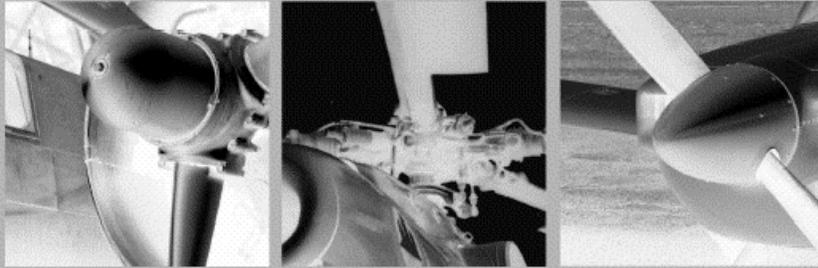


INTERAGENCY

Aviation Transport of Hazardous Materials



Department of the Interior Handbook

July 2004
NFES 1068

FOREWORD

This document, as authorized in 350 DM 2 establishes the Department of the Interior (DOI) aviation transport of hazardous materials program. This document sets forth the objectives, policies, and standards for the transport of hazardous materials in aircraft under the exclusive direction and operational control of the DOI.

Questions regarding this program should be directed to the Aviation Management (DOI AM) Regional or Area Offices. This handbook is available on the DOI Aviation Management website at <<http://www.oas.gov>>.

/s/ Mike Martin
Associate Director
Aviation Management Directorate
National Business Center
U.S. Department of the Interior

Date: 7/26/04

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CHAPTER 1

GENERAL INFORMATION

- 1.1 Scope.** Hazardous material, as defined in 49 CFR, “means a substance or material that the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce. The term includes hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (see 49 CFR 172.101), and materials that meet the defining criteria for hazard classes and divisions in part 173 of subchapter C of this chapter.” (See appendix 5 of this handbook/guide.)
- 1.2 Objective.** The objective of the aviation transport of hazardous materials program is to ensure the safety of flight when transporting hazardous materials aboard (including attached to or suspended from) Government-owned and contract vendor aircraft under the exclusive direction and operational control of the DOI. DOI will provide:
- A. Technical advice on hazardous materials, handling procedures, and air transportation methods.
 - B. Technical training in the handling, storage, dispensing, and transportation of hazardous materials.
 - C. Information on new innovations and procedures to transport hazardous materials.
- 1.3 How To Use This Handbook/Guide.** General guidance and direction is outlined in chapter 1 and explicit direction for each type of hazardous material is addressed in chapters 2 through 10. The information contained in chapter 1 is applicable to chapters 2 through 10.
- 1.4 Rules of Construction.** The use of the verbs “must” and “shall” conveys mandatory compliance. “May” is used in a permissive sense to state authority or permission to do the act described, and the words “no person may” or “a person may not” mean that no person is required, authorized, or permitted to do the act described.
- 1.5 Applicability.** The procedures established in this document will be utilized only in the support of DOI operations involving aircraft that are Government-owned and/or contract vendor-owned, flown by either a Government or vendor pilot, under the exclusive direction and operational control of the DOI. Other modes of transportation, aircraft not under the exclusive direction and operational control of DOI, passenger transport as defined by Public Law 106-181, and hazardous materials not specified in this document must comply with 49 CFR Parts 171-180.

Qualified non-crewmembers whose presence is required to perform or is associated with the performance of a Governmental function such as national defense, intelligence missions, firefighting, search and rescue, law enforcement (including transport of prisoners, detainees, and illegal aliens), aeronautical research, or biological or geological resource management are allowed to be aboard an aircraft performing public aircraft operations while transporting hazardous material.

- 1.6 Hazardous Material Identification Aids.** Information on the contents of a product suspected of containing hazardous materials can be obtained by contacting the manufacturer of the product and requesting a Material Safety Data Sheet (MSDS). If a product is suspected of containing hazardous materials, it must be identified before being transported. MSDSs for many substances are available at one of the following websites:

<<http://siri.uvm.edu/msds>>

<http://www.camd.lsu.edu/msds/msds_search.html>

- 1.7 Limiting Exposure.** Personnel should minimize the hazards associated with transporting hazardous materials by:

- A. Carrying hazardous materials aboard aircraft only when other means of transportation are impracticable.
- B. Limiting personnel on aircraft carrying hazardous materials to those qualified non-crewmembers essential to mission accomplishment.
- C. Avoiding hazardous materials flights over populated areas.
- D. Restraining packages placed aboard aircraft including cargo compartments and external cargo racks from movement while in transit.
- E. Prohibiting smoking or the use of any item that could cause an open flame or spark when explosives, flammable solids, flammable liquids, or gases are being loaded and unloaded, or during flight.

