



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

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# Hazardous Materials Transportation Training & Security Requirements





# Objectives

- Clarify training requirements in the HMR, to identify those employees who must be trained and to determine what type of training may be best for the employees
- Increase awareness and understanding of the proper transportation of hazardous materials
- Familiarize the hazmat community with publications and training materials available from PHMSA
- Provide training aids to better meet the HMR requirements.
- To determine who needs a security plan





# It's the Law



**The Federal hazardous materials transportation law requires training of all hazmat employees.**

**49 U.S.C. Section 5107**





# Training Requirements

HMR training requirements are found in **49 CFR, Part 172, Subpart H**





# Inspections Trends

**Common issues identified during inspections include:**

- Failure to maintain training records
- Failure to train hazmat employees
- Packages not properly marked and labeled
- Incorrect shipping papers
- Failure to register with PHMSA
- Lack of a Security Plan





# Human Error

**Human error may result from a variety of factors including:**

- Lack of knowledge leading to 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 knowledge of how to respond to an incident







# HAZMAT INCIDENTS



**Hazmat incidents caused by human error can be reduced by implementing an effective training program.**





# What is DOT Hazmat Training?

**Training is a systematic program that ensures hazmat employees are:**

- Familiar with the general provisions of Subchapter C
- Able to recognize and identify hazardous materials
- Knowledgeable of specific requirements of Subchapter C applicable to functions performed by the employee
- Knowledgeable of emergency response information, self-protection measures, and accident prevention methods and procedures

§172.700(b)

1993







# Effective Training Program

- Develops strong safety culture
- Heightens employee safety
- Improves a company's effectiveness, efficiency and productivity
- Increases employees skills
- Aids in ensuring safe and secure shipments
- Reduces likelihood of catastrophic event such as fire aboard aircraft
- Provides employees an understanding of compliance





# Hazardous Material Training Requirements

- The HMR mandates training requirements for persons who prepare hazmat for shipment, 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 material.
- Understands the functions of his/her job
- Is knowledgeable about emergency response, self-protection measures, and accident prevention.





# Who Needs Hazmat Training?

- US DOT “Hazmat Employee” training rules apply to any company which performs any function in any way regulated by the US DOT Hazardous Material Regulations (HMR)
- The HMR requires all Hazmat employees to be trained including hazmat employers with direct supervision of hazmat transportation functions





# Who is a Hazmat Employer

- Any person who uses one or more employee in connection with:
  - Transporting hazmat in commerce
  - Causing hazmat to be transported or shipped
  - Representing, marking, certifying, selling, offering, reconditioning, testing, repairing or modifying packagings





# Applicability and Responsibility

- A *hazmat employer* shall ensure that each of his or her *hazmat employees* is trained.
- The responsibility for training (*and the civil penalties for not training*) rests with the *employer*.



§172.702(a)





# How to Begin

- Determine who your hazmat employees are.
- Determine the employees needs
- Assess the training options
- Develop a safety culture
- Designate a training coordinator
- Implement a planning process
- Implement a process for recordkeeping
- Understand the training curriculum



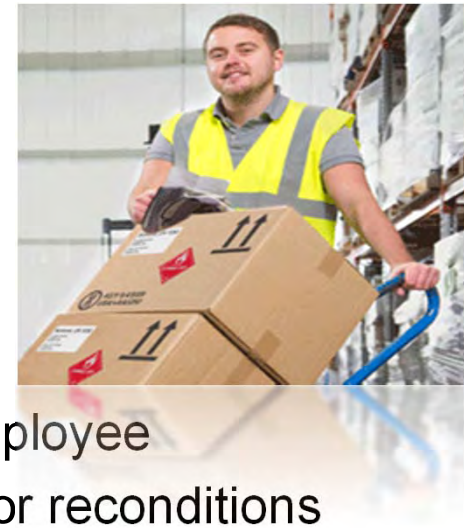




# Who is a Hazmat Employee

## A person who is:

- Employed full-time, part time, or temporarily
- Directly affecting hazmat transportation safety
- Self-employed
- Loads, unloads or handles hazmat
- A railroad signalman or maintenance-of-way employee
- Designs, manufactures, inspects, marks, tests, or reconditions containers
- Prepares hazmat for transportation
- Operates a transport vehicle





# Training Frequency

- Initial training must be completed within 90 days of hazmat employment or change in job function.
- Hazmat employees must be directly supervised by a trained and knowledgeable employee until trained themselves.
- Recurrent (refresher) training is required *at least* every three years.
- Security Plan training is required at least every three years or when it has been revised.

