



STUDENT WORKBOOK

Version 4.4

NOTE: This text has been compiled for **TRAINING ONLY**. It should **NOT** be used in place of official directives or publications. Reproduction and distribution is permitted without further permission from CITAT.

Hazardous Materials Enforcement – Container Inspection Training Series

Creation Date: August 1994

Revision Date: November 2015

**U. S. Coast Guard Container Inspection Training and Assistance
Team 6500 S. MacArthur Blvd. (MPB-239)
Oklahoma City, OK 73169**

Phone Number: (405) 954-8985

Facsimile Number: (405) 954-9217

Website: www.uscg.mil/hq/citat

**QUESTIONS REGARDING THIS BOOKLET SHOULD BE REFERRED TO
THE ADDRESS ABOVE.**

References

- Marine Safety Manual COMDTINST M16000.15
Volume I, Chapter 10 (Health and Safety)
Chapter II, Chapter 22 (Facilities)
- Coast Guard National Container Inspection Program COMDTINST M16616.11C
- Confined Space Entry Policy, COMDTNOTE 16000
- Code of Safe Practice for Cargo Stowage and Securing, 2003 edition
- Civil Penalty Procedures and Administration COMDTINST 16200.3A
- International Safe Container Act (46 USC 80501 – 80509)
- International Maritime Dangerous Goods Code (Amendment 36-12)
- Federal Hazardous Materials Transportation Law (49 USC 5101 – 1527)
- Ports and Waterways Safety Act (33 USC 1221 et Seq.)
- 49 Code of Federal Regulations
- 40 Code of Federal Regulations
- 33 Code of Federal Regulations
- 29 Code of Federal Regulations
- 17 Code of Federal Regulations
- The Blair House Papers (National Performance Review) 1997 (Focus on compliance)
- Institute of International Container Lessors Container Repair Manual for Steel Freight Containers, 5th edition
- Institute of International Container Lessors Guide for Container Equipment Inspection, 5th edition
- Institute of International Container Lessors Guide for Container Damage Measurement
- Institute of International Container Lessors Supplement on Inspection & Repair: Gray Areas, 2nd edition
- International Convention for the Prevention of Pollution from Ships (MARPOL 73/78)
- International Convention for Safe Containers, 1972 (1996 edition)
- International Convention for the Safety of Life at Sea, 1974
- Maritime Radiation Detection Program and Guidance for Utilizing Radiation Detection Equipment during Vessel Boardings, Cargo Inspections, and Other Activities COMDTINST 16600.2A
-

Course Syllabus

MONDAY

- a.m. Introduction
Laws & Authorities
Inspector Safety
Inspection Process
- p.m. Structural Exams
MASFO Planning
Use of the IMDG Code in the US

TUESDAY

- a.m. Quiz # 1
Classification of Materials
Dangerous Goods List/Hazardous Materials Table
- p.m. Packaging (Non-Bulk & Bulk)
Marking & Labeling

WEDNESDAY

- a.m. Quiz # 2
Placarding & Marking
Documentation
- p.m. Container Loading and Stowage
Consignment Exercise
Corrective Actions and Enforcement

THURSDAY

- a.m. Field/Exercise
- p.m. Quiz # 3
Class Exercise

FRIDAY

- a.m. Marine Information for Safety and Law Enforcement (MISLE)
Course Review
Course Examination
-

Table of Contents

Course Syllabus	ii
Foreword	1
Laws and Authorities	2
Inspector Safety	3
Inspection Process	4
Structural Examinations	5
MASFO Planning	6
Use of the IMDG Code in the US	7
Classification of Materials	8
Dangerous Goods List/Hazardous Materials Table	9
Packaging (Non-Bulk/Bulk)	10
Marking and Labeling	11
Placarding and Marking	12
Documentation	13
Container Loading, Stowage, and Segregation.....	14
Enforcement of US Laws and International Treaties	15
49 CFR 450-453.....	Appendix A

Container Inspection Course

Mission This course is designed to provide prospective container inspectors with the knowledge and skills necessary to inspect intermodal containers. Students who successfully complete this course will be able to inspect containers and hazardous material shipments in accordance with Coast Guard policy, 49 CFR 100-185 and 450-453, and the International Maritime Dangerous Goods Code.

Scope This course provides Coast Guard, federal, state, and local personnel with detailed instruction on the applications of laws, regulations, and policies related to the inspections of surface transported containers and tanks. Students, upon graduation, are able to:

- Determine which laws and conventions affect the transport of hazardous materials and how they apply to CG container inspections
 - Resolve safety risks associated with container inspections
 - Select and enter a container
 - Plan a Multi-Agency Strike Force Operation and determine after action reporting procedures
 - Determine conditions and applicability for use of International Standards in the US
 - Use the hazardous materials regulations and IMDG Code to locate specific information
 - Determine the requirements for shipping hazardous materials
 - Determine the standards and requirements for container structural safety and serviceability
 - Determine corrective actions and follow-up procedures for violations found during container inspections.
-

Container Inspection Course (Cont.)