- 1.8 Notifying Pilot of Hazardous Materials.** The pilot and all personnel aboard an aircraft must be made aware of the location and type of hazardous materials being transported with them. The pilot shall ensure that all personnel are briefed as to what specific actions are required in the event of an emergency. The pilot must be given initial written notification of the type, quantity, and location of hazardous materials placed aboard the aircraft before the start of any project. Thereafter, verbal notification of changes in hazardous materials is acceptable for ongoing missions. A cargo manifest (see appendix 4) or similar document may be used for written notification. For operations where the types of the materials do not change, repeated notification will not be required. For external jettisonable load operations, verbal notification of the type and quantity of hazardous materials is acceptable.

- 1.9 Pilot-In-Command Authority.** The assigned pilot-in-command is directly responsible and is the final authority for the operation of that aircraft to include the acceptance of hazardous materials. Before each flight the pilot-in-command must:
- A. Inform all personnel of the location of hazardous materials aboard the aircraft.
 - B. Prohibit smoking or any other activity that could cause an open flame or sparks.
- 1.10 Exceptions.** Packaging, markings, labeling, and shipping paper requirements of 49 CFR, subchapter C, do not apply to hazardous materials transported in accordance with this handbook aboard aircraft for Government purposes when under exclusive direction and operational control of DOI. Hazardous materials not specified in this document must comply with 49 CFR Parts 171-180.
- 1.11 Packaging.** Packages containing hazardous materials must (1) be compatible with the product to be contained, (2) have all closures secured, (49 CFR 173.24), (3) not leak, and (4) not allow the contents to come in contact with the aircraft or personnel. Packages must be inspected for damage or leaks during loading and unloading. Packages with holes, leakage, or other indications of damage affecting integrity must not be placed aboard an aircraft. Damaged or leaking packages discovered on board the aircraft should be handled only as necessary to minimize further damage or injury. Leaking packages should be reported in accordance with paragraph 1.18 of this handbook/guide. A damaged container emptied of its contents, containing only residue, must be transported in a UN 1A2 overpack or salvage packaging.
- 1.12 Hazard Communication Marking.** Except where otherwise noted in the control measures, packaging shall be marked with the common name and the name of the hazard class to identify the package contents. Examples: gasoline/flammable, diesel/combustible, fusees/flammable solid, battery/corrosive, aerosol paint cans/flammable gas, propane/flammable gas. Markings may be applied directly to the package or affixed to the packaging by means of a tag.
- 1.13 Incompatible Hazardous Materials.** Hazardous materials that might react dangerously with one another must be segregated using separate flights, separate compartments, or separate packaging that prevents the interaction of the two materials.
- 1.14 Returns from Project Sites (Back Hauls).** Hazardous materials returning from the project site shall be managed in the manner of the original contents unless the container is sufficiently cleaned of residue and vapor to remove potential hazards.

1.15 Training Requirements. Training in the proper handling of a hazardous material must be given to each person who loads or unloads hazardous materials on aircraft. Training must include the requirements and conditions of this handbook and must include general awareness/familiarization, function-specific, and safety training (*Emergency Response Guide (ERG)*). Only the training approved by DOI AM is to be used to meet this requirement.

1.16 Special Provisions.

- A. A copy the *Interagency Aviation Transport of Hazardous Materials Handbook/Guide* and the ERG must be carried aboard each aircraft transporting hazardous materials.
- B. A copy the *Interagency Aviation Transport of Hazardous Materials Handbook/Guide* and the ERG must be maintained at each facility where the hazardous materials are offered or reoffered for transportation. For helicopter field operations away from fixed facilities, these requirements are deemed to have been met when the helicopter is loaded or reloaded under the direct supervision of an agency employee trained in accordance with this handbook.

1.17 Deviations. Request for deviations from this program should be addressed to the Associate Director, DOI Aviation Management.

1.18 Hazardous Materials Mishap Notification. Hazardous materials incidents must be reported so that an investigation by the appropriate authorities can establish the cause and corrective actions. It is the responsibility of any DOI employee at the scene of the incident to notify the local hazmat coordinator or responsible party and the DOI AM Safety Office if, in the opinion of any employee, a situation exists that could result in damage or injury as a result of hazardous materials.

The agency (DOI) authorities are also responsible for completing DOT Form F5800.1 (appendix 3) in accordance with 49 CFR 171.16 when any incident involving loss of packaging contents or packaging failure occurs. The incident must be reported to the Associate Administrator for Hazardous Materials Safety.

1.19 Definitions. Terms most often used in the handling of hazardous materials in accordance with this handbook are listed in appendix 1.

