



What You Should Know:

A Guide To Developing A Hazardous Materials Training Program



U.S. Department
of Transportation
**Pipeline and
Hazardous Materials
Safety Administration**

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PURPOSE AND SCOPE

The transportation of hazardous materials (hazmat) underpins the American economy and our way of life. We use oil and natural gas to heat and cool homes and businesses, produce electricity, and provide raw materials for plastics, fibers, paints, and other essential products. We rely on chemicals to clean our water, fuel cars, construct buildings, fertilize crops, create medicines, and manufacture clothing and many other essential commodities. However, while hazmat plays a critical role in our daily lives, the transportation of hazmat introduces some inherent risks to the public, the environment, and property that need to be appropriately managed.

This guidance document explains the training requirements in the Hazardous Materials Regulations, identifies those employees who must be trained, and provides a tool to help hazmat employers determine what type of training and training environment may be best for their employees.

Hazardous materials transportation is a process that involves people performing functions related to handling, packaging, storing, moving, loading and unloading of hazardous materials, and responding to emergency situations while such materials are in transportation. It includes employees responsible for the safe transportation hazmat. The process also incorporates functions to design, manufacture, fabricate, inspect, mark, maintain, recondition, repair, or test a package, container or packaging component used in transporting hazardous materials. With such a complex process, the United States Department of Transportation (DOT) has identified human error as a contributing cause for most hazmat transportation incidents.

Human error may result from a variety of factors including:

- Lack of knowledge leading to the mishandling of hazmat
- Lack of knowledge leading to undeclared shipments
- Lack of awareness that hazmat is present
- Failure to follow established safety procedures
- Lack of understanding of one's role during an incident should one occur
- Lack of knowledge on how to respond to an incident if one occurs

Hazmat incidents caused by human error can be reduced through the implementation of an effective training program. An effective training program is a systematic method for providing training, which includes tests and quizzes. It may consist of materials such as handouts, overheads, videos, and exercises, as well as, interactive computer based training, tests and quizzes and, where there is an instructor, the instructor's notes or course outline. The training program may be a tutored or self-study course. The training provider may be the hazmat employer or an independent training provider.

An effective training program:

- Develops a strong safety culture
- Heightens employee safety by helping employees protect themselves
- Improves a company's effectiveness, efficiency, and productivity
- Increases employee skills
- May prevent regulatory sanctions
- Aids in ensuring safe and secure shipments of hazardous materials
- Reduces likelihood of catastrophic event such as fire aboard aircraft
- Provides employees with understanding of why compliance and safety are necessary

HAZARDOUS MATERIALS REGULATORY REQUIREMENTS

WHAT THE HAZARDOUS MATERIALS REGULATIONS REQUIRE

The Hazardous Materials Regulations (HMR; 49 CFR Parts 100-185), issued by the Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) under authority of the Federal hazardous materials transportation law (49 U.S.C. 5101 et seq.), establish requirements governing the commercial transportation of hazmat by highway, rail, vessel, and air.



Under the HMR, hazardous materials are categorized by analysis and experience and assigned hazard classes and packing groups based upon the risks they present during transportation. The HMR specify appropriate packaging and handling requirements for hazardous materials, and require a shipper to communicate the material's hazards through use of shipping papers, package marking and labeling, and vehicle placarding. The HMR also require shippers to provide emergency response information applicable to the specific hazard or hazards of the material being transported.

THE HAZARDOUS MATERIALS REGULATIONS' TRAINING REQUIREMENTS

The HMR mandate training requirements for persons who prepare hazmat for shipment or who transport hazmat in commerce. The intent of the regulations is to ensure that each hazmat employee is familiar with the HMR, is able to recognize and identify hazardous materials, understands the specific HMR requirements applicable to the functions he or she performs, and is knowledgeable about emergency response, self-protection measures, and accident prevention methods. The regulations are performance based to provide a baseline set of training requirements while acknowledging the need for flexibility due to the diversity of the hazmat workforce.

Training requirements are located in Subpart H of Part 172 of the HMR. The training requirements apply to hazmat employers and hazmat employees as defined in §171.8.

The HMR require all hazmat employees to be trained including hazmat employers with direct supervision of hazmat transportation functions.



Hazmat employer and hazmat employee are defined as follows:

HAZMAT EMPLOYER means a person who uses one or more employees in connection with:

- transporting hazmat in commerce;
- causing hazmat to be transported or shipped in commerce; or
- representing, marking, certifying, selling, offering, reconditioning, testing, repairing, or modifying packagings as qualified for use in the transportation of hazmat.

The term “hazmat employer” also includes any department, agency, or instrumentality of the United States, a State, a political subdivision of a State, or an Indian tribe engaged in offering or transporting hazmat in commerce. This term includes an owner-operator of a motor vehicle which transports hazardous materials in commerce.

HAZMAT EMPLOYEE means a person who is employed by a hazmat employer and who directly affects hazmat transportation safety including:

- an owner-operator of a motor vehicle which transports hazmat;
- a person (including a self-employed person) who:
 - loads, unloads, or handles hazmat;
 - tests, reconditions, repairs, modifies, marks, or otherwise represents packagings as qualified for use in the transportation of hazmat;
 - prepares hazmat for transportation;
 - is responsible for safety of transporting hazmat; or
 - operates a vehicle used to transport hazmat.

Note: See the Glossary or 49 CFR §171.8 for complete definitions.

Training must be completed within 90 days of the first day of employment or the first day of a change in job function. Until training is completed, a hazmat employee must be directly supervised by a person who has been trained. Further, each hazmat employee must be provided with recurrent training at least once every three years. Each hazmat employee must be tested upon completion of training. Training may be provided directly by the hazmat employer or by other public or private sources. Regardless of who provides the training, the hazmat employer is responsible for ensuring that appropriate testing occurs and that the training is effective, appropriate, and successful in achieving the intended objectives of providing employees with the knowledge and skills necessary to perform their job functions safely.

