

Transporting Dangerous Goods: Compliance Management

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About the Speaker



Isaac Powell:

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14 years EH&S experience with implementing compliance management programs including regulatory reporting, emergency response, hazardous waste and dangerous goods management

Currently Product Manager for 3E Technical Services including Emergency Response, Hazardous Waste Management, Transportation, Classification & Regulatory Reporting Services

Member of the AWMA, AHMP, National Fire Protection Association & International Code Council

BA from at the Univ. of Michigan, Ann Arbor

Global Presence: Centers of Excellence

- Worldwide Corporate Headquarters
 - Carlsbad, CA
 - 3E Product Development & Support
 - 24-7-365 EH&S Mission Control Center
- 3E Company Europe
 - Copenhagen, Denmark
 - MSDS Authoring and Professional Services
- 3E Company Canada
 - Montreal, QC, Canada
 - MSDS Solutions Center
- Ariel Global Research & Development Operations
 - Bethesda, MD
- Ariel MSDS Authoring & Related Services
 - Kingsport, TN
- MSDgen Product Development & Support
 - Massillon, OH
- Japanese Presence and Strategic Partnership
- Global Field Sales Presence



Agenda

- Shipping Policy & Registration
- HazMat Identification & Classification
- Packaging Requirements
- Hazard Communication
 - Marking, Labeling, Placarding, Shipping Papers, Emergency Response
- Exceptions & Special Provisions
- Training & Record-Keeping
- Enforcement Overview

Major Transportation Regulations

- **DOT** – U.S. Department of Transportation
 - **HMR** – Hazardous Materials Regulations
- **IMDG** - International Maritime Dangerous Goods Code
- **IATA** - International Air Transport Association Dangerous Goods Regulations
 - **ICAO** – International Civil Aviation Organization
- **TDG** – Canadian Transportation of Dangerous Goods

Corporate Policy/Systems

- ✓ Does the company have a policy for DOT hazardous materials compliance?
- ✓ Does the company have a hazardous materials identification system in place?
- ✓ Does the company have any specific process that helps increase hazardous materials safety?
- ✓ Does the company maintain MSDS for hazardous materials?

DOT Registration

- 49 CFR 107.601 - 107.620
 - Shippers and carriers who intend to offer certain types for transport or carry placarded loads of hazardous materials must be registered with the DOT
 - A registration fee applies and the must be renewed annually.

Registration Checklist

- ✓ Is the carrier/shipper required to be registered with the DOT?
- ✓ Is the carrier/shipper registered?
- ✓ Is the registration being renewed annually?
- ✓ Is a copy of the registration application and certification of Registration retained?

Hazmat Training Requirements

Applicable to businesses that:

- Package hazardous materials for shipment (Shippers)
- Transport hazardous materials for hire (Common Carriers)
- Distribute hazardous materials from one location to another (Private Carriers)
- Accept, unload, or unpack hazardous materials deliveries (Receiver)

HazMat Training Requirements

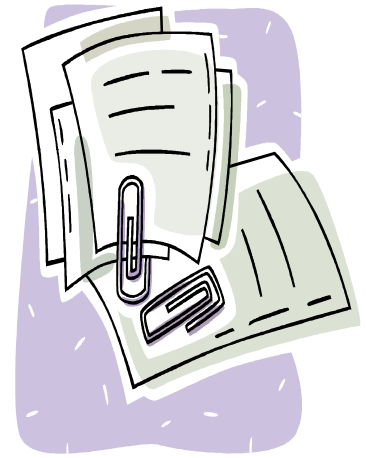
- 49 CFR 172.700
 - Requires employers to develop and implement a hazardous materials transportation safety program
 - Required for ALL Hazmat Employees
 - Initial training must occur within 90 of hiring into hazmat position
 - DOT requires retraining every 3 yrs
 - IATA requires retraining every 2 yrs

Training Requirements

1. **General Awareness:** Employees must have a basic understanding of the dangers associated with hazardous materials
2. **Function Specific:** Employees must be trained on all aspects of transporting hazardous materials that relate to their job functions, including, proper packaging, labeling, and documentation requirements
3. **Safety:** Employees must know the risks and appropriate safety procedures for handling hazardous materials, responding to hazardous materials incidents and methods and procedures for accident avoidance
4. **Security Awareness:** Employees must have 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.
 - If required, Security Plan specifics must be covered

