PRISM SOLUTIONS

RESEARCH BRIEF

Research Request:

Hazardous Materials—General Information

Research Response:

Hazardous Material– "A substance or material capable of posing an unreasonable risk to health, safety, or property when transported in commerce." (http://hazmat.dot.gov)

Recognition of hazardous materials is an important part of any company operating corporate aircraft. Best practices lie within the airline industry and they set the standard. While training may be more elaborate for those who are authorized to carry hazardous materials, recognition training is required for everyone. Employees are required to complete a Hazardous Materials Recognition Training Program within the past 12 calendar months. Afterwards, they must complete recurrent training every year. There is no clear definition of a specific course or school, only guidelines for training. It is acceptable for companies to have "in-house" training and testing provided they follow the guidelines. According to the FAA, "The material will be covered in such a scope and depth as to provide each individual with sufficient knowledge of applicable regulations and procedures to safely accomplish their specific duties." The recommended training time is 4 hours for initial training and 2 hours for the recurrent training.

HAZMAT General Recognition Training *(FAA National Operations Training Manual)*

A. Company Policy and Training Requirements
B. Applicable Regulatory Materials
C. Hazard Class Definitions and Examples ~ 49 CFR 171.8
D. Enforcement
E. Hidden Shipment Indicators
F. Suspicious Cargo and Baggage Awareness
G. Communication Components of Dangerous Goods ~
    - Shipping Papers ~ 49 CFR Part 172 Subpart C
    - Marking ~ 49 CFR Part 172 Subpart D
    - Labeling ~ 49 CFR Part 172 Subpart E
H. Dangerous Goods/Hazardous Materials COMAT
    - Identification and Recognition
    - Hazardous Materials Onboard Aircraft ~ Appendix C
    - Replacement Components

- Consumable Materials
- Specific DG COMAT Exception ~ 49 CFR 175.10(a)(2)(iii)
- Facility Storage, Safe Movement, and Handling Requirements ~ 49 CFR 175.78
- Specific Hazards and Precautionary Measures
- Proper Disposal Procedures for DG COMAT
- Environmental precautions
- Transportation precautions

I. Reporting Incidents and Discrepancies ~ 49 CFR 171.15, 171.16, 175.31, and Appendix E
J. Exceptions for DG/HM ~ 49 CFR 175.10
Module 2 – Testing ~ 49 CFR 172.702(d)

EMERGENCY RESPONSE CONTACTS – RECOMMENDED LIST

A list of emergency contact numbers should be readily available to employees. They should be clearly marked, and personnel aware of their location. Its important to have these numbers posted for quick response to an emergency. This is an all- around good safety practice.

NOTE: These contact numbers are not required at the time of program submission to the FAA and should be tailored to each station location.

CONTACT PHONE NUMBER *(FAA National Operations Training Manual)*

- Local FAA Security Office
- FAA Regional Operations Center (24-hour contact)
- FAA Flight Standards District Office (FSDO) (Holding FAA Certificate)
- Airport Police
- Fire Department
- Ambulance/Hospital
- Center for Disease Control 1-800-232-0124
- CHEMTREC 1-800-424-9300
- State Department of Emergency Services
- Hazardous Materials National Response Center (NRC) 1-800-424-8802
- For Radioactive Materials: Department of Energy (DOE) 202-586-8100
- Nuclear Regulatory Commission 301-816-5100
- State Radiation Control

NOTE: The North American Emergency Response Guidebook is a valuable resource when handling DG/HM incidents. http://www.tc.gc.ca/canutec/en/guide/ergo/GuidePDF.htm

Discrepancy/ Incident Reporting

Employees should also be aware of how to report hazardous materials and what to do in the event of an emergency. According to the DOT, a telephone report must be completed within 12 hours of an incident. A written report must be followed within 30 days.