THE FIVE TYPES OF TRAINING REQUIRED

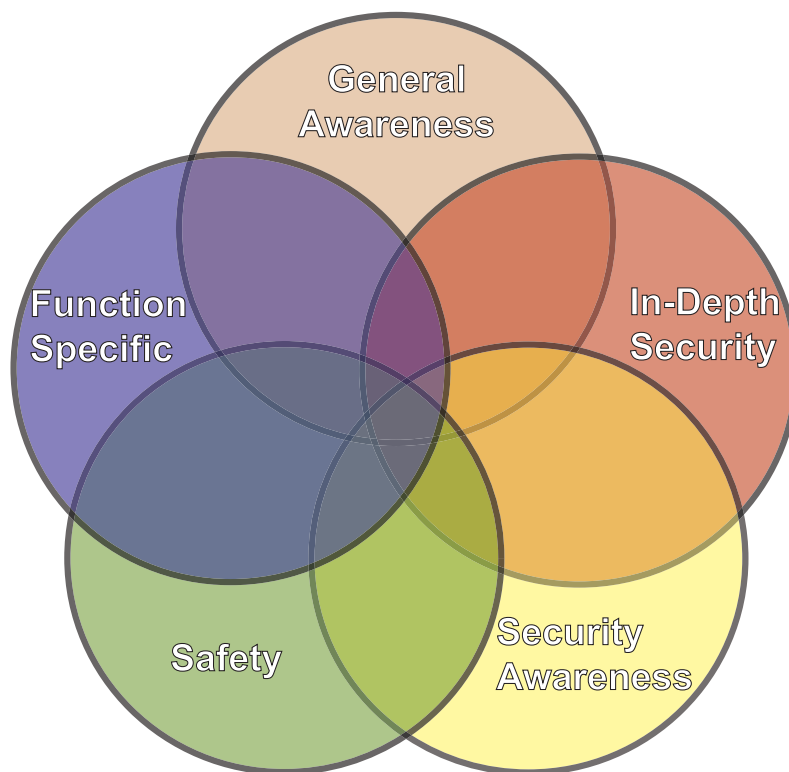
GENERAL AWARENESS/FAMILIARIZATION TRAINING: Training that provides familiarity with the general requirements of the HMR and enables the hazmat employee to recognize and identify hazardous materials. All hazmat employees must receive general awareness training.

FUNCTION-SPECIFIC TRAINING: Training that provides a detailed understanding of HMR requirements applicable to the function(s) performed by the hazmat employee. Each hazmat employee must be trained on the specific functions they are required to perform.

SAFETY TRAINING: Training that covers the hazards presented by hazardous materials, safe handling, emergency response information, and methods and procedures for accident avoidance. All hazmat employees must receive this training.

SECURITY AWARENESS TRAINING: Training that provides a general understanding of the security risks associated with hazardous materials transportation and the methods designed to enhance transportation security. This training should include methods on how to recognize and respond to possible security threats. All hazmat employees must receive this training.

IN-DEPTH SECURITY TRAINING: Training that provides a detailed understanding of a company's security plan including company security objectives, specific security procedures, employee responsibilities, actions to take in the event of a security breach and the organizational security structure. This training must be provided to hazmat employees who handle or perform regulated functions related to the transportation of the materials covered by the security plan or who are responsible for implementing the security plan.



RECORDKEEPING REQUIREMENTS

The hazmat employer is responsible for maintaining training records for each hazmat employee. These records must be kept for the duration of the three-year training cycle while the hazmat employee is employed and for 90 days after the employee leaves employment. Training records must be made available by the employer for audit and review by regulatory authorities upon request.

Training records must include the following:

- The hazmat employee's name
- The most recent training completion date
- A description of, copy of, or reference to training materials used to meet the training requirements
- The name and address of the person providing the training
- A certification that the person has been trained and tested as required



Certification that the hazmat employee has been trained and tested shall be made by the hazmat employer or a designated representative. *An example training record can be found in the “Helpful Tips and Tools” section.*

OTHER DOMESTIC AND INTERNATIONAL TRAINING REQUIREMENTS

Employers should be aware that the HMR recognizes that other domestic and international agencies and organizations also have training requirements. For example, the Federal Aviation Administration prescribes training requirements for air carriers in the 14 CFR. Additionally, the International Maritime Dangerous Goods Code for vessel shipments; Transport Canada TDG Regulations; and the International Civil Aviation Organization Technical Instructions for air shipments also prescribe specific training requirements which are important because the HMR authorizes compliance with these regulations. Therefore, depending on a company's operations, other training requirements in addition to the HMR may apply.

Relevant agencies and organizations may include:

- United States Federal Aviation Administration (FAA)
- United States Federal Motor Carrier Safety Administration (FMCSA)
- United States Federal Railroad Administration (FRA)
- United States Coast Guard (USCG)
- United States Occupational Safety and Health Administration (OSHA)
- United States Environmental Protection Agency (EPA)
- Transport Canada TDG regulations (TDG)
- International Maritime Organization (IMO)
- International Civil Aviation Organization (ICAO)

HOW TO BEGIN

DETERMINE WHO YOUR HAZMAT EMPLOYEES ARE

Safe transportation of hazardous materials depends on proper preparation of the material for shipment and safe handling of the material while it is being transported. Each hazmat employee must be aware of the hazards of such materials, their potential for causing incidents and accidents, and how they should be safely prepared and transported.