Introduction

This course uses the Hazardous Materials Regulations (HMR), Safety Approval of Cargo Containers Regulations, and the International Maritime Dangerous Goods (IMDG) Code to determine compliance with intermodal containers used in commerce.

49 CFR Parts 100-185

The HMR are contained in Title 49—Transportation, Code of Federal Regulations (49 CFR) Parts 100-185. The HMR govern the domestic transportation of hazardous materials in interstate, intrastate, and foreign commerce.

The primary goal of the HMR is the safety of the public and those whose occupations involve preparing hazardous materials for transportation or transporting them. The HMR are divided into four general areas:

- **Hazardous materials identification and classification;**
 - **Hazard communication;**
[Shipping papers, markings, labels, and placards are used to communicate hazards of the materials to emergency responders, as well as, to those who handle hazardous materials routinely];
 - **Packaging requirements; and**
 - **Operational rules.**
-

49 CFR Parts 450-453

The Safety Approval of Cargo Containers Regulations are contained in 49 CFR Parts 450-453. These regulations govern the procedures for safety approval and periodic examination of cargo containers used in international transport. Maintained by the Coast Guard, the regulations are intended for the structural safety and serviceability of intermodal containers.

IMDG Code

The IMDG Code is intended to provide for the safe transportation of hazardous materials by vessel, protect crew members and prevent marine pollution. The Code is based on the UN Model Regulations but also includes additional requirements applicable to the transport of hazardous materials by sea.

The IMDG Code is maintained and updated by IMO's DSC Sub-Committee. Implementation of the Code is mandatory in conjunction with the governments' obligations under the International Convention for the Safety of Life at Sea (SOLAS) and the International Convention for the Prevention of Pollution from Ships (MARPOL). The U.S. is signatory to these two conventions. Today at least 150 countries whose combined merchant fleets account for more than 98% of the world's gross tonnage use the IMDG Code as a basis for regulating sea transport of hazardous materials. The U.S. Hazardous Materials Regulations authorize use of the IMDG Code as a means of compliance with the HMR when at least one segment of transport involves sea transport.

Suggested Tabbing of the HMR

Subject	Reference	Suggested Tab
General		
Exemptions, Preemptions, Registration	Part 107	107
Definitions/Abbreviations	171.8	DEF
Hazardous Materials Table	172.101	HMT
Appendix A (Hazardous Substances)	Appendix A	AP A
Appendix B (Marine Pollutants)	Appendix B	AP B
Special Provisions	172.102	SP PR
Shipping Papers	172.200	SHP PAP
Certification	172.204	CERT
Hazardous Waste Manifest	172.205	MANFST
Marking	172.300	MRK
Labeling	172.400	LBL
Placarding	172.500	PLAC
Emergency Response Information	172.600	ERI
Training	172.700	TRNG
Classes & Definitions	173.2	CLASS
Precedence Table	173.2a	PRE TBL
Waste Packaging Exception	173.12	LAB PK
Packaging-General Requirements	173.24	GEN PKG
Packaging-Add'l Req.-Non-Bulk	173.24a	NB
Packaging-Add'l Req.-Bulk	173.24b	BULK
Packaging-Reuse	173.28	PKG REUSE
Empty packagings	173.29	MT PKG
Specific Packaging		
Packaging-Non-Bulk	Part 173, Subpart E	NB
Packaging Bulk	Part 173, Subpart F	BULK
Hazard Class Definitions/Divisions/Packing Groups		
Class 1 (Explosives)	173.50	CL 1
Class 2 (Gases)	173.115/116	CL 2
Class 3 (Flammable/Combustible Liquids)	173.120/121	CL 3
Class 4 (Flammable Solid, Spontaneously Combustible, Dangerous When Wet)	173.124/125	CL 4
Class 5 (Oxidizers, Organic Peroxides)	173.127/128/129	CL 5
Class 6 (Poisonous Materials/ Infectious Substances)	173.132/133/134	CL 6
Class 7 (Radioactive Materials)	173.403	CL 7
Class 8 (Corrosive Materials)	173.136/137	CL 8
Class 9 (Miscellaneous Hazmats)	173.140/141	CL 9
Other Regulated Materials	173.144/145	ORM

Suggested Tabbing of the HMR (Cont.)