Security Plans

- Required for offerors of hazmat for certain materials
- Must be in writing
- Security Plans must address:
 - Assessment of Risk
 - Personnel Security
 - Unauthorized Access
 - En Route Security
- Retained as long as in effect and revised as necessary for the circumstances
- Made available to appropriate employees for implementation



Training Records

- 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

Employee Training Recordkeeping

- 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

Training Checklist

- ✓ Have all hazmat employees been identified
- ✓ Does the training include all required elements?
- ✓ Are all hazmat employees provided HMR required training prior performing hazmat functions?
- ✓ Are all hazmat employees provided with HM required recurrent retraining every 3 years
- ✓ Are all hazmat employees' records for previous 3 years training retained for as long as the employee is involved with hazmat functions?
- ✓ Can training materials and records be produced when requested?

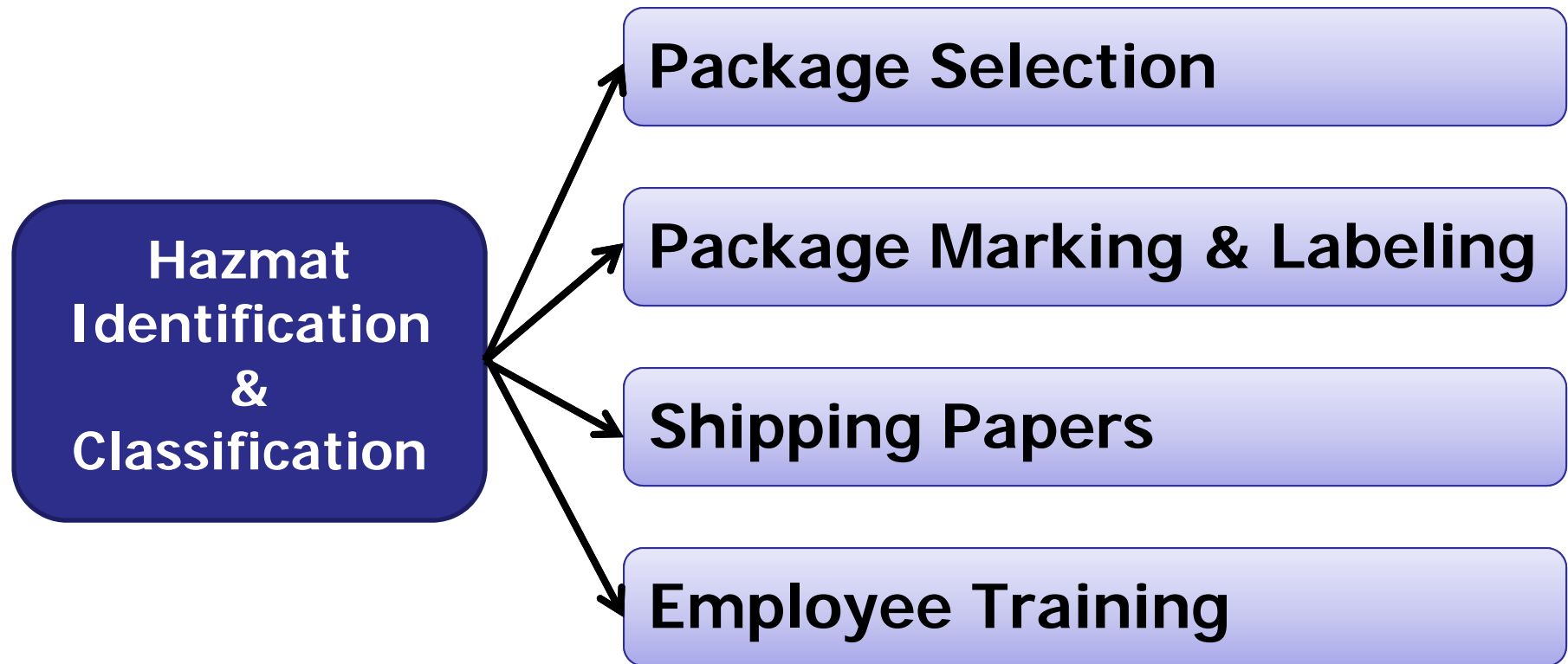
Primary Responsibility:

- The original packager/shipper bears primary responsibility for packaging compliance
- Subsequent shippers, however, are also held responsible for compliance
- Carriers which accept and transport hazmat are also responsible—drivers must be able to recognize non-compliance when readily visible and apparent.