To this end, the HMR require all hazmat employees to be trained, including those with hazmat responsibilities including pre-transportation functions (See Glossary or 49 CFR §171.8) and those who supervise hazmat employees. For example, a hazmat employee may be a person (including a self-employed person or an owner-operator of a motor vehicle) who:

- Determines the hazard class of a hazardous material
- Selects a hazardous materials packaging
- Places warning signs, blocks wheels, and sets brakes on tank cars placed for loading or unloading with closures open
- Fills or loads a hazardous materials packaging
- Secures a closure on a filled hazardous materials package or container
- Marks a package to indicate that it contains a hazardous material
- Labels a package to indicate that it contains a hazardous material
- Prepares a hazardous materials shipping paper
- Provides and maintains hazardous materials emergency response information
- Reviews a hazardous materials shipping paper to verify compliance with the HMR or international equivalents
- For persons importing a hazardous material in to the United States, provides the shipper with information as to the requirements of the HMR that apply to the shipment of the material while in the United States
- Certifies that a hazardous material is in proper condition for transportation in conformance with the requirements of the HMR
- Blocks and braces a hazardous materials package in a freight container or transport vehicle
- Segregates a hazardous materials package in a freight container or transport vehicle from incompatible cargo
- Selects, provides, or affixes placards for a freight container or transport vehicle to indicate that it is carrying hazardous materials
- Loads or unloads hazardous materials for the purpose of transportation
- Tests, reconditions, or repairs hazmat packaging
- Operates a vehicle used to transport hazmat

DETERMINE EMPLOYEE NEEDS

As previously mentioned, HMR training requirements are performance based to provide flexibility regarding training format and delivery. Training may be provided directly by the hazmat employer or by independent training providers. Therefore, hazmat employers have a variety of training options available.

The hazmat employer is responsible for selecting training that meets company safety goals and the HMR requirements. The process may begin with conducting a needs assessment based on a thorough understanding of your company's operations and its hazmat employees' responsibilities, knowledge and capabilities.

You may want to begin with these questions:

- What hazardous materials/wastes does your company handle and which hazards do they represent? For example, do your hazmat employees handle hazardous materials such as infectious substances and lithium batteries?
- What quantities do you ship and how frequently? For example, do you ship bulk, non-bulk, ORM-D, excepted quantities, or small quantities?
- What modes of transport do you use?
- Are there materials that your employees may not be aware are hazardous materials and are subsequently being shipped undeclared. Examples include paint, perfume, batteries, aerosols, and fireworks.
- Where do you transport hazardous materials (i.e. domestic or international locations)?
- Do company accident or injury rates indicate additional training is necessary? If so, in what areas?
- What regulations does the training need to cover?
- What are the job descriptions/functions of your hazmat employees?
- Have your hazmat employees been trained previously?
- Are your hazmat employees trained in all aspects of the function(s) they are performing? For example, are your employees responsible for shipper certification trained in each aspect of the hazmat shipping they are certifying such as packaging or package closure requirements?
- Have any responsibilities changed?
- Has the company's operations changed?
- What languages need to be addressed?
- Are your employees aware of incident reporting requirements?
- Has anything else changed?

ASSESS TRAINING OPTIONS

After the needs assessment is complete, it is time to select a training tool. Potential selection criteria are content, method of delivery, and instructor qualifications.

CONTENT

Content should be easy to understand and appropriate for the audience. Sufficient time should be allocated to cover the subject matter, and techniques should be used to ensure that students comprehend and retain the material presented.

A few questions hazmat employers might ask when assessing content include:

- Is the time allotted for training sufficient for employee comprehension?
- Is the information presented clearly and accurately and in a manner that can be understood by employees of varying literacy and language skills?
- Does the training use repetition to confirm that key points are understood?
- Does the training use exercises, questions, or other mechanisms to ensure an understanding of what has been taught?
- Is the information presented in a logical manner?
- Is comprehension tested?
- Is a test provided that allows the hazmat employee to demonstrate that they have satisfactorily completed training?
- Is there a follow-up support system? If so, what is it and does this system meet the need?

METHOD OF DELIVERY

Method of delivery is another consideration.

For purposes of this guidance, training options have been broken down into four delivery methods:

- Web-based
- Computer-based
- Classroom
- Hands-on/Mentor training.

Each delivery method has advantages and disadvantages.

INSTRUCTOR QUALIFICATIONS

Instructor qualifications are an important element of an effective training program. Hazmat instructors have varying degrees of subject matter expertise and teaching skills. In addition to understanding the subject matter, instructors should understand the best method of delivery for the given audience.

ADVANTAGES AND DISADVANTAGES OF TRAINING OPTIONS

WEB-BASED TRAINING

ADVANTAGES	DISADVANTAGES
Provides standardized training ensuring a consistent message	Bandwidth limitations can place constraints on certain media types
Decreases the time employees are out of the office	Hazmat employees must be self-directed and comfortable using the web
Allows for quick updates for rapidly changing material	Hazmat employees may be distracted or interrupted
Training is more accessible to a larger audience	It is difficult to provide opportunities for hands-on experience
Cost effective way to refresh existing training	Some may find it difficult to engage and retain
Training is more convenient for employees -- it is available anytime, anywhere	Limited interaction with an instructor
No travel costs	Difficult to assess employee progress in real time
No cost associated with obtaining new media updates	Compatible equipment may not be available

COMPUTER-BASED TRAINING

ADVANTAGES	DISADVANTAGES
When there is a large quantity of video or complex graphics, computer-based training can ease download times and slow operations that sometimes occur with web-based training	Requires self-direction
Offers flexibility for the end-user; hazmat employees can simply load and run the training at their convenience	Hazmat employees may be distracted or interrupted
Cost effective way to refresh existing training	It is difficult to provide opportunities for hands-on experience
Training is more accessible to a larger audience	Minimal interaction with an instructor or subject matter expert
Hazmat employees can proceed at their own pace	Information can become outdated
No travel costs	Possible higher cost to update
	Some may find it difficult to engage and retain
	Compatible equipment may not be available
	Difficult to assess employee progress in real time