Subject	Reference	Suggested Tab
Exceptions		
Class 2 (Gases)	173.306/307	CL 2 EXC
Class 3 (Flammable/Combustible Liquids)	173.150	CL 3 EXC
Class 4 (Flammable Solids)	173.151	CL 4 EXC
Class 5 (Oxidizers, Organic Peroxides)	173.152	CL 5 EXC
Div. 6.1 (Poisonous Materials)	173.153	DIV 6.1 EXC
Class 8 (Corrosive Materials)	173.154	CL 8 EXC
Class 9 (Miscellaneous Hazmats)	173.155	CL 9 EXC
Other Regulated Materials	173.156	ORM-D EXC
Carrier Requirements		
Rail	PART 174	RAIL
Aircraft	PART 175	AIR
Vessel	PART 176	VES
Highway	PART 177	HWY
Packagings Specs		
Purpose and Scope	178.1	Scope
Applicability & Responsibility	178.2	App
Specs for Inner Receptacles	178.33	Inner
Specs for Cylinders	178.35	Cyl
Specs for Portable Tanks	178.245	PT
Specs for Cargo Tanks	178.337-.348	
Pkgs for Class 7	178.350	RAM
NB Performance Oriented Pkgs.	178.500	POP
Tests – NB Pkgs.	178.600	NBTest
Intermediate Bulk Container Stds.	178.700	IBCs
Testing of IBCs	178.800	IBCTest

Container Inspection Resources

Helpful Links

Homeport: The Coast Guard Container Inspection page on Homeport @ <http://homeport.uscg.mil> under “containers” in the Missions tab provides information on:

- Policy and regulation updates
- Container Inspection Resources
- DOD Movement Resources

PHMSA: The Department of Transportation – Pipeline and Hazardous Materials Safety Administration Web Page @ <http://phmsa.dot.gov/> provides information on:

- Regulations
- Special Permits and Approvals
- International Standards
- Training and Outreach Opportunities
- Inspection and Enforcement Assistance
- Incident Reporting

Additional Links include:

- International Maritime Organization <http://www.imo.org/>
- Institute of International Container Lessors <http://www.iicl.org/>
- Transport Canada <http://www.tc.gc.ca/>

Conversion Factors §171.10 Ch 2.2

10 kPa = 1.45 psi
1 kg = 2.2 lb
0.47 L = 1 pint (US)
0.95 L = 1 quart (US)
1 L = .264 gal (US)
3.8 L = 1 gal (US)

Container History

Containerized Freight Background

Freight Statistics:

- Introduced in 1956; developed by Malcolm McLean founder of Sea Land Inc.
- Growth in the trade continues at approximately 9% a year
- Total value of commodities that moved through our ports was approximately \$1.8 Trillion in 2012—includes oil, bulk and containerized cargoes. The best estimate is that containerized cargo accounts for approximately 60% or \$1 Trillion.
- Roughly 225,000 companies export goods in the United States.
- Breakdown of the number of containers handled in the U.S. during the 2011 calendar year:
 - Grand total all TEU containers:
 - 42,686,747

Note: Since we import more than we export, and according the AAPA (American Association of Port Authorities) the “vast majority” of outbound containers are empties.

Container History

Container Vessel Background

Vessel Statistics:

- Initially were converted surplus WWII tankers, now specially built
- First container ships carried 58 35-foot containers
- Size—Up to 14,500 presently TEUs. Most are in the 3000-5000 TEU range.
- Length—Up to 1300 feet. Most are in the 700-950' range
- Cost—\$40 - 70 million to build
- Draft—Larger ships (4000+ TEU) require 43-51'
- Speed—25+ kts for newer larger ships, 18-22 kts for smaller containerships
- Reefer Slots—Up to 500 container slots on larger vessels are provided with electrical hook-ups (440 volts)
- Cost of operating a Container Ship is between \$6500 - \$20,000/day.
- Cost of a 24 hour delay (large containership)- \$200,000
- Cost due to shipping cargo overland or by another vessel to a port that will need to be missed, increased fuel consumption due to increased speed, vessel costs (crew, loan payments, lost revenue)- \$\$\$\$

CG Inspection History

Container Inspection Timeline:

- 1985 – 6-month random inspection trial program in 21 ports, ~25% discrepancy rate discovered
- 1988 – Secretary of Transportation Safety Review Task Force recommended USCG have a dedicated container inspection program for hazmat
- 1992 – M/V Santa Clara I lost 21 containers overboard off the New Jersey coast
- 1993 – USCG Pilot Container Inspection Program in ports of NY/NJ and LA/LB
- 1994 – Congressional funding for 76 USCG Container Inspection Program billets
- 1994 – MOUs with NCB & USCS, establishment of CITAT and MASFO initiative
- 1994 – COMDTINST 16616.11
- 1999 – COMDTINST 16616.11B
- 2013 – COMDTINST M16616.11C