Hazardous Materials Classification

- A hazardous material is any substance or material capable of posing an unreasonable risk to health, safety, and property when transported in commerce
- Must ensure hazardous materials are identified and classified properly for shipment
- Relate to Hazardous Materials Table found in 49CFR 172.101
- Mode selection can affect classification and shipping requirements

Classification and Identification



Hazardous Materials Table

Column	Description	Example
1	Symbols	G
2	Proper Shipping Name	Flammable liquids, corrosive, n.o.s.
3	Hazard Class	3
4	UN/NA Identification Numbers	UN2924
5	Packing Group	I
6	Labels Required	3, 8
7	Special Provisions	T14, TP2
8 A, B, C	Packaging (Exceptions, Bulk, Non-Bulk)	None, 210, 243
9 A, B	Quantity Limits (Pass Air/Rail, Cargo Air)	0.5L, 2.5L
10 A, B	Vessel Stowage (Location, Other)	E, 40

49CFR 172.203(k)

Technical Names

- Required for proper shipping names that are considered “generic”
 - Indicated by “G” in Column 1 of HMT
- DOT requires that name(s) of the hazardous material(s) be listed in parentheses after the proper shipping name on shipping papers and packaging

Appendix A:

Hazardous Substances/RQ

- A chemical identified on the Hazardous Substances List when present within a package in a quantity greater than or equal to the Reportable Quantity (RQ)
- Spills of these chemicals exceeding the RQ must be reported immediately to the National Response Center
- “RQ” must appear on the shipping paper either before or after the basic description and marked on the box or package of non-bulk packaging
- The name of the hazardous substance constituents(s) must be entered in parentheses on the shipping paper and on the package unless identified by the proper shipping name

Appendix B:

Marine Pollutants

- Material listed in A Appendix B to 172.101 has been proven to be lethal to fish and wildlife when appearing in the concentrations of 10% or more.
- Applies when a product is being transported across a waterway
- If the proper shipping name for hazmat does not identify it as a marine pollutant the words "Marine Pollutant" must appear in the shipping description

Classification Checklist

- ✓ Can a list of potential products that would be shipped be produced?
- ✓ Have all items being transported been evaluated to determine to be regulated for each mode of shipment?
- ✓ Are materials classified prior to arranging for transportation?
- ✓ Who is primarily responsible for classifying materials for shipment?

Packaging

The key to recognizing a DOT authorized packaging is to:

- Determine packaging type: non-bulk, bulk, DOT Exemption or other that is appropriate.
- Identify proper shipping description in 172.101 table and verify packaging is authorized in referenced section of Column 8(a), 8(b) or 8(c).
- Interpret UN markings in order to verify compliance

Packaging examples, all of which represent certified packaging options.



Performance Oriented Packaging

- Packaging which is designed especially to transport specific hazardous material
- Type of packaging based on the ability of packaging to perform to a specified level of integrity when subjected to performance tests
- A container can be manufactured in any fashion as long as the resulting package successfully conforms to the test provisions located in § 178.600.

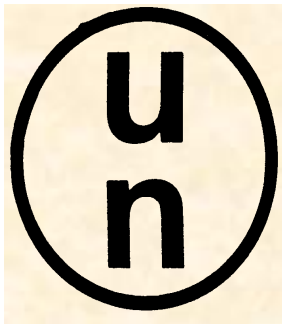
PoP Hit List

- Valid Certification
- Maximum Weights & Compatibility
- Package Closure & Components
- Unauthorized Variations

Interpreting UN Markings

49CFR 178.503(a)(1-11)

- 1 - UN symbol as illustrated
- 2 - Packaging ID code designating type
- 3 - Letter identifying packing group - X, Y, Z
- 4 - Specific gravity (solids = max. gross mass in kg.)
- 5 - Single composite for liquid = test pressure in kPa
- 6 - Last two digits of manufacture year



1H1/Y1.4/200/98...