CLASSROOM TRAINING

ADVANTAGES	DISADVANTAGES
Provides an instructor and a structured approach to teaching	Potential personality differences between the trainer and the hazmat employees
Allows for real time discussion and provides interaction that isn't easily duplicated even with the most advanced technology	Fellow trainees can dictate the pace of the training, leaving some students behind, and others bored with a pace that is too slow for them
Allows for constructive team building	Difficult to guarantee outcomes
Personalized assistance from the instructor can address individual student needs	Scheduling based on trainer or facility availability, not employee needs
Leverages instructor skills and experience	Costs for travel, training, and the instructor
Easy to confirm whether hazmat employees have taken the course	
Easy to use evaluation tools to confirm that learning has occurred	
Opportunity to customize training to meet employer needs and requirements	

HANDS-ON/MENTOR TRAINING

ADVANTAGES	DISADVANTAGES
Simulates the job	Can be high cost, high overhead
Provides hands-on experience allowing the hazmat employee to integrate theory and practice	Variables differ, so its difficult to guarantee outcomes
Allows the hazmat employee, under supervision, to use critical thinking skills to engage in a problem solving process that incorporates professional knowledge	Timing based on mentor and/or facility availability, not necessarily employee needs
Provides a sense of urgency to develop alternatives and make decisions under the pressure of time without the possibility of serious consequences	Potential personality differences
Mentors may have more credibility with the hazmat employee since they have specific experience relating to the subject being taught and the job site in question	A mentor must be available and capable of training
Procedural and policy gaps are identified	
May avoid comprehension problems related to literacy/language deficiencies	

You should assess your training needs, available time and resources, and the capabilities of your employees to identify the training content and format that best meets your training goals.

MONITOR THE EFFECTIVENESS OF TRAINING

It is important to evaluate the effectiveness of the selected training tools against expectations. Conducting an evaluation allows you to improve the future planning and implementation of training, determine if training objectives have been achieved, and proactively facilitate any necessary adjustments.

When conducting the evaluation, a few helpful questions include:



- Did the employee believe the training was effective and useful?
- What were the expectations of the training? Were these expectations met?
- After the training, is the employee proficient in performing job duties and responsibilities?
- Does the employee appear to need further training? If so, what functions need additional focus? Is this the result of a deficiency in training?

Many techniques and tools can be used to evaluate training programs.

A few methods of evaluating training are:

- Student opinion: Using employee feedback to help determine effectiveness of the training program including identifying how to improve course content and delivery
- Supervisors' observations: Using supervisor observations to assess an employee's performance both before and after the training
- On the job improvements: Assessing whether changes occur in job performance that result in changes in accident rates, injury rates, or penalties

Regardless of the approach, if done correctly, you can use information derived from evaluations to help determine whether training is effective and how to apply future training resources.

HELPFUL TIPS AND TOOLS

The “Helpful Tips and Tools” section is provided to help you manage hazardous materials training.

DEVELOP A SAFETY CULTURE

The HMR require training for all hazmat employees. However, your training program should not stop once you have met the HMR requirements. You and your managers should work with employees to develop a supportive safety culture that encourages training as a continuous learning process.

You may want to consider implementing some or all of these measures:

- Visible promotion of a safety culture driven by top management
- Establish accountability for safety that begins with individual employees and includes all management layers
- Encourage employees to report safety issues or problems without fear of retribution or retaliation
- Encourage employees to identify new, improved ways to accomplish safety goals
- Monitor and evaluate employees as they perform their hazmat functions
- Correct potential issues as they are identified
- Provide opportunities for additional training
- Periodically reinforce safe practices through safety meetings
- Assess company safety performance through audits
- Consider implementing a monthly 10% hazmat inventory program in which 10% of a company’s hazmat is spot checked for proper packaging and hazmat communication each month. Implementing such a practice can help detect potential errors
- Keep employees informed of assessments and results
- Review the results of incidents and inspections
- Regularly review regulatory changes and/or changes in company operations

Developing a safety culture is a continuous process, and the rewards are real. Employees take ownership of the operations for which they are responsible and share responsibility equally with management for the overall safety of the company. Enhanced safety measures help to reduce the cost of doing business by reducing accidents, decreasing workers compensation claims, and providing a more effective and targeted use of resources. Thus, companies and individuals become more competitive while protecting people, property, and the environment.

DESIGNATE A TRAINING COORDINATOR

It is your responsibility to select training options that meet the requirements of the HMR and the needs of your hazmat employees. This can be a challenging task, but it is extremely critical to ensuring that the training program you provide is effective and successful.

One way to manage hazmat training is to designate one or more employees as training coordinators.

Suggested qualifications for training coordinators include:

- Knowledge of the HMR as they apply to company operations
- The ability to monitor and understand regulatory changes as they develop
- Knowledge of how to establish and manage a training program
- Experience in one or more of the hazmat duties being performed

Once a training coordinator(s) is in place, he or she can guide the training and development of each hazmat employee.

Suggested responsibilities include:

- Arranging for newly trained employees to be evaluated upon completion of a training program and periodically thereafter
- Determining training needs for incumbents and assessing training options
- Consulting with other industry professionals on the best quality training available
- Instituting formal training evaluation programs and providing feedback to training providers
- Communicating on the status of training with management
- Providing feedback to training providers
- Maintaining training records in accordance with the HMR

A committee of trained hazardous materials employees may be established to provide guidance and assistance to the training coordinator. Examples of potential committee responsibilities may include identifying training needs and evaluating the effectiveness of training.