National Container Inspection Program

CG Inspection Goals

Implemented by the Coast Guard to ensure compliance of intermodal containers, the National Container Inspection Program (NCIP) Goals are:

- **Protect the public from potential hazardous releases or spills.** If we don't identify potential problems at the port, it is very possible the dangerous/unsafe shipments will be going into our communities and we don't want that.
 - **Protect vessels and crews from incidents at sea** that can be life threatening.
 - **Standardize hazardous material shipping regulatory enforcement between ports.** Standardized enforcement prevents "Port Shopping" where shipping agents and lines avoid ports and COTP Zones that strictly adhere to US and Coast Guard policy, and instead utilize ports which are known to have less stringent enforcement records. This will also lessen the confusion from port to port in administration of the law.
 - **Eliminate needless delays of safe shipments.** Delays due to improper shipments and unnecessary holds and delays by regulators cause more stress to industry and cost everyone more.
 - **Educate shippers for the purpose of eliminating unsafe shipments.** In cooperation with DOT PHMSA, the U.S. Coast Guard is tasked with educating shippers and other hazardous material employees in the use of U.S. and International shipping regulations and "best practices" in order to make the transportation stream safer and more efficient.
 - **Work with the other modes of transportation to safeguard the transportation system.** Fostering good working relationships with representatives of other modal agencies will enhance the Coast Guard's program and ensure cooperation with enforcement.
-

General Provisions of the IMDG Code

Introduction

This lesson will identify applicability of the International Maritime Dangerous Goods Code (IMDG Code) for maritime shipments of dangerous goods. Also, assembly and layout of the IMDG will be covered.

TPO

DETERMINE applicability of the IMDG Code for transportation of hazardous materials/dangerous goods by vessel.

Composition of the Code

The IMDG Code is comprised of 3 books, *two* Volumes—seven Parts therein, and *one* supplement:

- **Volume 1** contains the foreword, preamble, table of contents, and Parts 1, 2, and 4 – 7.
- **Volume 2** contains Part 3—Dangerous Goods List, limited quantity/excepted quantity exceptions, and index.

Note: Parts are easily identifiable from the outside of the volumes by grouped highlighted pages.

- **The Supplement** is a separate book containing emergency response and medical first aid information, reporting procedures, CTU packing guidelines, pesticide use recommendations, and certain radioactive carriage requirements.
-

Applicability §1.1.1.1 – 1.1.1.5

1.1.1.1 – 1.1.1.2, provisions contained in the IMDG Code are applicable to *all* vessels signatory to SOLAS

1.1.1.3, *all* ships, irrespective of type and size, carrying marine pollutants are subject to the IMDG Code.

1.1.1.5, recommendatory vs. mandatory provisions are listed here—In practice, this means that from the legal point of view, the whole of the IMDG Code is made mandatory, but provisions of recommendatory nature are editorially expressed in the Code (e.g. using the word "should" instead of "shall") to clarify their status.

General Provisions of the IMDG Code (Cont.)

Regulations Implemented in the Code

§1.1.2.1 – 1.1.4

1.1.2.1, SOLAS 74 Convention, Regulations 1, 2, 3, 4, 5, and 6.

1.1.2.2, International Convention for the Prevention of Pollution from Ships 1973/78 (MARPOL 73/78), Regulation 1, 2, 3, 4, 5, 6, 7, and 8

SOLAS and MARPOL set the basic regulations for the IMDG Code with the exception of radioactive material. These Conventions are much like US Codes which are further codified in CFRs; SOLAS and MARPOL are in the same way supplemented by the IMDG Code.

1.1.3, Transport of radioactive material provisions, which are based upon the International Atomic Energy Agency's (IAEA's) Regulations for the Safe Transport of Radioactive Material.

Definitions, Units of Measurement and Abbreviations

§1.2

1.1.2.1, Part A of chapter VII for SOLAS, deals with the carriage of dangerous goods in packaged form, and is reproduced in full; definitions for *IMDG Code*, *Dangerous goods*, and *Packaged form* are found therein Regulation 1.

1.1.2.2, Annex III of MARPOL 73/78 deals with the prevention of pollution by harmful substances carried by sea in packaged form and is reproduced in full; definition for *harmful substances* is found therein Regulation 1.

1.2, Definitions of general applicability, units of measurement and a list of abbreviations used throughout the Code are found in Part 1, Chapter 1.2. Additional definitions of a highly specific nature are presented in relevant chapters of the Code.

Training/ Security Provisions

§1.3 – 1.4

General awareness/familiarization, *Function-specific*, and *Security* training provisions in the IMDG Code are (as of 2008) **mandatory**; Safety training is (remains) recommendatory.