§172.704(c)(1) & (2)





# Additional Modal Training Requirements



**Air - \$175.20**



**Highway -  
\$177.800 &  
\$177.816**



**Vessel - \$176.13**





# Training Requirements

## **Hazmat employee training must include:**

- General awareness / familiarization training
- Function-specific training
- Safety training
- Security awareness training
- In-depth security training (when applicable)

§172.704(a)





# General Awareness/Familiarization

## Designed to:

- Provide familiarity with the requirements of the HMR
- Enable hazmat employees to recognize and identify hazardous materials using the hazard communication standards
- All hazmat employees **must** receive General Awareness Training.

§172.704(a)





# General Awareness/Familiarization

## Training CD Highlights:

- Familiarization of the Hazardous Materials Regulations (HMR) and requirements
- Recognize and identify hazardous materials
- Help satisfy the general awareness/familiarization training requirements.
- Does not include testing only knowledge checks.
- Testing must be developed and implemented by your employer.
- Approximately one hour in duration with 6 training modules







# Function-Specific Training

- Provides a detailed understand of the HMR.
- Each employee must be trained on the specific functions they are required to perform.
- Training needs will depend on the company operations and the employee's responsibilities.
- Meets requirements of Subchapter C, or special permits issued under subchapter A



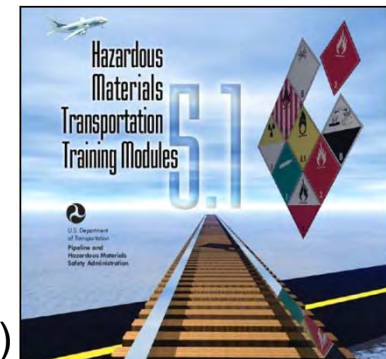
§172.704(a)(2)(i)



# PHMSA Hazardous Materials Transportation Training Modules 5.1

## Training CD-ROM Highlights:

- Introduces the HMR
- Meets requirements for general awareness/familiarization training
- Provides a basis for a function-specific training program
- Six Training Modules:
  1. The Hazardous Materials Shipping Table
  2. Shipping Papers
  3. Marking and Labeling
  4. Placarding
  5. Packaging
  6. Carrier Requirements (Highway, Air, Rail, and Water)





# Safety Training

## Safety training must cover:

- Hazards presented by hazardous material
- Safe handling
- Emergency response information
- Methods and procedures for accident avoidance
- All hazmat employees must receive this training
- Example: Proper procedures for handling packages containing hazardous materials.

§172.704(a)(3)





# Security Awareness

## Security awareness training must provide:

- Awareness of security risks associated with hazmat transportation
- Methods to enhance transportation security
- How to recognize and respond to possible security threats
- All hazmat employees must receive Security Awareness Training.
- Examples are:
  - Regulatory Requirements
  - Potential Threats
  - Potential Targets
  - Prevention Tools

§172.704(a)(4)





# PHMSA Hazmat Transportation Security Awareness Training Module

## Training CD Highlights:

- Provides overview of hazmat transportation security issues
- Helps identify and address security risks
- Satisfies HMR security awareness training requirement
- Available Only on Digipack





# In-Depth Security Training

- Required for each hazmat employee of an employer required to have a security plan.
- In-Depth Training must include:
  - Company security objectives
  - Specific security procedures
  - Actions to take in the event of a security breach
  - Employee responsibilities
  - Company organizational security structure

§172.704(a)(5)







# Who needs a security plan?





# HM Risk-Based Adjustment of Transportation Security Plan Requirements

- Narrows the list of materials subject to current security plan requirements for the transportation of hazardous materials
- Only certain types and quantities of hazardous materials will be covered under the new security plan regulation
- Considers physical and chemical properties, quantities shipped, mode of transportation, past terrorist use, potential use, availability of the materials and how they could contribute to a security incident





# Class/Division PHMSA Final Rule Security Plan Revisions

- 1.1 Any quantity
- 1.2 Any quantity
- 1.3 Any quantity
- 1.4 Placarded quantity
- 1.5 Placarded quantity
- 1.6 Placarded quantity
- 2.1 A large bulk quantity
- 2.2 A large bulk quantity of materials with an oxidizer subsidiary
- 2.3 Any quantity





# Class/Division PHMSA Final Rule Security Plan Revisions (Cont...)

- 3. PG I and II in a large bulk quantity; Placarded quantity desensitized explosives - liquid
- 4.1 Placarded quantity desensitized explosives - solid
- 4.2 PG I and II in a large bulk quantity
- 4.3 Any quantity
- 5.1 Division 5.1 materials in PG I and II, and PG III perchlorates, ammonium nitrate, ammonium nitrate fertilizers, or ammonium nitrate emulsions or suspensions or gels in a large bulk quantity
- 5.2 Any quantity of Organic peroxide, Type B, liquid or solid, temperature controlled