1.20 Abbreviations. Abbreviations used in this handbook are contained in appendix 2.

CHAPTER 2

FLAMMABLE AND COMBUSTIBLE LIQUIDS

- 2.1 General Information.** Includes all flammable and combustible liquids except those under compression (propane, butane, etc.). These materials may include but are not limited to gasoline, diesel, kerosene, alcohol, white gas (stove fuel), paint, and thinners/solvents.
- 2.2 Control Measures: Non-Bulk.** To transport flammable and combustible liquids in non-bulk containers of 119-gallon capacity or less, the following conditions must be met:
- A. Containers must be specifically designed to carry flammable and combustible liquids and be of sufficient strength to prevent leakage during transportation and handling.
 - B. All closures on the containers should be tight and the outside of the container should be free of any residue.
 - C. Containers should be filled to a level that allows for expansion due to temperature or altitude and never filled beyond rated capacity.
 - D. Containers must be secured in the upright position by tie-down straps or shipped in an outside container that will keep the inner container upright.
 - E. Containers that may release vapors must not be transported in unvented aircraft compartments. Baggage compartments in unpressurized aircraft are considered vented compartments (an unpressurized cabin may also be used when it is ventilated to prevent accumulation of harmful vapors).
 - F. Flammable and combustible liquids shall not be transported in plastic or glass containers unless they are specifically designed for that purpose.
 - G. Additional requirements apply to the following containers:
 - 1. **Safety Cans.** Safety cans must be transported in vented compartments, secured in the upright position, and filled to a level that prevents spillage (no more than 90% capacity).
 - 2. **Military Jeep Cans (3A1 Jerrycans).** Military Jeep cans must be secured in the upright position and have 2 inch of air space below the container opening.
 - 3. **Drip Torches.** Drip torches (1) must be transported with the igniter nozzle assembly in the tank, air breather valve closed, tank lockring sealed, and fuel spout plug closed and (2) must be secured

in the upright position. Leave a minimum of 2 inches of air space below the container opening when filling.

4. **Chainsaw Fuel/Oil Plastic Container (Dolmars).** Chainsaw fuel/oil containers must be transported with the pourer spouts enclosed within the container with the caps sealed. Ensure seal gaskets or o-rings are intact. The fuel air breather cap must be closed during transportation. Secure in an upright position. Leave a minimum of 2 inches of air space below the fuel compartment opening when filling.
5. **Sigg Bottles.** Sigg bottles must not be transported with a pouring spout in lieu of an unvented cap and must have 2 inches of air space below the container opening.

2.3 Control Measures: Flammable Fuel in Powered Equipment Tanks. To transport flammable fuel in powered equipment tanks the following conditions must be met:

- A. Not more than 20 gallons of flammable fuel in powered equipment tanks may be carried on any load.
- B. Powered equipment is secured in an upright position.
- C. Each fuel tank is filled in a manner that will preclude spillage of fuel during loading and unloading and during transportation.
- D. The compartment in which the equipment is loaded must be ventilated to prevent the accumulation of fuel vapors and must not contain an exposed battery.

Note: The following procedure may be used to remove the requirement to classify powered equipment as hazardous material:

Purging of Flammable Fuel Tanks. Liquid fuel-powered equipment may also be transported on aircraft when the fuel tanks are purged of fuel. The following is an example of mechanical purging of an engine fuel tank:

1. Drain fuel tank.
2. Run engine until it stops.
3. Attempt restarting with choke on until engine fails to fire.
4. Remove fuel tank cap and invert engine for 5 minutes, when possible.
5. Replace cap.

2.4 Bulk Fuel Containers. Any fuel container in excess of 119-gallon capacity will be considered a bulk fuel container. Fuel may be carried in bulk fuel tanks if the tanks are installed in accordance with the applicable Federal Aviation Regulations approved by DOI. Sealdrums (Rollagons) or bladder tanks of capacity up to 500 gallons are acceptable for carrying fuel in aircraft.

2.5 Compatibility Restrictions. Flammable and combustible liquids must not be stored next to or in contact with oxidizers (i.e., potassium permanganate, a.k.a. plastic spheres), or batteries. Flammable and combustible liquids shall not be transported with explosives.