- In reference to 49 CFR 171.22(g), *Additional requirements for the use of international standards and regulations*, all shipments offered for transportation or transported in the US **must** conform to (2) training requirements found in Subpart H of part 172 (all training—including Safety).
-

This page has intentionally been left blank

Laws and Authorities

Introduction

This lesson covers laws, regulations, and policies that guide the CG National Container Inspection Program (NCIP). Understanding authorities granted by US laws and international conventions, and recognizing the limitations will allow inspectors to effectively carry out their duties as a member of the regulatory community.

TPO

DETERMINE which laws and conventions affect the transportation of hazardous materials and how they apply to CG container inspections.

Federal Hazardous Materials Transportation Law 49 CFR 171-180

The Federal Hazardous Materials Transportation Law (formerly the Hazardous Materials Transportation Act) is the basic—MAIN—statute regulating hazardous materials transportation in the US. Key elements for the FHMTL:

- No geographical limitations to COTP's jurisdiction—The Coast Guard has authority and responsibility to enforce compliance with the FHMTL whenever US/foreign vessels *will* (at any time during the transportation stream) transport hazardous materials to, from, or within the US.
- Applicable regulations for FHMTL are found in 49 CFR 171 - 180.
- Civil penalty of not < \$250 and not > \$50,000 per violation. Criminal penalties may be assessed for those who knowingly, willfully or recklessly violate a provision of the FHMTL, per 49 CFR 171.1(g).

The Pipeline and Hazardous Materials Safety Administration (PHMSA) coordinates the Department of Transportation's (DOT) hazardous materials program. The PHMSA Office of Hazardous Materials Safety (OHMS) is responsible for generating the HAZMAT regulations 49 CFR 171 – 180. Each DOT/Department of Homeland Security (DHS) modal agency is responsible for enforcing the HAZMAT regulations under their mode. The Federal Motor Carrier Safety Administration (FMCSA), Federal Railroad Administration (FRA), and Federal Aviation Administration (FAA) are the three modal agencies within DOT.

Laws and Authorities (Cont.)

International Convention for Safety of Life at Sea

The development of the **International Maritime Dangerous Goods (IMDG) Code** dates back to the 1960 Safety of Life at Sea Conference, which recommended that Governments should adopt a uniform international code for the transport of dangerous goods by sea to supplement the regulations contained in the 1960 **International Convention for the Safety of Life at Sea (SOLAS)**. The Conference said the proposed code should cover such matters as packing, container traffic and stowage, with particular reference to the segregation of incompatible substances.

The IMDG Code attained mandatory status on 1 January 2004 through amendments to SOLAS. The Code's applicability extends to feeder transportation systems (highway and rail). The Code also applies to dangerous goods which are being received at the port for transfer to a ship, or which have been off loaded from a ship and are awaiting transfer to another ship, or to a connecting mode for delivery to their destination.

The responsibility for compliance with the IMDG Code for the inland portion of intermodal transportation is determined by the competent authority of each country as they adopt the IMDG Code. In the US, the DOT, as the competent authority, authorized its use with certain conditions and limitations.

International Convention for the Prevention of Pollution from Ships (MARPOL Annex III)

The **International Convention for the Prevention of Pollution from Ships (MARPOL)** is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes. MARPOL includes six technical Annexes.

Annex III entered into force on 1 July 1992. It applies to all ships carrying Marine Pollutants in packaged form and contains general requirements for the issuing of detailed standards on packing, marking, labeling, documentation, stowage, quantity limitations, exceptions and notifications for preventing pollution by harmful substances. One revision to this annex has been to identify **marine pollutants** so that they could be packed and stowed on board ship in such a way as to minimize accidental pollution as well as to aid recovery by using clear marks to distinguish them from other (less harmful) cargoes.

The Annex is implemented through the IMDG Code and has been adopted by US DOT for use in the 49 CFR.

Laws and Authorities (Cont.)

International Safe Container Act

The **1972 International Convention for Safe Containers (CSC)** has two goals. 1 – Is to maintain a high level of safety of human life in the transport and handling of containers by providing generally acceptable test procedures and related strength requirements. 2 – Is to facilitate the international transport of containers by providing uniform international safety regulations, equally applicable to all modes of surface transport. In this way, creation of differing national safety regulations can be avoided.

Preceding the US ratifying the CSC in 1978, Congress passed the **International Safe Container Act (ISCA)** of 1977. ISCA directs Coast Guard to enforce and carry out the provisions of CSC. This includes developing regulations to:

- (1) Establish procedures for the testing, inspection, and initial approval of existing and new containers and of designs for new containers, including procedures relating to the affixing, invalidating, and removal of safety approval plates for containers; and
 - (2) Establish procedures to be followed by owners of containers relating to the periodic examination of containers, as provided in the Convention
-

Laws and Authorities (Cont.)

The Ports and Waterways Safety Act 33USC1201 et seq.