# Large Bulk Quantity

## Definition of Large Bulk Quantity:

- “Large Bulk Quantity” refers to a quantity greater than >
- 3,000 kg (6,614 pounds) for solids
- 3,000 liters (792 gallons) for liquids
- gases in a single packaging such as a cargo tank motor vehicle, portable tank, tank car, or other bulk container





# Overview of the Security Requirements

- Security plan requirements
- Security awareness training
- In-depth security training
- Initial and recurrent training and record keeping
- Security plan administration







# Security Threat Assessment

**Security threat assessment for hazardous material transportation created and prepared for:**

- Hazardous materials in transportation
- Storage incidental to transportation





# Elements of a Security Plan

**Security plans must include the following elements:**

- Personnel security
- Unauthorized access
- En route security





# Security Plan Components

## Required components are:

- Security plan must be in writing
- Plan must address security threat assessment
- Must detail security duties for each position or department responsible for implementing the plan
- Plan must be revised and/or updated as necessary to reflect changing circumstances
- Retained for as long as it remains in effect.
- Plan must be reviewed at least annually

\$172.502





# Security Plan Components (Cont...)

- Most recent version of the plan must be available to employees
- All employees must be notified of any revised or updated changes
- A plan for training hazmat employees in accordance with 172.704 (a) (4) and (a) (5)
- Must make the plan available upon request to authorized official of the US DOT and Homeland Security

§172.802





# Security Plans Approved by Other Organizations

- HM-232 permits security plans that conform to regulations or standards issued by other Federal agencies, international organizations, or industry groups
- Examples may include security requirements imposed by USCG, DOD, NRC, UN, IMO, or TSA

§172.804





# Security Assessment

**To develop a security plan, you should begin with a security assessment.**

- Identify hazardous materials handled and identify them with the potential use as a weapon or target of opportunity.
- Review current activities and operations from a transportation security perspective.
- Ask yourself, **“What are we doing now? What could go wrong? What can we do differently?”**





# Additional Information

**Up-to-date information is a key element of any security plan. You should consider methods to:**

- Gather as much data as you can about your own operations.
- Develop a communications network to share best practices and lessons learned.
- Share information on security incidents to determine if there is a pattern of activities
- Revise your security plans as necessary to take into account changing circumstances and new information.

§172.804







# In-Depth Security Training

- Each hazmat employee required to have a security plan who handles hazardous materials, performs a regulated function or is responsible for implementing the plan must be trained concerning the plan and its implementation
- Security training must include:
  - Company security objectives
  - Organizational security structure
  - Specific procedures
  - Specific security duties and responsibilities for each employee
  - Actions to be taken by each employee in the event of a security breach

172.704 (a) (5)





# Training Source

- Training may be provided by the employer or other public or private sources
- USDOT does not *approve, endorse, or certify* anyone's training program or product.
- The hazmat employer *certifies* that a hazmat employee has been trained.
- Hazmat training received from a previous employer or other source can be used to meet the HMR requirements provided that a current record of training is obtained from the previous employer.

§172.702(c) &





# Testing

- Each hazmat employer must ensure that every hazmat employee is tested on the required training subjects.
- The HMR does not set testing methods or standards. The responsibility is on the hazmat employer.
- The regulation does not specify the type of test or grading. This could be a **written** test, **verbal** test or **performance** test. Remember that this must be properly documented.





# Employee Training Record

## 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

# Sample Training Record





# OSHA or EPA Training

Training completed to meet OSHA or EPA requirements that addresses training specified in §172.704(a) may be used to satisfy the HMR training requirements.



§172.704 (b)





# Record Retention

## A record shall be:

- Created and retained by hazmat employer
- A current training record must be retained as long as hazmat employee is employed by that employer, and
- Retained for 90 days after employee is no longer employed by that employer



§172.704(d)