CHAPTER 3 IGNITION DEVICES

- 3.1 General Information.** Includes fusees, flares, and other flammable solids designed for signaling, fire ignition, or fumigating. This also includes other materials used for aerial ignition activities such as helitorches, helitorch fuel, plastic sphere dispensers, and plastic spheres containing oxidizers such as potassium permanganate.
- 3.2 Control Measures.** To transport fusees, flares, and plastic spheres in aircraft, the following conditions must be met:
- A. All fusees must be packaged in a container, box, or pack.
 - B. Broken fusees and those with protective igniter caps removed shall not be transported in aircraft. Fusees prepared for an aerial fusee gun are not required to have protective igniter covers.
 - C. Fusees and flares should be carried in original shipping containers whenever possible.
 - D. Pistol flare ammunition may be carried on aircraft if contained in original package, box, pack, or manufactured container designed for transporting ammunition.
 - E. Plastic spheres must be segregated from antifreeze (glycol) containers during transportation.
 - F. Plastic spheres, containing oxidizers, may be loaded into bags that will be utilized to facilitate the efficient filling of the dispenser in flight during dispensing operations.
 - G. Personnel engaged in fire management activities may transport small quantities of fusees (5 or less) inside field gear packs without the hazard communications marking.
- 3.3 Compatibility Restrictions.** Ignition devices shall not be transported in a position that allows them to interact with batteries or battery fluids. Ignition devices shall not be transported with explosives.

CHAPTER 4

BATTERIES/BATTERY FLUID

- 4.1 General Information.** A battery is a device for generating an electrical current by a chemical reaction. Wet-cell batteries contain a fluid of electrolyte acid or alkaline solution. This fluid is corrosive and is a hazardous material. A wet-cell battery case without the fluid is referred to as an empty storage battery or dry-storage battery and contains no hazardous material. The following procedures are recommended:
- A. Use dry cell or non-spillable wet-cell batteries.
 - B. Use spill-resistant caps on wet-cell batteries.
- 4.2 Control Measures.** To transport batteries and battery fluids in aircraft, the following conditions must be met:
- A. All batteries, regardless of type, must be protected from short circuits by nonconductive terminal caps, tape, covers, or containers.
 - B. Wet-cell batteries must be packed in nonconductive containers or palletized and have a slip-on cover of nonconductive material.
 - C. Spillable wet-cell battery containers must be marked "this side up" or "this end up" and secured in an upright position. These markings must be placed on two opposite sides of the package.
 - D. Transport batteries and battery fluids in the manufacturer's original shipping containers. If original containers are not available, package in a wooden or fiberboard box lined with a strong plastic bag.
 - E. Battery fluid is limited to 5 gallons per package and must be secured in an upright position by tiedown straps or placed inside an outer container that will prevent the package from overturning.
 - F. Metallic items must not be packaged in the same container as a battery.
- 4.3 Compatibility Restrictions.** Batteries and battery fluids shall not be transported in a position that allows them to interact with flammable solids, oxidizers. Batteries and battery fluids shall not be transported with explosives.

CHAPTER 5

EXPLOSIVES

- 5.1 General Information.** When transporting explosives on aircraft, water gels and two-component explosives are preferred.
- 5.2 Control Measures.** To transport explosives by aircraft, the following conditions must be met:
- A. All explosives transported in accordance with this Handbook must be classed and approved in accordance with 49 CFR on the outside of the package with the appropriate UN/DOT hazardous materials warning label.
 - B. All explosives must be prepared, packaged, and transported under the control or direction of a licensed and certified blaster or a person who is approved by DOI, or cooperating agencies.
 - C. Detonating materials and explosives should be carried on different flights or segregated using separate compartments or packaging that prevents the interaction of the two materials.
 - D. Only qualified non-crewmembers necessary for the completion of the mission shall be allowed on a flight transporting explosive materials.
 - E. If the material concerned can create destructive forces or have lethal or injurious effects over an appreciable area as a result of an accident involving the aircraft or the material, the loading and unloading of the aircraft and its operation in takeoff, en route, and in landing must be conducted at a safe distance from heavily populated areas and from any place of human abode or assembly (49 CFR 175.320 (b)(4)).
- 5.3 Compatibility Restrictions.** Explosives shall not be transported or stored next to or in contact with flammable gas, non-flammable gas, flammable/combustible liquids, flammable solids, oxidizers, or corrosives.

CHAPTER 6

COMPRESSED GASES AND LIQUIDS

- 6.1 General Information.** Includes liquids or fuels under compression such as propane, butane, acetylene, etc., and aerosol containers. High-pressure cylinders may contain products such as air, oxygen, carbon dioxide, helium, nitrogen, and argon.
- 6.2 Control Measures.** To transport compressed gases and liquids in aircraft the following conditions must be met:
- A. Must be transported DOT specification container.
 - B. Except for aerosol containers, fire extinguishers, and propane, compressed gas cylinders must be labeled on the outside with the appropriate UN/DOT hazardous materials warning label.
 - C. Containers with gases and liquids under pressure must be secured to prevent movement. Fire extinguishers must be secured in a manner to protect the valve.
 - D. When carrying compressed gases and liquids internally, adequate ventilation must be provided to prevent the accumulation of harmful vapors.
 - E. Compressed gases or liquids shall not be dispensed or used inside the aircraft during flight, except oxygen, or air, and compressed gases for infrared cameras.
 - F. Except when dispensing compressed gases and liquids during flight, cylinder valves must be protected from damage by a cap, collar, outer container, or recess in the container. Pressurized SCBA/scuba tanks shall be packaged in an outer container or have alternate means of valve protection.
 - G. Aerosol containers must be packaged in an outer container or pack.
 - H. Oxygen containers must not be stowed or used in a manner that allows oxygen to come into contact with flammable liquids or oils and greases.
- 6.3 Compatibility Restrictions.** Compressed gases and liquids shall not be transported with explosives.