A few Checklists that may assist you with managing a training program are included in the “Understanding Status of Training Efforts” section.

IMPLEMENT A PLANNING PROCESS

Implementing a planning process can help you develop a consistent approach for managing training needs. To assist, an example planning framework is provided. This framework is not intended to be exhaustive; instead, it is intended to help identify elements that could be considered.

UNDERSTAND OBJECTIVES

Example:

Develop properly trained hazmat employees to meet regulatory requirements for training, develop an educated workforce, improve safety, and minimize the potential negative impacts of the hazardous materials on life, property, and the environment.

UNDERSTAND GOALS

Example goals:

- ▶ Reduce incidents and accidents
- ▶ Help employees protect themselves and the environment
- ▶ Improve a company's effectiveness, efficiency, and productivity
- ▶ Develop a strong safety culture
- ▶ Prevent regulatory sanctions
- ▶ Heighten employee safety
- ▶ Increase employee skills
- ▶ Decrease property damage costs
- ▶ Help employees identify when hazardous materials are present
- ▶ Increase productivity

IMPLEMENT A TRAINING FRAMEWORK

Example framework:

- ▶ Demonstrate support from all levels of leadership
- ▶ Identify point of contact(s) to manage training and coordinate internally, as appropriate
- ▶ Implement accountability
- ▶ Understand employee responsibilities, the tools they use, and company operations
- ▶ Understand status of training to date
- ▶ Conduct a needs assessment to determine what training is needed
- ▶ Prioritize training needs
- ▶ Assess the landscape of available training tools and determine which tools meet the needs of the organization and its employees
- ▶ Execute training
- ▶ Evaluate training
- ▶ Maintain accurate training records to include:
 - The hazmat employee's name
 - The most recent training completion date
 - A description of, copy of, or reference to training materials used to meet the training requirements
 - The name and address of the person providing the training; and a certification that the person has been trained and tested as required
- ▶ Continuously improve the training program, as necessary

IMPLEMENT A CONSISTENT PROCESS FOR RECORDKEEPING

The HMR mandate the content and retention of training records; but does not prescribe the training record format. Below is a sample record to illustrate what a record may look like.

HAZMAT EMPLOYEE TRAINING RECORD			
Employee Name:			
I certify that the hazmat employee identified on this training record has been trained and tested as required by the Hazardous Materials Regulations, Subpart H.			
Signed: _____		Title: _____	
GENERAL AWARENESS / FAMILIARIZATION			
Description, Copy, and Location of Training	Training Provided By	Test / Score (not mandatory)	Date Trained
Hazmat DigiPack located in main office	Employer Training Officer Jane Doe	No Test	July 14, 2007
Hazardous Materials Transportation Training Modules - Copy located in main office	Employer Training Officer Jane Doe	Test attached to file: 98%	July 14, 2007
FUNCTION SPECIFIC			
Description, Copy, and Location of Training	Training Provided By	Test / Score (not mandatory)	Date Trained
DOT Hazardous Materials Transportation Training Modules 3 and 4: Packaging, Marking and Labeling - Copy located in main office	Employer Training Officer Jane Doe	Test attached to file: 100%	July 14, 2007
Performance Demonstration of Packaging, Marking and Labeling - Checklist of items performed attached to this training record	Supervisor Dan	Successfully demonstrated: 100%	July 28, 2007
SAFETY TRAINING			
Description, Copy, and Location of Training	Training Provided By	Test / Score (not mandatory)	Date Trained
Hazardous Materials Transportation Safety - Copy of training materials available in main office	Hazmat Safety Consultative Service 123 Anywhere St. Somewhere, USA	Certificate of Completion and test attached to file: 97.5%	July 14, 2007
SECURITY AWARENESS TRAINING			
Description, Copy, and Location of Training	Training Provided By	Test / Score (not mandatory)	Date Trained
Hazmat Transportation Security Awareness Training Module – USDOT/PHMSA. Copy of CD-ROM and test available in main office	Supervisor Dan	Certificate of Completion and test attached to file: 97.5%	July 14, 2007
INDEPTH SECURITY TRAINING			
Description, Copy, and Location of Training	Training Provided By	Test / Score (not mandatory)	Date Trained
Company Security Plan and Training - Copy of training materials available in main office	Supervisor Dan	Verbal Test given: Passed	July 30, 2007

UNDERSTAND TRAINING CURRICULUM

The HMR mandate five types of training. The HMR do not prescribe in detail what topics to address during each type of training. To assist in evaluating your company's training needs, a list of the types of training with possible curriculums is provided here. These lists are not intended to be exhaustive or all inclusive.

GENERAL AWARENESS/FAMILIARIZATION: Provides hazmat employees with familiarity with the requirements of the Hazardous Materials Regulations and enables hazmat employees to recognize and identify hazardous materials. All hazmat employees are required to have general awareness/familiarization training. This training typically provides a basic understanding of:

- The Identification of Hazardous Materials
- The Hazard Classification System
- How to Use the Hazardous Materials Table
- Packaging
- Markings and Labels
- Placards
- Shipping Papers
- Segregation
- Understanding of the HMR Training Requirements
- Requirements for Incident Reporting
- Security

FUNCTION SPECIFIC: Provides hazmat employees a detailed study of the requirements of the regulations applicable to the function(s) for which the person is responsible. Training needs will depend on the company operations and the hazmat employee's responsibilities. Your responsibility is to identify the specific topics and extent to which topics are covered to meet your employees' needs.

Examples of function specific topics are included in the Function Specific Training Checklist in the "Understanding Status of Training Efforts" section.