CG Captains of the Port (COTP) have broad authority to inspect hazardous materials shipments and waterfront facilities for compliance with various laws and regulations through the **Ports and Waterways Safety Act (PWSA)**.

The PWSA authorizes the COTP to take such action as necessary to “prevent damage to, or destruction of, any bridge or structure on or in the navigable waters of the United States.” Such actions include, but are not limited to:

- Establishing loading procedures, measures, and standards for the handling, loading, unloading, storage, stowage, and movement on the structures of explosives or other dangerous articles.

COTP enforcement of the waterfront facility regulations, found in 33 CFR 126 and 33 CFR 160.109, is geographically limited to waterfront facilities, as defined in 33 CFR 126.01. A facility may include all:

- Piers, wharves, docks, and similar structures to which vessels may be secured;

The PWSA authorizes civil penalties up to \$50,000.00 for each violation, with each day of continuing violation constituting a separate violation.

COTP Orders may be issued under the PWSA to detain a container if it poses a threat to the port or environment. The container need not contain hazmat.

Executive Order 10173 (33 CFR 6.01-3 – 6.04-7)

Executive Order (EO) 10173, issued pursuant to the Magnuson Act of 1950, expanded the role of the CG in safeguarding vessels, harbors, ports, and waterfront facilities during times of war or threat. The EO gave the CG authority to establish rules and regulations to direct the anchorage and movement of vessels, foreign or domestic, in the territorial waters of the US.

Codified in 33 CFR Part 6, EO 10173 is a broad authority that may be used by the COTP to inspect all containers and vehicles on a facility during a Multi-Agency Strike Force Operation, or during periods of heightened security.

“The Captain of the Port may cause to be inspected and searched at any time any vessel, waterfront facility, or security zone, or any person, article, or thing thereon or therein, within the jurisdiction of the United States...”

Penalty provisions for violation of EO 10173 are criminal, with up to ten years prison and up to a \$10,000 fine.

Laws and Authorities (Cont.)

Fourth Amendment

The 4th Amendment to the US Constitution places legal limits on government searches.

“The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no warrants shall be issued, but upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched and the persons or things to be seized.”

Consequences of Illegal Search

Evidence obtained in violation of the 4th Amendment is generally *inadmissible* at trial. This is known as the exclusionary rule. Any additional evidence obtained as a direct result of an illegal search may also be excluded from trial.

COMDTINST M16616.11C

COMDTINST M16616.11C, USCG NCIP, provides guidance to implement applicable hazardous material transportation laws and regulations.

- This instruction outlines use of US laws and international conventions to conduct routine inspections of hazmat containers, search for undeclared materials, and enforce structural standards. Chapter 8 addresses legal considerations when conducting inspections
-

Key Points of Chapter 8 COMDTINST M16616.11C

1. **Closely Regulated Industry/Pervasively Regulated Business:** There is no expectation of privacy for declared containers since they are subject to search at any time. Packages inside the container are subject to 4th Amendment protection, free from unreasonable and unwarranted search, unless the inspector can articulate that undeclared regulated materials are present inside the package- i.e. notices a leak, or Intel.
 2. **Exigent Circumstances/Emergency Situations:** The inspector must reasonably believe that the emergency involves hazmat or that the situation otherwise poses a significant risk of injury to persons or damage to property or the environment. *Inspectors should not attempt to open any leaking packages- the emergency response system should be activated immediately upon discovery!*
 3. **Border Search/Customs Search:** Warrant-less searches may be conducted in designated Customs areas. Inspectors need to understand where Customs areas are located within their port.
 4. **Consent:** If an inspector wishes to inspect packages within a container and an exigent or emergency situation is not present, they must obtain consent from the package owners or their representative. The facility shipping clerk normally **does not** hold authority to grant consent for searches.
-

This page has intentionally been left blank

Inspector Safety

Introduction This lesson covers safety issues involved with intermodal container inspections. As authorized by the HMTL, the Coast Guard inspects many shipments of hazardous material transported by water. This includes shipments which are bound for, or coming from vessel transport.

TPO **RESOLVE** safety risks associated with container inspections I.A.W. CIM16616.11C.

General Inspection of dry freight containers and portable tanks present the potential for significant hazards and health risks. The most prevalent risk is that posed by vehicles/heavy equipment. Falling from a container or being hit by falling/shift cargo also occurs on a reoccurring basis. Lastly, the atmospheres in the containers must be safely managed.