CHAPTER 7

SMALL ARMS AMMUNITION

- 7.1 General Information.** Includes ammunition for pistols, rifles, shotguns, and similar firing devices.
- 7.2 Control Measures.** To transport small arms ammunition in aircraft, one of the following conditions must be met:
- A. A person who is required to carry a firearm while performing official Government business may carry ammunition for small arms in a readily accessible manner.
 - B. Loaded weapons will be transported in aircraft only when the mission dictates their use in flight or soon after landing.
 - C. Small arms ammunition may be carried on aircraft if contained in original package, box, pack, or manufactured container designed for transporting ammunition.
 - D. Hazard communication marking is not required for small arms ammunition.
- 7.3 Compatibility Restrictions.** Small arms ammunitions must not be stored next to or in contact with compressed gases, flammable liquids, or corrosives.

CHAPTER 8

PERSONAL SURVIVAL EQUIPMENT

- 8.1 General Information.** Numerous DOI personnel are required to carry on their person materials essential to survival such as inflatable flotation devices, spare CO2 cartridges for flotation devices, small arms and ammunition, stove fuel, fire starters, pen flares, strike anywhere matches, and supplemental breathing air. Many of these survival devices are carried in a pocket, in a survival vest, or pack.
- 8.2 Control Measures.** To transport items of personal survival equipment the following conditions must be met:
- A. These life saving devices may be carried in survival vests/jackets/packs/kits without any further requirements provided they are packed in such a manner to prevent any accidental discharge, activation, or ignition.
 - B. Hazard communication marking is not required for individual hazardous items of personal survival equipment when carried in a pocket, survival vests/jackets/ packs/kits.
 - C. Each hazardous item must be identified separately during initial pilot notification.
- 8.3 Compatibility Restrictions.** None.

CHAPTER 9

MEDICAL WASTE

- 9.1 General Information.** Medical waste consisting of blood-soaked materials such as clothing, bandages, etc.
- 9.2 Control Measures.** Medical waste may be transported when one of the following conditions is met:
- A. Medical waste that is generated as a result of an emergency response by qualified non-crewmembers is to be handled in accordance with that unit's medical waste policy. Additional hazard communication marking is not required for these operations.
 - B. Medical waste transported for others must have a fiberboard or similar rigid overpack to protect the medical waste container from punctures or tears.
- 9.3 Compatibility Restrictions.** None.

CHAPTER 10

BEAR REPELLENT/IRRITANTS

10.1 General Information. Includes red pepper extract aerosol products (oleoresin capsicum) such as bear repellent spray and personal defense sprays. Irritants such as bear repellent, tear gas, and mace should be transported in an external compartment whenever practical.

10.2 Control Measures.

- A. Except for law enforcement operations conducted under paragraph B, all bear repellent/irritant spray must be transported in an outer container of significant strength that prevents the aerosol from accidentally discharging in the aircraft.
- B. Defensive aerosols carried by law enforcement officers may be carried in a duty belt or similar protective device when not contained within an outer container. Additional hazard communication marking is not required for this operation.
- C. Avoid exposure to ignition sources and temperatures above 120 degrees F.
- D. Ventilate the cabin and cockpit when fumes are detected during flight.
- E. Move personnel to fresh air and away from the aircraft when fumes are detected on the ground.

10.3 Compatibility Restrictions. None.

APPENDIX 1 DEFINITIONS

Emergency Response Guidebook. A guidebook for first responders during the initial phase of a dangerous goods/hazardous material incident.

Exclusive Direction and Operational Control. The condition existing when the DOI entity exercised the authority over initiating, conducting, or terminating a flight.

Fusee. A fusee is a device designed to burn at a controlled rate for signaling, fire ignition, or fumigating purposes. It is not a fuse that is used to carry flame and detonate an explosive. A fusee consists of a pasteboard or fiber tube containing a chemical mixture and some type of igniter cap or fuse.

