

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

Introduction

HM-ACCESS is a pilot project under the Moving Ahead for Progress in the 21st Century (MAP-21) legislation. The Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Hazardous Materials Safety (OHMS), is collaborating with modal administrations, law enforcement personnel, emergency response provider organizations, and industry representatives to evaluate the feasibility of allowing the use of electronic shipping (e-shipping) papers for hazardous materials (HM) shipments for the purpose of:

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

Interviews were held and comments solicited to determine the needs of all the effected stakeholders (shippers, carriers, emergency response providers, and law enforcement). Additionally, workshops were held for the stakeholders on September 27-28, 2012, to receive feedback on synopsis papers, and identify priority issues, gaps, and concerns not previously discovered during the interviews. In January 2013, OHMS held a roundtable discussion with the Commercial Motor Vehicle Safety Alliance's HM Committee in Biloxi, Mississippi to obtain additional law enforcement perspectives for the implementation of e-shipping papers. The following are the results of the research conducted to date.

Description of Stakeholders

Emergency response providers require immediate access to HM shipping papers to identify the HM involved in the incident and implement appropriate response mitigation actions. Law enforcement personnel use HM shipping papers as a part of an inspection or investigation to determine compliance with applicable regulations. 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-HM communication systems (e-system) 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.

Aside from the situational information asked of callers by Public Service Answering Points (PSAPs), emergency response providers indicated the need for, or preference to have, the following HM information readily available for emergency response purposes:

- 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.

The inclusion of the HM's trade name as a required shipping paper field also would be helpful.

Emergency response providers and law enforcement personnel recommended engaging the international community and suggested linking e-shipping papers to the hard copy.

According to law enforcement personnel, approximately 25 percent of inspections are completed in hardcopy. An e-system 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 prefer 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.

HM shipping papers required by U. S. Coast Guard (USCG) container inspectors at most small and some medium ports are available from the yard/terminal office. An e-HM 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.

At large ports HM shipping papers are provided for exports. Import HM shipping papers are not obtained by the ports. At medium ports, a copy of the shipping paper is sent via e-mail. The office prints a copy for USCG inspectors. At smaller ports, hardcopies are provided directly from the port's office to the inspector.

Emergency First Response 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 CFR, 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,

- Could/should the government have access to the data or collect the data?,
- Inaccurate and missing information experienced in the paper-based system could be carried over to an electronic system,
- Inconsistencies between the shipment and the HM shipping paper, and
- Emergency response providers and law enforcement personnel in rural, remote, and geographically challenging areas; and some small/volunteer departments have limited Internet connectivity or no wireless capability.

Additional discussion items include:

Stakeholders discussed their difficulties with identifying the shipper during intermodal shipments and when multiple carriers were involved with the shipment. 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-HM system.

It was expressed that shipping documents often are complex, and a standardized format is necessary. It was proposed to attempt to better identify the shipper from the carrier on shipping papers. The inclusion of the HM’s trade name as a required shipping paper field also was proposed, but trade name information is not always transmitted, retained, mapped, and captured in the transfer of electronic data interchange (EDI). Additionally, it may not be apparent to the user that the name of the material on the shipping document is a trade name, thus causing emergency response or inspection delays.

Devices and data are not standardized throughout the motor carrier inspection community. For violations associated with inconsistencies between the shipment and shipping paper, motor carrier inspectors stated 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) confusion regarding 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, identified the top issues in each of two information papers, for emergency responders/law enforcement personnel 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 paperless HM communication.

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,
- 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 HM-ACCESS Results 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 potential threats,
- Capable of allowing shippers to be responsible for data entry and error correction;
- Cost effective, and
- Able to allow e-shipping papers to be accessible through wireless capabilities.

Summary

Advancements have been made in e-HM communication domestically and internationally, and the HM community has invested in and implemented internal systems to meet business needs and demands of global transportation to improve e-communication and e-commerce. Some stakeholders, including the International Air Transport Association and the United Parcel Service, are in the early stages of demonstrating proof of concepts to examine the use of e-shipping papers. Further, the UN Model regulations incorporate the use of e-shipping papers. All stakeholders are taking strides to create a transportation environment that does not have e-communication boundaries, improves global harmonization, and creates performance-based systems that are striving to provide an equivalent or better level of safety to the current paper requirements.

PHMSA understands that shippers, carriers, emergency response providers, and law enforcement personnel are critical stakeholders for HM-ACCESS, and providing an equivalent or better level of safety to shipping regulations must be tested and accounted for during the pilot program. The issues and challenges identified in this paper serve as the initial steps toward identifying parameters of the pilot provided for by MAP-21.