Situations where a discrepancy report is required:

- The package/baggage is found to contain hazardous material after it was accepted as non-hazardous material. In other words, it was undeclared.
- If the hazardous material is not labeled, marked, or certified in accordance with 49 CFR 175.30(a)

National Response Center- 800-424-8802

A telephone incident report must be made if: (US DOT Guide)
a) A person is killed; or
b) A person receives injuries requiring hospitalization; or
c) An evacuation of the general public occurs lasting one or more hours; or
d) One or more major transportation arteries or facilities are closed or shut down for one hour or more; or
e) The operational flight pattern or routine of an aircraft is altered; or
f) Fire, breakage, spillage, or suspected radioactive contamination occurs involving shipment of RAM; or
g) Fire, breakage, spillage, or suspected contamination occurs involving shipment of infectious substances (etiologic agents); or
h) A situation exists of such a nature (e.g., a continuing danger to life exists at the scene of the incident that, in the judgment of the carrier, it should be reported to the NRC even though it does not meet the criteria of paragraph 1)(a) thru (g) of this section.

Hidden Shipments

Another part of the training includes the recognition of possible hazardous materials hidden in shipments. The list includes parts such as auto parts, electrical equipment, household goods, and even toys. Many passengers are unaware of items that may be considered hazardous materials. However, a hazardous materials package is required to have labels clearly visible for easy identification. Hazardous materials warning signs should be clearly visible to employees and passengers. Emergency numbers should also be posted.

Passengers will also typically try to carry on items with them that they might not think are dangerous. For example, self-defense pepper spray may not exceed 4 fluid ounces and must be in the checked baggage. Both liquid and gas lighters are also prohibited aboard an aircraft, however, safety matches are allowed. The alcohol content of a beverage brought onboard must not exceed 70% alcohol content (140 Proof). This includes 95% grain alcohol and 150 proof rum.

Wheelchairs/Mobility Aids are accepted as baggage. The Batteries for the wheel chair must be disconnected and the terminal ends insulated. The word “non-spillable” should be written on the outside of the battery. If the wheelchair cannot be loaded in the up-

right position, the battery must be removed.

Click on the following attachment for a list of hazardous materials that can be carried onboard as long as they meet the exceptions provided by the DOT.

HAZMAT Examples *(FAA National Operations Training Manual)*

Aircraft Parts/COMAT May indicate the presence of chemical oxygen generators, flammable liquids/solids, corrosives, compressed gases, radioactive materials in aircraft parts and accessories, or general company materials.

Automobile Parts (car, motor, motorcycle) May contain cellulose paints, wet batteries, shocks/struts with nitrogen, air bag inflators/air bag modules, etc.

Breathing Apparatus/SCUBA May indicate compressed air or oxygen cylinders

Camping Equipment May contain flammable liquids, gas or solids

Chemicals Often found to be hazardous Cryogenic (Liquid) Indicates low temperature, low pressure, or nonpressurized gas such as Argon, Helium, Neon, and Nitrogen

Cylinders May indicate compressed gas

Dental Apparatus May contain hazardous chemicals such as resins or solvents

Electrical Equipment May contain magnetized materials or mercury in switch gear and electron tubes
Electrically powered May contain wet batteries apparatus (wheelchairs, lawn mowers, golf carts, etc.)

Frozen Fruit, vegetables May be packed in Dry Ice (Solid Carbon Dioxide)

Household Goods May contain hazardous materials such as paint, aerosols, bleaching powder, etc.

Instruments May conceal barometers, manometers, mercury switches, rectifier tubes, thermometers containing mercury.

Laboratory/Testing May contain various hazardous chemicals

Machinery Parts May include hazardous chemicals (adhesives, paints, sealants, solvents, etc.)

Medical Supplies/Equipment (Test Kits) May contain various hazardous chemicals

Pharmaceuticals May contain various hazardous chemicals

APPENDIX A (cont'd.)

Photo Supplies May contain various hazardous chemicals

Refrigerators May contain restricted gases or liquids

Repair Kits (or Spares or Spare Parts) May contain various hazardous materials (adhesives, solvents, cellulose paints, organic peroxides, etc.)