Hazardous Materials. As defined in 49 CFR, hazardous material “means a substance or material that the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce. The term includes hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (see 49 CFR 172.101), and materials that meet the defining criteria for hazard classes and divisions in part 173 of subchapter C of this chapter.”

Hazmat Employee. As defined in 49 CFR 171.8, a hazmat employee is a person who is employed by a hazmat employer and who in the course of employment directly affects hazardous materials transportation safety. This term includes an individual, including a self-employed individual, employed by a hazmat employer who, during the course of employment:

1. Loads, unloads, or handles hazardous materials;
2. Manufactures, tests, reconditions, repairs, modifies, marks, or otherwise represents containers, drums or packaging as qualified for use in the transportation of hazardous materials;
3. Prepares hazardous materials for transportation;
4. Is responsible for safety of transporting hazardous materials; or
5. Operates a vehicle used to transport hazardous material.

Oxidizer. Material that may, by yielding oxygen, cause or enhance the combustion of other materials; i.e., potassium permanganate contained in plastic spheres for aerial ignition.

Plastic Spheres (ping pong balls). A plastic sphere that contains potassium permanganate used for aerial ignition.

Public Aircraft. An aircraft performing a governmental function such as national defense, intelligence missions, firefighting, search and rescue, law enforcement (including transport of prisoners, detainees, and illegal aliens), aeronautical research, or biological or geological resource management.

Qualified Non-Crewmember. A person whose presence is required to perform or is associated with the performance of a Governmental function (Public Law 106-181).

Safety Cans. These are vented fuel containers with self-closing caps, which may release fuel vapors.

Salvage Packaging. Packaging into which damaged, defective, or leaking hazardous materials packages, or hazardous materials that have spilled or leaked, are placed for purposes of transport for recovery or disposal.

Sigg Bottle. These containers are round aluminum fuel bottles designed to transport fuel and other liquids for backpacking and other recreational use.

UN 1A2 Overpack. A container utilized to move a damaged hazardous material package and its residual contents when further transport is required.

Unpressurized Cabin. See vented compartment.

Vented Compartment. Baggage compartments in unpressurized aircraft are considered vented compartments (an unpressurized cabin may also be used when it is ventilated to prevent accumulation of harmful vapors).

APPENDIX 2

ABBREVIATIONS

CFR	Code of Federal Regulations
DM	Department Manual, U.S. Department of the Interior
DOI	U.S. Department of the Interior
DOI AM	U.S. Department of the Interior, Aviation Management
DOT	U.S. Department of Transportation
ERG	Emergency Response Guidebook
Hazmat	Hazardous Materials
HEEDS	Supplemental Breathing Air
PFD	Personal Flotation Device
SBA	Supplemental Breathing Air
SCBA	Self-Contained Breathing Apparatus
Scuba	Self-Contained Underwater Breathing Apparatus
UN/DOT	International Standard for Labels and Hazard Classes

APPENDIX 3 DOT FORM F5800.1 (FRONT)

