

**Hazardous Materials
Transportation**

**Risk
Management**

PROGRAM

THE FOLLOWING BRIEFING PROVIDES A CONCISE OVERVIEW OF THE HAZARDOUS
MATERIALS TRANSPORTATION SAFETY PROGRAM

**Risk Based Decision Making
in the
Hazardous Materials Safety Program**



**U.S. Department of Transportation
Research and Special Programs Administration**

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HOME

NEXT
SLIDE



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Mission

To administer a comprehensive nationwide safety program to protect the Nation from the risk to life, health, property, and the environment inherent in the transportation of hazardous materials by all modes of transportation.



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Federal Hazardous Materials Transportation Law

"The Secretary of Transportation shall designate material or a group or class of material as hazardous when the Secretary decides that transporting the material in commerce in a particular amount and form may pose an unreasonable risk to health and safety or property."

HOME

NEXT
SLIDE



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Federal Hazardous Materials Transportation Law, cont.

"The Secretary shall prescribe regulations for safe transportation of hazardous materials in intrastate, interstate and foreign commerce."



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The Resulting Hazardous Materials Safety Program and Regulations:

- Are risk based
- Use data, information, and experience to define hazardous materials and manage the risk hazardous materials present in transportation
- Are prevention oriented

HOME

NEXT
SLIDE



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The Hazardous Materials Program is a Risk Management System that is:

- Focused on identifying and communicating hazards and risks
- Designed to reduce the probability and quantity of a hazardous material released and mitigate release consequences



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The Hazardous Materials Program is a Risk Management System that is:

- Designed to address a very broad set of hazardous materials, all modes of transport (except bulk marine and pipeline) and all routes
- A minimum standard which does not specifically address all risk management parameters a shipper or carrier may need to employ in its risk management program

HOME

NEXT
SLIDE



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Risk Management is the systematic application of policies, practices and resources to the assessment and control of risk affecting human health and safety and the environment. Hazard, risk and benefit/cost analysis are used to support development of risk reduction options, program objectives, and prioritization of issues and resources. Performance measures are monitored to support performance evaluation.



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Program Elements:

Risk Assessment --Addresses Hazards, Consequences, and Probability in Hazardous Materials Transportation:

< **Classification system is a hazard analysis system. (Explosives, Flammable Gases, Oxidizers, Radioactive Material, Corrosives, Poisons, Infectious Substances, etc.)**

< **Consequences and probability are addressed by:**

Hazardous Materials Information System (DOT 5800.1)

Commodity Flow Survey

Chemical/Substance Manufacturing, Use, Transportation Studies

Special Analysis (e.g., National Transportation Risk Analysis,

Aircraft Cargo, Shipment Counts)

Public Comments on Rulemakings

HOME

NEXT
SLIDE



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Program Elements: (continued)

<u>Risk Management</u>	--	Control of Hazardous Materials Transportation Risk:
Regulations:		Classification, Communication, Packaging, Testing, Training, Approvals, Routing, Registration
Compliance/Outreach:		Insuring industry and the public are aware of risks and regulations to control risk. Training, Information Dissemination, Enforcement
Alternatives to Regulations:		Exemptions Program
Mitigation:		Emergency Response Guide, Grants for Training and Planning



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Regulations – Fundamental Objectives:

- Safety for workers and the public
- Protect property and the environment
- Minimize cost to the public, industry and government
- Minimize economic and social disruption

HOME

NEXT
SLIDE



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Regulations – Fundamental Objectives, cont.:

- Provide uniform regulations that support consistent hazard classification and packaging standards and clear hazard communication
- Provide regulations in harmony with world-wide regulatory system which facilitates and reduces the cost of foreign trade



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Regulations – Process Objectives:

- Open process with involvement of all stakeholders
- Clear hazard and risk communication
- Regulations are needed, provide substantial benefit, and benefit exceeds cost of compliance
- Regulations are understandable and facilitate compliance

HOME

NEXT
SLIDE



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Regulations – Process Objectives, cont.:

- Easy public access to information –
 - < Docket room and web site provide access to regulations, interpretations, rulemakings, exemptions, and public comments on issues
 - < Web site also provides information on program, organization, issues, international standards activities, training, and other commonly needed information



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Exemptions:

- Alternative risk based regulations to allow rapid implementation of new technologies and more efficient transportation operations
- Granted when an alternative is demonstrated to present a level of safety (risk) equivalent to that provided by the regulations

HOME

NEXT
SLIDE



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Regulatory Compliance:

- Outreach, training, and information dissemination to promote awareness and knowledge are essential elements of risk management *
- Enforcement *
 - * emphasis on high risk materials and activities (e.g., toxic and flammable gases, toxic inhalation hazard liquids, explosives, and air transportation)
- Risk and benefit/cost assessments are used to select appropriate course of action to protect public safety (e.g., safety notices, recalls, down-rating, and use restriction)



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Emergency Preparedness and Response:

- Handbook Of Chemical Hazards Analysis Procedures and the Automated Resource for Chemical Hazard Incident Evaluation (ARCHIE) – risk analysis tool to support emergency preparedness and response planners
- North American Emergency Response Guidebook – guidance for first responders
- Planning and Training Grants – funds to State and local emergency preparedness and emergency response organizations for planning and training

HOME

NEXT
SLIDE



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Hazardous Materials Incident Database:

- RSPA collects information on HM incidents involving death, injury, property damage, spills, evacuations, or transportation facility closures
- The incident database provides information on many factors concerning a HM incident (e.g., date, time, location, shipper, carrier, consignee, release consequences, quantities spilled, incident causation, and package)



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Incident Data Shortcomings and Future Plans:

- The database does not provide data on intrastate highway transportation. This will change later this year.
- An ANPRM for DOT Form 5800.1, Hazardous Materials Incident Report, is pending aimed at increasing the usefulness of data collected for risk analysis and management by government and industry.
- Collection of appropriate data is crucial in managing transportation risk and monitoring and measuring overall program effectiveness. It is anticipated that modest increase in data about potentially high consequence incidents would be offset by reduced reporting requirements for incidents with less likely impact.

HOME

NEXT
SLIDE



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Examples of Current Risk Analysis and Management Studies:

- National Risk Assessment for Selected Hazardous Materials in Transportation
- Analysis of the Risk Associated with Transportation of Hazardous Material in Aircraft Cargo Compartments



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Examples of Current Risk Analysis and Management Studies, cont.:

- Development of Risk Management Framework for Hazardous Materials Transportation
- Technical Support for the National Advisory Committee for Developing Acute Exposure Guidelines Levels (AEGLS) for Selected Chemicals

HOME

NEXT
SLIDE



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Future Plans:

- Improve data and methodologies to support risk analysis and risk management
 - < Improve access and sharing of data
 - < Determine whether a standard hazard assessment and ranking methodology is needed
 - < Improve exposure data
 - < Develop and expand partnerships with industry



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Future Plans, cont.:

- Expand use of risk / cost-benefit techniques in rulemaking and exemption evaluation
- Better document risk analysis and risk management efforts
- Develop risk based hazardous materials transportation performance measures
- Develop risk guidelines – how safe is safe enough

HOME

NEXT
SLIDE