Interpreting UN Markings



1A1/Y1.4/150/02/D/BAM 4711-XY

UN	Symbol of the United Nations (UN in a circle)
1A1	Code indicating the name of the type of packaging
Y	Y = Packaging Group II or III
1.4	Relative density, for which the prototype was tested
150	Test pressure in kPa (Kilopascal) of the hydraulic internal pressure test
02	Year of manufacture
D/	Symbol of the country that issued the approval
BAM	Approving authority/institution
4711	Test certificate number
XY	Manufacturer identification specified by the responsible authority

Interpreting UN Markings



PoP Packaging Examples



Air Bags



Glass Bottles

Design Qualification Test

(written report required)

- Includes:**
- * Drop Test (varies on height according to PG)
 - * Leak-proofness
 - * Hydrostatic pressure
 - * Stack Test (min. of 10 feet in height)
 - * Cooperage test (wooden barrels)
 - * Closures

Periodic retest: Single/composite = 12 months
combination = 24 months



Packaging Checklist

- ✓ Is packaging available that is compatible with the materials that are being shipped?
- ✓ If PoP is used, are instructions available on proper assembly and closure?
- ✓ Are they being followed?
- ✓ Is PoP addressed in function specific training?

Hazard Communication

- Shipping Papers

“Regulated Medical Waste, 6.2, UN3291, PG II”

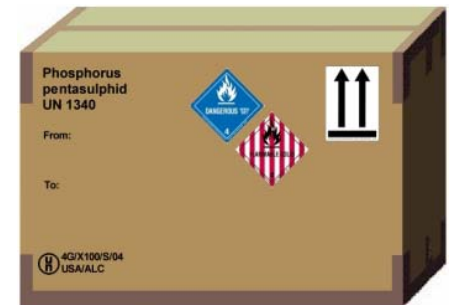
- Marking

“Regulated Medical Waste, UN3291”

- Labeling

“Biohazard Symbol”

- Emergency Response Information



Marking

- Words used to communicate Shipping Name and ID number
- Includes address, handling requirements
- Must match shipping paper
- Cannot indicate presence of hazmat in a package where no hazmat is present

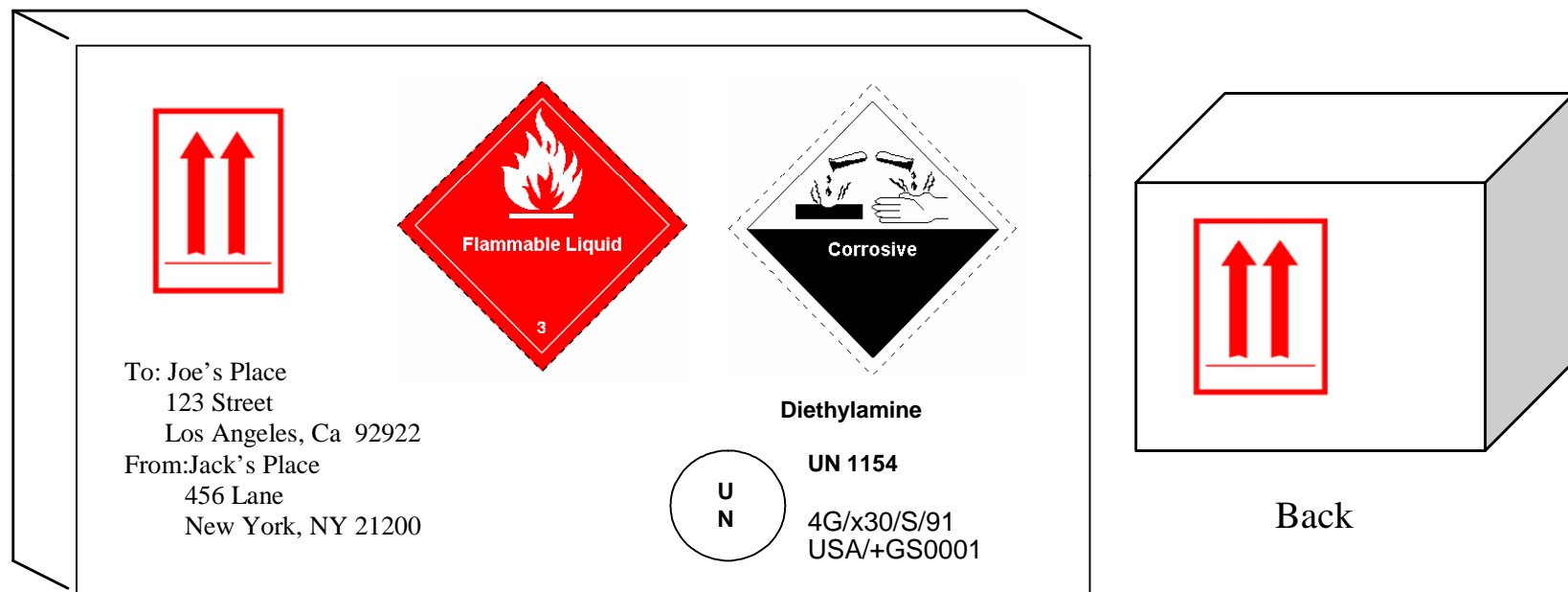


Labeling



- Specific to size, color, shape, and images on label
- Communicates the hazard of the material, or any special warnings
- Cannot be torn, written on, or photocopied
- Other “labels” (marketing, etc) cannot look like hazmat labels