DEPARTMENT OF TRANSPORTATION HAZARDOUS MATERIALS INCIDENT REPORT					Form Approved OMB No 2137 0039
<p>INSTRUCTIONS: Submit this report in duplicate to the Information Systems Manager, Office of Hazardous Materials Transportation, DHM-63, Research and Special Programs Administration, U.S. Department of Transportation, Washington, D.C. 20590. If space provided for any item is inadequate, complete that item under Section IX, keying to the entry number being completed. Copies of this form, in limited quantities, may be obtained from the Information Systems Manager, Office of Hazardous Materials Transportation. Additional copies in this prescribed format may be reproduced and used, if on the same size and kind of paper.</p>					
I. MODE, DATE, AND LOCATION OF INCIDENT					
1. MODE OF TRANSPORTATION <input type="checkbox"/> AIR <input type="checkbox"/> HIGHWAY <input type="checkbox"/> RAIL <input type="checkbox"/> WATER <input type="checkbox"/> OTHER					
2. DATE AND TIME OF INCIDENT (Use Military Time e.g. 8:30am = 0830, noon = 1200, 6pm = 1800, midnight = 2400)					
Date TIME					
3. LOCATION OF INCIDENT (Include airport name in ROUTE/STREET if incident occurs at an airport)					
CITY		STATE			
COUNTY		ROUTE/STREET			
II. DESCRIPTION OF CARRIER, COMPANY, OR INDIVIDUAL REPORTING					
4. FULL NAME			5. ADDRESS (Principal place of business)		
6. LIST YOUR OMC MOTOR CARRIER CENSUS NUMBER, REPORTING RAILROAD ALPHABETIC CODE, MERCHANT VESSEL NAME AND ID NUMBER OR OTHER REPORTING CODE OR NUMBER					
III. SHIPMENT INFORMATION (From Shipping Paper or Packaging)					
7. SHIPPER NAME AND ADDRESS (Principal place of business)			8. CONSIGNEE NAME AND ADDRESS (Principal place of business)		
9. ORIGIN ADDRESS (if different from Shipper address)			10. DESTINATION ADDRESS (if different from Consignee address)		
11. SHIPPING PAPER/WAYBILL IDENTIFICATION NO.					
IV. HAZARDOUS MATERIAL(S) SPILLED (NOTE: REFERENCE 49 CFR SECTION 172.101.)					
12. PROPER SHIPPING NAME		13. CHEMICAL/TRADE NAME		14. HAZARD CLASS	15. IDENTIFICATION NUMBER (e.g. UN 2764 NA 2020)
16. IS MATERIAL A HAZARDOUS SUBSTANCE? <input type="checkbox"/> YES <input type="checkbox"/> NO			17. WAS THE RM MET? <input type="checkbox"/> YES <input type="checkbox"/> NO		
V. CONSEQUENCES OF INCIDENT, DUE TO THE HAZARDOUS MATERIAL					
18. ESTIMATED QUANTITY HAZARDOUS MATERIAL RELEASED (Include units of measurement)		19. FATALITIES		20. HOSPITALIZED INJURIES	21. NON HOSPITALIZED INJURIES
22. NUMBER OF PEOPLE EVACUATED					
23. ESTIMATED DOLLAR AMOUNT OF LOSS AND/OR PROPERTY DAMAGE, INCLUDING COST OF DECONTAMINATION OR CLEANUP (Round off in dollars)					
A. PRODUCT LOSS	B. CARRIER DAMAGE	C. PUBLIC/PRIVATE PROPERTY DAMAGE	D. DECONTAMINATION/ CLEANUP	E. OTHER	
24. CONSEQUENCES ASSOCIATED WITH THE INCIDENT <input type="checkbox"/> VAPOR (GAS) DISPERSION <input type="checkbox"/> MATERIAL ENTERED WATERWAY SEWER					
<input type="checkbox"/> SPILLAGE <input type="checkbox"/> FIRE <input type="checkbox"/> EXPLOSION <input type="checkbox"/> ENVIRONMENTAL DAMAGE <input type="checkbox"/> NONE <input type="checkbox"/> OTHER					
VI. TRANSPORT ENVIRONMENT					
25. INDICATE TYPE(S) OF VEHICLE(S) INVOLVED <input type="checkbox"/> CARGO TANK <input type="checkbox"/> VAN TRUCK/TRAILER <input type="checkbox"/> FLAT BED TRUCK TRAILER					
<input type="checkbox"/> TANK CAR <input type="checkbox"/> RAIL CAR <input type="checkbox"/> TOFC/COFC <input type="checkbox"/> AIRCRAFT <input type="checkbox"/> BARGE <input type="checkbox"/> SHIP <input type="checkbox"/> OTHER					
26. TRANSPORTATION PHASE DURING WHICH INCIDENT OCCURRED OR WAS DISCOVERED					
<input type="checkbox"/> EN ROUTE BETWEEN ORIGIN/DESTINATION <input type="checkbox"/> LOADING <input type="checkbox"/> UNLOADING <input type="checkbox"/> TEMPORARY STORAGE TERMINAL					
27. LAND USE AT INCIDENT SITE <input type="checkbox"/> INDUSTRIAL <input type="checkbox"/> COMMERCIAL <input type="checkbox"/> RESIDENTIAL <input type="checkbox"/> AGRICULTURAL <input type="checkbox"/> UNDEVELOPED					
28. COMMUNITY TYPE AT SITE <input type="checkbox"/> URBAN <input type="checkbox"/> SUBURBAN <input type="checkbox"/> RURAL					
29. WAS THE SPILL THE RESULT OF A VEHICLE ACCIDENT/DERAILMENT? <input type="checkbox"/> YES <input type="checkbox"/> NO					
IF YES AND APPLICABLE, ANSWER PARTS A THRU C					
A. ESTIMATED SPEED		B. HIGHWAY TYPE <input type="checkbox"/> DIVIDED-LIMITED ACCESS <input type="checkbox"/> UNDIVIDED		C. TOTAL NUMBER OF LANES <input type="checkbox"/> ONE <input type="checkbox"/> THREE <input type="checkbox"/> TWO <input type="checkbox"/> FOUR OR MORE	
					SPACE FOR DOT USE ONLY

DOT FORM F5800.1 (BACK)