SAFETY TRAINING: Covers the hazards presented by hazardous materials, safe handling, emergency response information and methods and procedures for accident avoidance. Training that meets EPA and OSHA regulations may be acceptable in meeting the HMR. All hazmat employees are required to have safety training. Topics may include:

- Emergency Response Information
- Emergency Response Telephone Numbers
- Means of Egress
- Employee Emergency Plans and Fire Prevention Plans
- General Safety and Health Provisions
- Employee Emergency Action Plans
- Bulk Delivery and Mixing Vehicles
- Contract Employer Responsibilities
- Mechanical Integrity
- Hazardous Waste Operations and Emergency Response
- New Technology Programs
- Personal Protective Equipment
- Respiratory Protection
- Fire Protection
- Fire Brigades
- Portable Fire Extinguishers
- Fixed Extinguishing Systems
- Fire Detection Systems
- Employee Alarm Systems
- Materials Handling and Storage
- Moving the Load
- Crawler Locomotives and Truck Cranes
- Electrical Safety-Related Work Practices
- Confined and Enclosed Spaces
- Precautions Before Entering

SECURITY AWARENESS TRAINING: Provides hazmat employees with a general understanding of the security risks associated with hazardous materials transportation and the methods designed to enhance transportation security. All hazmat employees are required to have security awareness training. Examples of subjects that could be included are:

- Regulatory Requirements
- Potential Threats
- Potential Targets
- Prevention Tools

IN-DEPTH SECURITY TRAINING: Directly relates to the required company security plan. Specific content is dependent upon the company security plan and employee responsibilities. Hazmat employees are required to receive training commensurate with their responsibilities. Training must include:

- Security Objectives
- Specific Security Procedures
- Employee Responsibilities
- Actions to Take in the Event of a Security Breach
- Organizational Security Structure

UNDERSTANDING STATUS OF TRAINING EFFORTS (CHECKLISTS)

The hazmat employer is responsible for selecting training that meets company safety goals and the HMR requirements. Although not required by the HMR, many companies establish training policies or standard operating procedures to help with decision-making. Checklists can be used as tools to assist with understanding the status of training efforts and decision-making.

Here are examples of checklists that may be used.

DO YOU HAVE A TRAINING POLICY?

Below is an example of a checklist that can help you to identify elements of your training policy. Rows have been left blank so you can identify criteria not listed that is included in your company training policy.

Do you have a training policy?	Yes	No
Do you have a training policy?	☐	☐
IF YES, DOES IT INCLUDE:		
Purpose and scope	☐	☐
A definitions section	☐	☐
Identification of employees that require training	☐	☐
A list of employee functions and responsibilities	☐	☐
Identification of the type of training required	☐	☐
Initial training requirements	☐	☐
Recurrent training requirements	☐	☐
Function specific or company specific	☐	☐
Testing (pass/fail) requirements	☐	☐
Record keeping requirements	☐	☐
Certification of training requirements	☐	☐
Training as needed (i.e. when regulations are updated or issued)	☐	☐
Training every year	☐	☐
Training every 2 years	☐	☐
Training every 3 years	☐	☐
OTHER ITEMS AS LISTED BELOW:		
	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐

WHAT TYPE OF TRAINING IS PROVIDED?

Below are example checklists to help you determine what additional training your employees might need. Rows have been left blank so you can identify topics not listed that are important to your company.

WHAT TYPE OF TRAINING IS PROVIDED TO YOUR EMPLOYEES?	
Classroom (In-house or external)	☐
Computer-based	☐
Web-based	☐
Hands-on/Mentor	☐
OTHER TYPES AS LISTED BELOW	
	☐
	☐
	☐

WHAT TOPICS ARE INCLUDED IN YOUR PROGRAM?	Yes	No	N/A
General Awareness	☐	☐	☐
Classification	☐	☐	☐
Documentation	☐	☐	☐
Packaging	☐	☐	☐
Marking	☐	☐	☐
Labeling	☐	☐	☐
Placarding	☐	☐	☐
Loading & Unloading (non-bulk)	☐	☐	☐
Loading & Unloading (bulk)	☐	☐	☐
Blocking & Bracing	☐	☐	☐
Security Awareness	☐	☐	☐
In-Depth Security Awareness	☐	☐	☐
Safety	☐	☐	☐
Segregation	☐	☐	☐
Incident Reporting	☐	☐	☐
Operations	☐	☐	☐
Packaging	☐	☐	☐
OTHER TOPICS AS LISTED BELOW			
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐

COMMERCIAL OFF-SITE VS. COMMERCIAL OR COMPANY PROVIDED IN-HOUSE

It is important to evaluate the benefits of training programs as they relate to your company's needs. Below is an example of a checklist and criteria that may assist. Rows have been left blank so you can identify the criteria that are most important to your company.

COMMERCIALLY AVAILABLE PROGRAMS OFF-SITE	VERY IMPORTANT	IMPORTANT	NEUTRAL	NOT IMPORTANT
Knowledge/reputation of instructor	☐	☐	☐	☐
Reputation of training organization	☐	☐	☐	☐
Location of training	☐	☐	☐	☐
Length of time employee will be absent from job	☐	☐	☐	☐
	☐	☐	☐	☐
	☐	☐	☐	☐
	☐	☐	☐	☐
COMMERCIALLY AVAILABLE PROGRAMS FOR IN-HOUSE TRAINING	VERY IMPORTANT	IMPORTANT	NEUTRAL	NOT IMPORTANT
Knowledge/reputation of instructor	☐	☐	☐	☐
Reputation of training organization	☐	☐	☐	☐
No interruptions while employees are in training	☐	☐	☐	☐
Length of time required to complete program	☐	☐	☐	☐
	☐	☐	☐	☐
	☐	☐	☐	☐
	☐	☐	☐	☐
COMPANY PROVIDED IN-HOUSE INSTRUCTION	VERY IMPORTANT	IMPORTANT	NEUTRAL	NOT IMPORTANT
Availability of knowledgeable instructor	☐	☐	☐	☐
No travel costs	☐	☐	☐	☐
Length of time required to complete program	☐	☐	☐	☐
No interruptions while employees are in training	☐	☐	☐	☐
Combined instructor and computer-based training	☐	☐	☐	☐
	☐	☐	☐	☐
	☐	☐	☐	☐
	☐	☐	☐	☐

