the use of e-systems for the transportation of HM.

This paper outlines the issues and challenges identified and prioritized by emergency response providers and law enforcement personnel that must be taken into account and tested in any e-HM communication pilot program. Coupled with the results of a similar paper on shipper and carrier feedback, these findings take PHMSA closer towards developing the parameters of the HM-ACCESS test program under MAP-21.