VII. PACKAGING INFORMATION: If the package is overpacked (consists of several packages, e.g. glass jars within a fiberboard box), begin with Column A for information on the innermost package.																																																																																																																										
ITEM	A	B	C																																																																																																																							
30 TYPE OF PACKAGING INCLUDING INNER RECEPTACLES (e.g. Steel drum, tank car)																																																																																																																										
31 CAPACITY OR WEIGHT PER UNIT PACKAGE (e.g. 55 gallons, 65 lbs.)																																																																																																																										
32 NUMBER OF PACKAGES OF SAME TYPE WHICH FAILED IN IDENTICAL MANNER																																																																																																																										
33 NUMBER OF PACKAGES OF SAME TYPE IN SHIPMENT																																																																																																																										
34 PACKAGE SPECIFICATION IDENTIFICATION (e.g. DOT 17E, DOT 105A100, UN 1A1 or none)																																																																																																																										
35 ANY OTHER PACKAGING MARKINGS (e.g. STC, 18/16-55-88, Y1 4/150B7)																																																																																																																										
36 NAME AND ADDRESS, SYMBOL OR REGISTRATION NUMBER OF PACKAGING MANUFACTURER																																																																																																																										
37 SERIAL NUMBER OF CYLINDERS, PORTABLE TANKS, CARGO TANKS, TANK CARS																																																																																																																										
38 TYPE OF LABELING OR PLACARDING APPLIED																																																																																																																										
39 IF RECONDITIONED OR REQUALIFIED	A REGISTRATION NUMBER OR SYMBOL																																																																																																																									
	B DATE OF LAST TEST OR INSPECTION																																																																																																																									
40 EXEMPTION/APPROVAL/COMPETENT AUTHORITY NUMBER, IF APPLICABLE (e.g. DOT E1012)																																																																																																																										
VIII. DESCRIPTION OF PACKAGING FAILURE: Check all applicable boxes for the package(s) identified above.																																																																																																																										
41. ACTION CONTRIBUTING TO PACKAGING FAILURE		42. OBJECT CAUSING FAILURE																																																																																																																								
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43. HOW PACKAGE(S) FAILED	44. PACKAGE AREA THAT FAILED		45. WHAT FAILED ON PACKAGE(S)																																																																																																																							
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IX. DESCRIPTION OF EVENTS: Describe the sequence of events that led to incident, action taken at time discovered, and action taken to prevent future incidents. Include any recommendations to improve packaging, handling, or transportation of hazardous materials. Photographs and diagrams should be submitted when necessary for clarification. ATTACH A COPY OF THE HAZARDOUS WASTE MANIFEST FOR INCIDENTS INVOLVING HAZARDOUS WASTE. Continue on additional sheets if necessary.																																																																																																																										
46. NAME OF PERSON RESPONSIBLE FOR PREPARING REPORT		47. SIGNATURE																																																																																																																								
48. TITLE OF PERSON RESPONSIBLE FOR PREPARING REPORT	49. TELEPHONE NUMBER (Area Code)	50. DATE REPORT SIGNED																																																																																																																								

APPENDIX 4
SAMPLE HAZARDOUS MATERIALS MANIFEST
(OPTIONAL)

Hazardous Materials Manifest						
DOT E-9198						
Date _____						
Aircraft # _____		Bureau/Agency _____				
Common Name	Hazard Class			ERG#	QTY	Weight
				OPTIONAL		
Batteries Wet/Acid	CORROSIVE MATERIALS			154		
Batteries Wet Non-Spillable	CORROSIVE MATERIALS			154		
Bear Spray, Irritants	MISCELLANEOUS HAZARDOUS MATERIALS					
Cartridges Small Arms	NO SIGNIFICANT BLAST HAZARD					
Diesel Fuel	COMBUSTIBLE LIQUID			128		
Engines, Internal Combustion	FLAMMABLE COMBUSTIBLE LIQUIDS			128		
Fire Extinguisher	NONFLAMMABLE GAS			126		
Flammable Liquid (Drip Torch)	FLAMMABLE LIQUID			128		
Fuel Aviation Turbine	COMBUSTIBLE LIQUID			128		
Fusee	FLAMMABLE SOLIDS			133		
Gasoline	FLAMMABLE LIQUID			128		
Methanol (Petro Gel)	FLAMMABLE LIQUID			131		
Methacetylene/Propadiene Mixture, Stabilized (Mapp Gas)	FLAMMABLE GAS			116P		
Oxygen	NONFLAMMABLE GAS			122		
Petroleum Distillate (White Gas)	FLAMMABLE LIQUID			128		
Potassium Permanganate	OXIDIZER			140		
Propane	FLAMMABLE GAS			115		
Medical Waste	INFECTIOUS SUBSTANCE			158		
Total Weight						
Remarks:						
Shipper's Signature					Location	
Pilot's Signature						
Contact Telephone Number						