FUNCTION SPECIFIC TRAINING CHECKLIST

The following checklist is provided to assist with identifying the types of training needed to satisfy function specific training requirements. The list provided is not intended to be exhaustive or all inclusive as there may be additional needs not covered. It is the employer's responsibility to determine which topics require in-depth coverage for their hazmat employee to enable them to perform their hazmat duties safely.

Employee Name _____	Check Knowledge Required Below
Hazard Classification: ☐ Definition of the Nine hazard Classes and ORM-D Material ☐ Class 1: Explosives ☐ Class 2: Gases ☐ Class 3: Flammable and Combustible Liquids ☐ Class 4: Flammable Solid, Spontaneously Combustible, Dangerous When Wet ☐ Class 5: Oxidizer, Organic Peroxide ☐ Class 6: Poisonous or Toxic, Infectious Substances ☐ Class 7: Radioactive ☐ Class 8: Corrosives ☐ Class 9: Miscellaneous	☐ Shipping Papers ☐ Define Shipping Papers ☐ Identify Information Required and Display ☐ Basic Description and Sequence ☐ Additional Information ☐ Emergency Response Telephone Number ☐ Emergency Response Information ☐ Certification by Shipper ☐ Identify Retention Requirements
How to use the HMR: ☐ Hazardous Materials Table ☐ Appendix A ☐ Appendix B ☐ Special Provisions ☐ Packaging Selection ☐ Packing Group Definition ☐ Packing Group I (PGI) ☐ Packing Group II (PGII) ☐ Packing Group III (PGIII) ☐ Exceptions for Packing Group Assignments ☐ Markings ☐ Basic and Additional Markings on Non-Bulk Packaging ☐ Markings for Bulk Packaging ☐ Labels ☐ Hazard Labels and Placement ☐ Primary Hazard Label ☐ Subsidiary Hazard Label ☐ How Labels Convey Hazard ☐ Color ☐ Symbols ☐ Text ☐ Hazard Class Number or Division Number ☐ Placards ☐ Requirements ☐ Table 1 and Table 2 ☐ Exceptions to Placard Tables ☐ How Placards Convey Hazard ☐ Color ☐ Symbols ☐ Text ☐ Hazard Class Number or Division Number ☐ Placard Placement Requirements ☐ Use of International Placards	☐ Segregation ☐ Warehouse (storage) ☐ Rail ☐ Highway ☐ Vessel ☐ Air ☐ Handling ☐ Loading and Unloading ☐ Filling ☐ Blocking and Bracing ☐ Incident Reporting Requirements ☐ By Phone ☐ In Writing ☐ Operations ☐ Air ☐ Vessel ☐ Highway ☐ Rail ☐ Packaging Retesting ☐ Packaging Manufacturing
	Additional Topics Not Listed: _____ _____ _____ _____ _____ _____ _____ _____ _____ _____

RESOURCES FOR MORE INFORMATION

LETTERS OF INTERPRETATION

The Pipeline and Hazardous Materials Safety Administration, Office of Hazardous Materials Safety (OHMS) provides written clarifications of the Hazardous Materials Regulations in the form of interpretation letters. These letters reflect the agency's current application of the HMR to the specific facts presented by the person requesting the clarification. Interpretations are one form of Guidance provided by OHMS.

Interpretations do not create legally-enforceable rights or obligations and are provided to help the public understand how to comply with the HMR.

OHMS regularly reviews interpretations for accuracy and applicability. Interpretation letters from the last ten years are published to provide the public with a greater awareness and understanding of the HMR.

To access letters of interpretation visit www.phmsa.dot.gov/hazmat/regs/interps and type in the word "training" in the Search Interpretation box. Information on how to request clarification of the HMR is also available at this site.

TRAINING MATERIALS AND PUBLICATIONS

Training, outreach, and information dissemination are important responsibilities of PHMSA. To promote compliance with the HMR, PHMSA develops brochures, charts, publications, training CD-ROMs, videos and other safety-related information and makes them available to the public through the PHMSA website. Many of the publications spotlight safety concerns such as lithium batteries, undeclared hazmat shipments, wetlines, and alternative fuels such as ethanol.

To order training materials and publications, visit <https://hazmatonline.phmsa.dot.gov/services>

SEMINARS, WORKSHOPS, AND SPECIAL EVENTS

PHMSA offers free seminars, workshops, and special events throughout the year. These free training events are for anyone who offers or transports hazardous materials in commerce, provide emergency response to accidents or incidents involving hazmat, or has a desire to learn more about the HMR.

To learn more about upcoming training events, visit www.phmsa.dot.gov/hazmat/training/seminars

HAZMAT INFO-LINE

Call our Hazmat **INFO-LINE: 1-800-467-4922** to obtain hazardous materials transportation information and copies of rulemakings. Specialists are on duty Monday through Friday from 9 a.m. to 4 p.m. Eastern time. You may call any time, 24 hours a day, seven days a week, and leave a message. We will return your call before the end of the next business day. You may also use this number to report alleged violations of the Hazardous Materials Regulations.