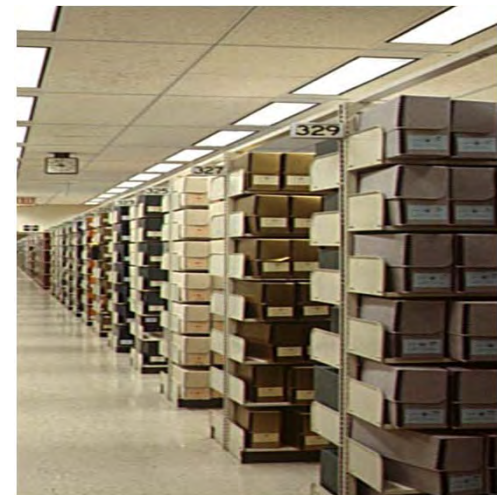




# Recordkeeping

## The training record must include:

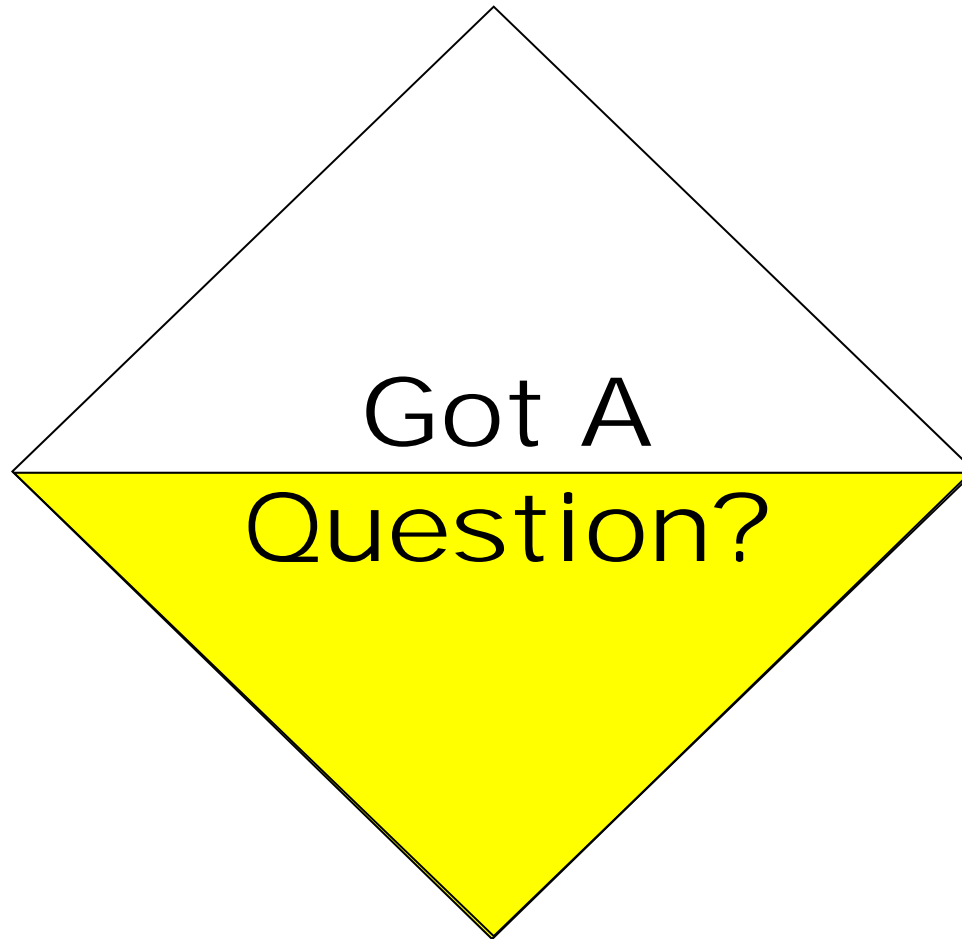
- Hazmat employee's name
- Most recent training completion date
- Description, copy, or location of the training materials
- Name and address of person providing the training
- "Certification" that the hazmat employee has been trained and tested



§172.704 (8)









# Where to Find More Information...

**PHMSA**  
Pipeline and Hazardous Materials  
Safety Administration

U.S. Department of Transportation

Contact Us | FAQs | Site Map

PHMSA Home | Pipeline Safety | **Hazardous Materials Safety**

Go Advanced Search

**2012 EMERGENCY RESPONSE GUIDEBOOK**  
A Guidebook for First Responders Detailing the Initial Phase of a Pipeline "Event" (Spill, Leak, Release, etc.)  
2012 EMERGENCY RESPONSE GUIDEBOOK

DOT Distributes Over 2 Million New Hazardous Materials Emergency Guidebooks to Nation's First Responders

1 2 3 4 5

**Hazmat News** | **Most Viewed Info**

**Safety Advisories**

- PHMSA Continues Push to Clarify & Update Hazmat Rules
- 2011 Hazmat Penalty Action Report
- Hazmat Harmonization Rule on Air Packaging Issued
- PHMSA seeks comment on transportation of lithium batteries
- PHMSA Proposes Updating Hazmat Rules to Better Balance Safety Standards and Regulatory Requirements

**Find PHMSA Offices**

Key Officials  
Regional Offices

**PHMSA/Hazmat Resources**

**Regulations & Rulemakings**  
PHMSA regulates and ensures the safe movement of hazardous materials.

**Data & Reports**  
PHMSA tracks data on the frequency of failures, incidents and accidents.

**Permits & Approvals**

<http://hazmat.dot.gov>





# Hazardous Material Info-Center

1-800-HMR-4922

(1-800-467-4922)

**E-mail: [infocntr@dot.gov](mailto:infocntr@dot.gov)**

**Hours of Operation: 9 am – 5 pm ET**



- Obtain answers to HMR questions
- Request copies of Federal Register, special permits or training materials
- Report HMR violations
- Fax on Demand