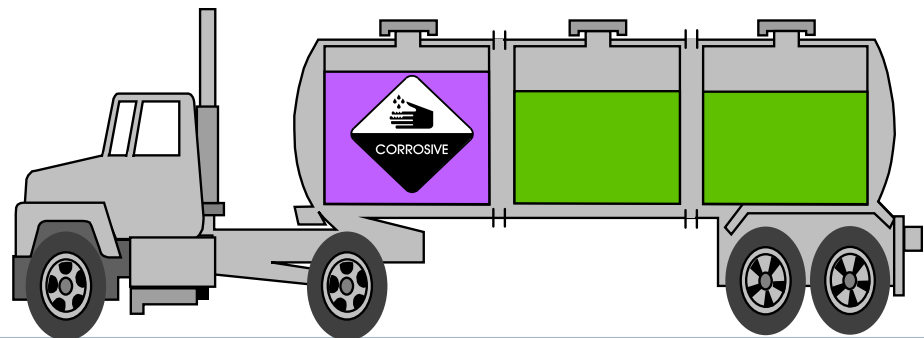
Marking and Labeling Example



- Pictured below is an example of a properly marked and labeled package.

Vehicle Placarding

- Communicates the hazards on a vehicle
- Required for hazmat loads \geq 1001 lbs.
- Designed to be seen by emergency responders from a safe distance of a vehicle
- Responsibility of OFFERER to provide placards to carrier
- Can't indicate hazardous materials on vehicle if none are present



Marking & Labeling Checklist

- ✓ Are hazardous materials packages properly marked and labeled prior to shipment?
- ✓ Are labels and placards available in the shipping area?
- ✓ Do proper marks, including proper shipping names and UN numbers appear on the package?
- ✓ Are labels properly displayed?
- ✓ Do you ship placarded loads?

Shipping Papers

- Must be in English
- Basic Shipping Description
- Sequence
- Additional Information
- Shippers Certification
- Record Retention
 - Min 2 yrs or 3 yrs waste manifests
 - Can be retained electronically

Figure 9-4. Example of Shipping Paper

SHIPPING PAPER		Page 1 of 1	
To:	Wafers R Us 88 Valley Street Silicon Junction, CA	From:	Essex Corporation 5775 Dawson Avenue Goleta, CA 93117
QTY	HM	DESCRIPTION	WEIGHT
1 cyl	RQ	Phosgene, 2.3, UN1076, Poison Inhalation hazara, Zone A	25 lbs
This is to certify that the above named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.			
Shipper:	Essex Corp	Carrier:	Knuckle Bros.
Per:	Shultz	Per:	
Date:	6/27/94	Date:	
SPECIAL INSTRUCTIONS: 24 Hr. Emergency Contact, Ed Shultz, 1-800-555-5555			

Annotations:
"RQ" means that this is a reportable quantity.
Proper shipping name from Column 2 of the Hazardous Materials Table.
Hazard Class from Column 3 of the Table.
ID Number from Column 4 of the Hazardous Materials Table.

Developing the Basic Shipping Description

Ü **S**hipping Name

Ü **H**azard Class

Ü **I**dentification Number

Ü **P**acking Group

Regulated Medical Waste, 6.2, UN3291, PG II

Emergency Number

- 24 Hour Emergency Phone Number
- Must be located on the shipping paper
- Must be monitored at all times the load is being transported or stored incidental to transportation
- New requirements Mandatory starting October 1, 2010

Shipper Certification

- Certifies that the package has been prepared according to the regulations
- Must be signed by a qualified employee who has been trained and certified

This is to certify the above-named materials are properly classified, described, packaged, marked and labeled/placarded, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation”

Shipping Paper Checklist

- ✓ Are shipping papers produced for regulated hazmat shipments?
- ✓ Are shipping papers in order? Including sequence of information, complete, legible, signed?
- ✓ Signed by a trained hazmat employee?
- ✓ Retained for at least 2 years (Manifest 3 yrs)