Samples for Testing May contain various hazardous materials (including infectious substances)

Swimming Pool Supplies May contain acid, chlorine

Switches in Electrical Equipment or Instruments May contain mercury

Tear Gas Dispensers Contains irritating material or pepper gas which is forbidden on passenger aircraft.

Toys May be made of celluloid or other flammable material.

Tool Boxes May contain flammable liquids, gases, adhesives, cleaners, corrosives, oxidizers, etc.

Vaccines May be packed in Dry Ice (Solid Carbon Dioxide)

Note 1: Articles which do not fall within the hazardous materials definitions of 49 CFR and which, in the event of leakage, may cause a serious cleanup problems or corrosion to aluminum on a long term basis must be checked by the shipper to at least ensure that the packaging is adequate to prevent leakage during transportation. These may include brine, powdered or liquid dyes, pickled foodstuffs, etc.

COMAT (Company Materials) *(US DOT Guide)*

This is another term for replacement items for installed equipment and other company materials. Employees should be familiar with any hazardous materials that are already on-board the aircraft. Following is a list of materials that can possibly be on an aircraft.

1. Batteries, Aircraft (qty. 2)
2. Engine Oil (as hazardous waste)
3. Escape Slides/Life Rafts (all entry doors/rafts optional)
4. Fire Bottles (APU, engines, lower cargo compartment, and lavatory waste containers)

5. Fire Extinguishers (attendant stations, closets, galleys, etc.)
6. Fuel
7. Hydraulic Fluid, Reservoirs (as hazardous waste)
8. Uranium (depleted, counter-balance weights)
9. Ordnance Devices (off-wing escape)
10. Oxygen Bottles, Portable, Gaseous
11. Oxygen Bottles, Crew System, Gaseous
12. Oxygen Bottles, Passenger System, Gaseous (Standard)
13. Oxygen Generators (optional: each PSU standard: each attendant station and lavatory)
14. Rain Repellant
15. Refrigerant (located in each galley)
16. Smoke Hoods
17. Tritium Signs (aisle and emergency exit doors)

Training Resources

* There is a DOT Hazardous Materials CBT on the PRISM website under Training—Employee Safety Training—Videos and Interactive Courses.

Emergency Books and Training, Inc
Offers a Hazardous Materials Recognition CBT (Computer Based Training). It covers the recognition and identification of hazardous materials, how they are stored, containers, and other essentials to recognition. http://www.ebtinc.com/detail.aspx?ID=2853

Action Training Systems
They have a two part awareness series, defining the nine hazard classes, using the emergency response guidebook and recognition training. There is a Hazardous Materials recognition, and a hazardous materials identification CBT, DVD, and VHS. http://www.action-training.com/hazmatawareness.asp

Transportation Safety Institute
The TSI offers courses all areas of HAZMAT training. They specifically offer a course called Air Transportation of Hazardous Materials. The course is 3 days long, and focuses on the standards of ICAO/IATA. This course is directed for those who will carry hazardous materials. The cost is $500 and may serve valuable for recognition training. TSI is a division of the US DOT.

There is also publications for sale, as well as CD-ROM training available. The CD-ROM hazardous materials training module is only $25. There is also a HAZMAT General Awareness video for $10.

https://hazmatonline.phmsa.dot.gov/services/pub_default.aspx

OSHA

Hazardous materials training is available through the OSHA Training Institute Education Center. This course is also directed to those who carry hazardous materials. It is 7 days long, runs from 8/3/2006-8/11/2006, located in Arlington Heights, IL, and costs $1,102. There is also an online version available.

http://www.osha.gov/web/dcsp/ote/coursecatalog/CourseList.asp?CourseNumber=2010&CourseNumber=&ObjectivesNotes=&StartDate=&EndDate=

Transportation Development Group

This company has a CBT program called the 2006 IATA Dangerous Goods Acceptance Training program and it claims to meet the DOT training requirements for general awareness training. The program is $295 per user for online web-based training, or $995 for unlimited use. The course is 12-20 hours and has a 112 question exam at the end. http://www.logisticstraining.com/