GLOSSARY

IN-HOUSE TRAINING

Training provided to the employees of a company by a company employee or an independent training provider at the company facility.

HAZMAT EMPLOYEE

Hazmat employee means:

(1) A person who is:

(i) Employed on a full-time, part time, or temporary basis by a hazmat employer and who in the course of such full time, part time or temporary employment directly affects hazardous materials transportation safety;

(ii) Self-employed (including an owner-operator of a motor vehicle, vessel, or aircraft) transporting hazardous materials in commerce who in the course of such self-employment directly affects hazardous materials transportation safety;

(iii) A railroad signalman; or

(iv) A railroad maintenance-of-way employee.

(2) This term includes an individual employed on a full time, part time, or temporary basis by a hazmat employer, or who is self-employed, who during the course of employment:

(i) Loads, unloads, or handles hazardous materials;

(ii) Designs, manufactures, fabricates, inspects, marks, maintains, reconditions, repairs, or tests a package, container or packaging component that is represented, marked, certified, or sold as qualified for use in transporting hazardous material in commerce.

(iii) Prepares hazardous materials for transportation;

(iv) Is responsible for safety of transporting hazardous materials;

(v) Operates a vehicle used to transport hazardous materials.

HAZMAT EMPLOYER

Hazmat employer means:

(1) A person who employs or uses at least one hazmat employee on a full-time, part time, or temporary basis; and who:

(i) Transports hazardous materials in commerce;

(ii) Causes hazardous materials to be transported in commerce; or

(iii) Designs, manufactures, fabricates, inspects, marks, maintains, reconditions, repairs or tests a package, container, or packaging component that is represented, marked, certified, or sold by that person as qualified for use in transporting hazardous materials in commerce;

(2) A person who is self-employed (including an owner-operator of a motor vehicle, vessel, or aircraft) transporting materials in commerce; and who:

(i) Transports hazardous materials in commerce;

(ii) Causes hazardous materials to be transported in commerce; or

(iii) Designs, manufactures, fabricates, inspects, marks, maintains, reconditions, repairs or tests a package, container, or packaging component that is represented, marked, certified, or sold by that person as qualified for use in transporting hazardous materials in commerce; or

(3) A department, agency, or instrumentality of the United States Government or an authority of a State, political subdivision of a State, or an Indian tribe; and who:

(i) Transports hazardous materials in commerce;

(ii) Causes hazardous materials to be transported in commerce; or

(iii) Designs, manufactures, fabricates, inspects, marks, maintains, reconditions, repairs or tests a package, container, or packaging component that is represented, marked, certified, or sold by that person as qualified for use in transporting hazardous materials in commerce.

INDEPENDENT TRAINING PROVIDER

A person or organization, independent of a hazmat employer, that offers hazmat training.

IN-DEPTH SECURITY TRAINING

Training related to a company's required security plan. It should cover company security objectives, specific security procedures, employee responsibilities, actions to take in the event of a security breach and the organizational security structure.

**PRE-TRANSPORTATION
FUNCTION**

means a function specified in the HMR that is required to assure the safe safe transportation of a hazardous material in commerce, including—

- (1) Determining the hazard class of a hazardous material.
- (2) Selecting a hazardous materials packaging.
- (3) Filling a hazardous materials packaging, including a bulk packaging.
- (4) Securing a closure on a filled or partially filled hazardous materials package or container or on a package or container containing a residue of a hazardous material.
- (5) Marking a package to indicate that it contains a hazardous material.
- (6) Labeling a package to indicate that it contains a hazardous material.
- (7) Preparing a shipping paper.
- (8) Providing and maintaining emergency response information.
- (9) Reviewing a shipping paper to verify compliance with the HMR or international equivalents.
- (10) For each person importing a hazardous material in the United States, providing the shipper with timely and complete information as to the HMR requirements that will apply to the transportation of the material within the United States.
- (11) Certifying that a hazardous material is in proper condition for transportation in conformance with the requirements of the HMR.
- (12) Loading, blocking, and bracing a hazardous materials package in a freight container or transport vehicle.
- (13) Segregating a hazardous materials package in a freight container or transport vehicle from incompatible cargo.
- (14) Selecting, providing, or affixing placards for a freight container or transport vehicle to indicate that it contains a hazardous material.

RECURRENT TRAINING

Training given at intervals (usually not more than two or three years) to provide an update on regulatory changes to ensure a hazmat employee's knowledge remains at the required level to safely carry out their responsibilities.

SAFETY TRAINING

Training that covers the hazards presented by hazardous materials, safe handling, emergency response information and methods and procedures for accident avoidance.

**SECURITY AWARENESS
TRAINING**

Training that is intended to provide a general understanding of the security risks associated with hazardous materials transportation and the methods designed to enhance transportation security. It should identify possible practical indicators of a potential security threat.

TRAINING PROGRAM

A systematic method that has been developed for providing training, which consists of associated material (such as handouts, overheads, videos, exercises, etc. as well as use of interactive computer based training), tests and quizzes and, where there is an instructor, the instructor's notes or course outline. The training program may be a tutored or self-study course.

TRAINING PROVIDER

Any person or organization that offers or provides hazmat training, including a hazmat employer.

Notes

**For information about other
Hazmat Publications or training questions:**

Visit our website: <http://hazmat.dot.gov>

Phone: (202) 366-4900

Fax: (202) 366-7342

E-mail: training@dot.gov

Or write:

U.S. Department of Transportation
**Pipeline and Hazardous Materials
Safety Administration**
1200 New Jersey Avenue, SE, PHH-50
Washington, DC 20590-0001



U.S. Department
of Transportation

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Hazardous Materials
Safety Administration**