Vehicle Segregation & Loading

- Packages must be secured against movement
- The vehicle hand break shall be set
- Containers must be braced to prevent motion, and loaded to protect valves and other fittings
- Hazardous materials which may react violently if mixed together may not be loaded, transported, or stored together
- Segregation Table (49CFR 177.848)

Shipping Exceptions

Requirement	Fully Regulated	Limited Quantity	ORM-D	Small Quantity	Combustible Liquid
Labeling	√				
UN Packaging	√				
Placards	√				
Segregation	√				
Shipping Papers	√	√			
Markings	√	√	√	√	

Avoid the Consumer Commodity Trap

- ORM-D shipments must meet specified packaging, marking and weight requirements
- ORM-D is *Regulated*
 - Multi-Modal Shipments
 - Product Returns
 - Storage/Disposal



Special Permits and Approvals

- A Special Permit or Approval is a document issued by PHMSA that authorizes a person to perform a function that is not currently authorized under the authority of the HMR
- Formerly known as an exemption special permit to be granted up to two years for new special permits and up to four years for renewals.
- In many instances, the Regulations require approvals and/or registrations prior to transportation in commerce.
- NEW On-Line Special Permit & Approval Application Process
- Example: DOT-SP 7235

Enforcement Penalties

Two Penalty Types:

- Civil
- Criminal



Civil Penalties

- \$275 - \$50,000 per violation/ per day
- Up to \$100,000 if the violation results in death, serious illness, severe injury or substantial destruction of property
- Minimum \$450 penalty for training violations

Criminal Penalties

For willful or reckless violations:

- Individuals: Up to \$250K & 5 yrs imprisonment
- Corporations: Up to \$500K and 5 yrs imprisonment
- Criminal penalty of up to 10 yrs imprisonment for willful violation resulting in the release of a hazardous material that results in death or bodily injury

Enforcement Agencies



Under delegations from the Secretary (49 CFR Part 1)



Other Enforcement Agencies

- **TSA** – Transportation Safety Administration
- **CBP** – US Customs & Border Protection
- State Highway Patrol
- Local Police

- **Carriers (Undeclared Hazmat Report)**

Spills or accidents that result in an injury or damage to the environment sometimes require reporting by the shipper to the U.S. DOT, in addition to other applicable agencies.

How Companies are Selected

- Ranked in priority based on the risk of endangerment to the public, property and the environment.
- The risk assessment model defines five main color coded priority categories.
- Each category of activities is ranked by precedence of risk and hazard posed.

Violation Determination

PHMSA must find either that:

- 1) You had actual knowledge of the **facts** giving rise to the violation, or
- 2) A reasonable person acting in the circumstances and exercising reasonable care would have that knowledge.

PHMSA does not need to find that you actually knew about, or intended to violate, requirements in the Federal hazardous material transportation law or the HMR

PHMSA Criteria for Penalties

Baseline Penalty + or - :

- ✓ Nature and circumstances of violation
- ✓ Extent and gravity of violation
- ✓ Degree of respondent's culpability
- ✓ Respondent's history of prior violations
- ✓ Respondent's ability to pay
- ✓ Effect of penalty on respondent's ability to stay in business
- ✓ Such other matters as justice may require (especially corrective actions).

Enforcement Examples:

1. Shipper: Offered corrosive liquids, n.o.s., 8, in unauthorized non-UN standard packaging; offered corrosive liquid, n.o.s., 8, accompanied by a shipping paper that listed additional information before the basic shipping description labels
 - Penalty: \$4,930
2. Shipper: Offered batteries, wet, non-spillable, 8, as undeclared, without shipping papers, package markings, and hazard warning labels
 - Penalty: \$12,000

If You Receive a Violation

Respond within 30 Days by:

- 1) Paying the proposed assessment
 - On-line payment available through www.pay.gov
 - 2) Sending an informal response, which can include a request for an informal conference
 - 3) Request a formal hearing
-
- ✓ You can appeal to the PHSMA Administrator
 - ✓ You can propose a compromise offer

Common Mistakes to Avoid

- Be aware of modal exceptions
- ORM-D is still Hazmat
- Know who does what in your company
- Know your products, identify your hazards
- Maintain documentation
 - Training Program, Training Records, Security Plan, Shipping Papers
- Offer recurrent training
- If your not sure, ask

Questions?



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