SWP Inspection Standards The following is a general list of Safe Work Practices (SWP) for inspecting containers and portable tanks:

- Inspect containers on shore unless directed by the COTP.
 - Review shipping papers, if possible, to confirm cargo in a container.
Note: There is an approx 25% discrepancy rate with shipping papers.
 - Review hazard information provided by the shipper (i.e. MSDS, ERG).
 - Establish a safe zone to conduct the inspection. Use government vehicles and, or traffic cones to keep trucks and other heavy equipment away from the container being inspected.
 - Prior to opening the doors, attach a container strap to prevent the container door from uncontrollably opening and allowing cargo to fall out when the locking bars are rotated.
 - Assume all containers contain an unsafe atmosphere (oxygen deficient, explosive or toxic) and after opening the container quickly move away (upwind) from it and let it ventilate naturally for 15-30 minutes.
 - Treat any leaking cargo that may be hazardous as a release—terminate the inspection, egress up wind, and notify appropriate parties.
 - Exercise caution when examining cargo.
-

Inspection Safety (Cont.)

Terminal Hazards

Designated waterfront facilities are very busy places where time is money. They can also be quite confusing, especially if you are new to an area. Some of the hazards you will see at a facility include:

- Fast moving trucks
 - Container handling equipment with restricted driver visibility
 - Containers mounted on a chassis (fall hazard)
 - Containers being moved overhead
 - Falling twist locks and other container locking equipment
 - Containers collapsing or falling
-

Container Hazards

The nature of a hazardous materials inspection itself is an obvious hazard while inspecting a container. It is still important to recognize the other hazards shipments can exhibit. Hazards associated with hazardous material and general cargo include:

- Improperly dunnaged or packaged cargo; such as:
 - Fallen crates, boxes, or pallets
 - Scattered dunnage
 - Spilled/leaking cargo
 - Sharp nails/metal
 - Cargo falling out of container
 - Oxygen deficient atmospheres
 - Flammable atmospheres
 - Toxic atmospheres
 - Falling from tank containers
 - Inspector fall hazard over 6 feet
-

Inspector Safety (Cont.)

Oxygen Deficiency

The following situations could be an indication that the container could be oxygen deficient:

- Contains any organic matter, which may decay
- Contains scrap iron
- Shows rust
- Has been freshly painted
- Contains fruits or vegetables
- Has been inerted. You will be able to determine this from the warning on the shipping papers or on the container doors.

Personal indications that the container could be oxygen deficient after opening are:

- Dizziness,
 - Light-headedness,
 - Happy/Goofy feelings, and/or
 - Blackouts
-

Flammable Vapors

Flammable vapors may cause explosions or fires. Indications that the container could have flammable vapors are:

- Containers loaded with flammable or combustible cargoes
 - Containers that have been freshly painted
 - Car or machinery parts
-

Toxic Chemicals

Toxic chemicals may be fatal if inhaled or absorbed through the skin. Indications that the container could have toxic chemicals are:

- Containers which hold any organic matter that may decay. Decaying organic matter generates hydrogen sulfide gas, which has an offensive odor like rotten eggs.
 - Containers that have been freshly painted.
 - Containers which contain any hazardous materials that are listed as an inhalation hazard in the 49 CFR 101 table.
 - Containers which have been fumigated. These containers generally transport grain and/or wood products.
-

Inspector Safety (Cont.)

Radioactivity

IAW COMDTINST 16600.2A, the personal radiation detector (PRD) is to be worn on every inspection/boarding by those units equipped with PRDs. The following list provides information on the use of a PRD:

- Worn clipped to the uniform when conducting an inspection, the PRD or “RadPager” alarms in the presence of gamma or neutron radiation.
- PRDs are personal protection devices that can also be used to locate radioactive sources while maintaining personal safety and practicing ALARA.
- When PRD readings exceed certain thresholds (consistent and continuous neutron readings or a gamma reading of 4,500 microrem per hour [$\mu\text{rem/h}$] or “OL”) or a source cannot be identified, USCG boarding parties SMAC, keep exposure ALARA, and request Level II RAD trained personnel.
- ALARA: As Low As Reasonable Achievable
- Move away until Gamma/Neutron levels are permissible.
- SMAC: Stop, Move back, Alert, Close off
 - Alert team members command center, facility, and CBP.
 - Most ports have CBP on the facility which can lend immediate support.

Tools to Control the Hazard

The most important tool to use while conducting container inspections is your own head. Remain alert and pay attention to your surroundings. The easiest tool to use is personal protective equipment (PPE) such as:

Hard hats

- | | |
|--------------------|-----------------------|
| • Safety Glasses | • O2 sensors |
| • Coveralls | • Multi-gas detectors |
| • Reflective vests | • Radiation detectors |
| • Gloves | • Safety straps |
| • Safety Boots | |

!! The safety strap is a very important safety tool while inspecting freight containers. If used properly by securing around the locking bars, it will prevent the doors from violently opening and keep shifted cargo from falling out onto you/team members. At minimum, it will give you time to get out of the danger zone.

