

(c) If a vessel designed for and carrying hazardous materials in freight containers or a vessel designed for and carrying hazardous materials in barges is equipped with a fixed fire extinguishing and fire detection system, the freight containers or barges need not be stowed in the manner required by paragraph (a) of this section. When freight containers or barges containing hazardous materials are stowed on deck, they need not be stowed in the manner required by paragraph (a) of this section if fire fighting equipment capable of reaching and piercing the freight container or barge is on board the vessel.

(d) Packages of hazardous materials must be secured and dunnaged to prevent shifting in any direction. Vertical restraints are not required if the shape of the package and the stuffing pattern preclude shifting of the load.

(e) Packages of hazardous materials must be braced and dunnaged so that they are not likely to be pierced by the dunnage or crushed by a superimposed load.

[Amdt. 176-1, 41 FR 16110, Apr. 15, 1976, as amended by Amdt. 176-1A, 41 FR 40687, Sept. 20, 1976; Amdt. 176-12, 45 FR 81573, Dec. 11, 1980; Amdt. 176-30, 55 FR 52689, Dec. 21, 1990; 56 FR 66282, Dec. 20, 1991; 68 FR 61942, Oct. 30, 2003]

#### **§ 176.70 Stowage requirements for marine pollutants.**

(a) Marine pollutants must be properly stowed and secured to minimize the hazards to the marine environment without impairing the safety of the ship and the persons on board.

(b) Where stowage is permitted "on deck or under deck", under deck stowage is preferred except when a weather deck provides equivalent protection.

(c) Where stowage "on deck only" is required, preference should be given to stowage on well-protected decks or to stowage inboard in sheltered areas of exposed decks.

[Amdt. 176-31, 57 FR 52940, Nov. 5, 1992]

#### **§ 176.72 Handling of break-bulk hazardous materials.**

(a) A metal bale hook may not be used for handling any package of hazardous materials.

(b) The use of equipment designed to lift or move cargo by means of pressure exerted on the packages may not be used for handling any package of hazardous materials if the device can damage the package or the package is not designed to be moved in that manner.

(c) Pallets, slings, cargo nets and other related equipment used in loading packages of hazardous materials must give adequate support to the packages. The packages must be contained so that they are not able to fall during loading.

#### **§ 176.74 On deck stowage of break-bulk hazardous materials.**

(a) Packages containing hazardous materials must be secured by enclosing in boxes, cribs or cradles and proper lashing by use of wire rope, strapping or other means, including shoring and bracing, or both. Lashing of deck cargo is permitted if eye pads are used to attach the lashings. Lashings may not be secured to guard rails. Bulky articles must be shored.

(b) A packaging susceptible to weather or water damage must be protected so that it will not be exposed to the weather or to sea water.

(c) Not more than fifty percent of the total open deck area should be used for stowage of hazardous materials (except Class 9 (miscellaneous hazardous material)).

(d) Fireplugs, hoses, sounding pipes, and access to these must be free and clear of all cargo.

(e) Crew and passenger spaces and areas set aside for the crew's use may not be used to stow any hazardous material.

(f) A hazardous material may not be stowed within a horizontal distance of 25 feet of an operating or embarkation point of a lifeboat.

(g) Hazardous materials must be stowed to permit safe access to the crew's quarters and to all parts of the deck required in navigation and necessary working of the vessel.

(h) When runways for use of the crew are built over stowed hazardous materials, they must be constructed and fitted with rails and lifelines so as to

## § 176.76

## 49 CFR Ch. I (10–1–11 Edition)

afford complete protection to the crew when in use.

[Amdt. 176–1, 41 FR 16110, Apr. 15, 1976, as amended by Amdt. 176–1B, 41 FR 57072, Dec. 30, 1976; Amdt. 176–30, 55 FR 52689, Dec. 21, 1990; 56 FR 66282, Dec. 20, 1991; 66 FR 45181, Aug. 28, 2001]

### **§ 176.76 Transport vehicles, freight containers, and portable tanks containing hazardous materials.**

(a) Except as provided in paragraphs (b) through (f) of this section, hazardous materials authorized to be transported by vessel may be carried on board a vessel in a transport vehicle or freight container, subject to the following conditions (see additional requirements concerning the transport of Class 1 (explosive) materials in §§ 176.168 through 176.172 of this subchapter):

(1) The material must be in proper condition for transportation according to the requirements of this subchapter;

(2) All packages in the transport vehicle or freight container must be secured to prevent shifting in any direction. Vertical restraint is not required if the shape of the packages, loading pattern, and horizontal restraint preclude vertical shifting of the load within the freight container or transport vehicle;

(3) Bulkheads made of dunnage which extend to the level of the cargo must be provided unless the packages are stowed flush with the sides or ends;

(4) Dunnage must be secured to the floor when the cargo consists of dense materials or heavy packages;

(5) Each package marked in accordance with § 172.312(a)(2) of this subchapter must be stowed as marked;

(6) Any slack spaces between packages must be filled with dunnage;

(7) The weight in a container must be distributed throughout as evenly as possible and the maximum permissible weight must not be exceeded;

(8) Adjacent levels of bagged and baled cargo must be stowed in alternate directions so that each tier binds the tier above and below it;

(9) When security devices, beacons or other tracking or monitoring equipment are used, they must be securely installed and must be of a certified safe type for the hazardous materials that

will be carried within the freight container or transport vehicle in which such as device or equipment is installed.

(10) The lading must be contained entirely within the freight container or vehicle body without overhang or projection except that oversized machinery such as tractors or vehicles with batteries attached may overhang or project outside the intermodal container provided all of that portion of the lading that consists of hazardous materials is contained entirely within the freight container. No open-bed container or vehicle is permitted to carry hazardous materials unless it is equipped with a means of properly securing the lading.

(b) A transport vehicle containing hazardous materials may be carried only on board a trailership, trainship, ferry vessel or car float.

(c) [Reserved]

(d) A transport vehicle or freight container equipped with heating or refrigeration equipment may be operated on board a vessel. However, the equipment may not be operated in any hold or compartment in which any flammable liquid or gas is stowed. Any heating or air conditioning equipment having a fuel tank containing a flammable liquid or gas may be stowed only “on deck”. Equipment electrically powered and designed to operate within an environment containing flammable vapors may be operated below deck in a hold or compartment containing a flammable liquid or gas.

(e) A transport vehicle, loaded with any hazardous material which is required to be stowed “on deck” by § 172.101 of this subchapter, may be stowed one deck below the weather deck when transported on a trainship or trailership which is unable to provide “on deck” stowage because of the vessel’s design. Otherwise, the transport vehicle or container must be transported “on deck.”

(f) A hazardous material may be carried on board a vessel in a portable tank subject to the following conditions:

(1) Small passenger vessels of 100 gross tons, or less, may carry a hazardous material in a portable tank only when 16 or less passengers are on