Note: The safety strap must be made of synthetic material, 5’ – 6’ in length, fixed length, non-shock absorbing design, and a breaking strength of at least 4000 pounds.

Inspection Process

Introduction

Inspection of hazardous materials being transported within intermodal freight containers involves targeting of containers for inspection, conducting safe inspections, recording discrepancies, and acting on those discrepancies or problems.

TPO

SELECT and **ENTER** a container I.A.W CIM 16616.11C.

Container Selection

Performance Goals for inspections—the new COMDTINST Manual bases performance goals on container traffic volumes in each COTP zone. COTP's should establish the number of container inspections to be conducted per year as follows:

- 1) At the beginning of each fiscal year, acquire the total number of containers without regard to size that move through all ports within the COTP zone. The size of the container is no longer a consideration factor of the NCIP. This container throughput information can generally be obtained from local port authorities or port facilities through the port authority or facility's website, or by contacting representatives directly. If there is an inability to acquire this data locally, units may use the container throughput data from the Performance Goal Calculator posted within the Commandant (CG-FAC-2) portal site at:
<https://cgportal2.uscg.mil/units/cgfac2/SitePages/Home.aspx>
This data is derived from the American Association of Port Authorities (AAPA) website at <http://www.aapa-ports.org/>. This information may not be updated annually and/or lack information on all container ports; therefore engagement with port authorities and individual facilities is the preferred method to obtain container throughput data.
- 2) Enter the total number of containers into the Performance Goal Calculator provided within the Commandant (CG-FAC-2) portal site. The resulting value will be the baseline sampling size of containers to be inspected. Appendix C contains a printed copy of the Performance Goal Calculator.
- 3) Apply appropriate incentives. Units may “buy down” the baseline sampling size by applying one or more incentives, provided all criteria have been met to the satisfaction of the COTP. These incentives are aimed at helping the COTP to target inspections at the highest risk containers by excluding containers that other organizations inspect, or which otherwise represent lower risk. Reducing the baseline will reduce the overall number of inspections required and the operational burden on an already strained staff. The intent of all the incentives below is to cooperate with port partners, review known shipping data (such as cargo sources, contents, and destinations), coordinate inspection activities to avoid duplication of effort, and use available Coast Guard personnel to target the highest risk shipments. See COMDTINST M16616.11C Chapter 2.

COTP Zone: Savannah		CY 2014 Goal: 1535
Enter Annual Container Throughput in Boxes - Use data from your ports. If no data exists, use the throughput data from Table 1 on the right.		1645043
Qualify for National Cargo Bureau Incentive? (Click on cell to toggle Yes/No)	Yes	
Qualify for Customs and Border Patrol Incentive? (Click on cell to toggle Yes/No)	Yes	
Qualify for Port / Facility Interaction Incentive? (Click on cell to toggle Yes/No)	Yes	
Select the Confidence Interval (CI) Base by using the drop down list (click on cell) after comparing your throughput value to Table 2 below.	1.75	
Calculated Annual Performance Goal	1535	

Table 2	
COTP Throughput Threshold	Minimum CI
Equal or greater than 5000000	0.5
Equal or greater than 3000000	1.25
Equal or greater than 1000000	1.75
Equal or greater than 500000	2
Equal or greater than 100000	2.75
Less than 100000	3.75

Table 1	
COTP	Throughput
Sector Anchorage	274425
Sector Baltimore	402131
MSU Baton Rouge	1482
Sector Boston	110675
Sector Charleston	798879
Sector Delaware Bay	316293
MSU Texas City (Galveston)	35517
Sector Guam	108634
Sector Hampton Roads	1102051
Sector Honolulu	697008
Sector Houston	1141763
Sector Jacksonville	466834
MSU Lake Charles	1669
Sector LA/LB	8147439
Sector Miami	1199692
Sector Mobile	257278
Sector New Orleans	293293
Sector New York	3197016
Sector North Carolina	157867
Sector Northern New England	3426
MSU Port Arthur	3615
MSU Portland (Columbia River)	111200
Sector Puget Sound	1981036
Sector St. Petersburg	33227
Sector San Diego	49706
Sector San Francisco	1318992
Sector San Juan	645476
MSU Savannah	1645043

***Reporting of Performance Goal. Units shall provide a copy of the completed Performance Goal Calculator to Commandant (CG-FAC-2) upon determination of the performance goal and no later than 1 FEB of each year. This reporting enables CG-FAC to plan resources, training, and target setting necessary to manage the overall program.

Inspection Process (Cont.)

Inspection Type and Frequency (Table 1)

IAW CIM 16616.11C, the following table lists the two inspection types along with the breakdown (percentage wise) of how many should be done:

Inspection Type	Breakdown % of inspections
Declared HazMat	50%
General Cargo	50%

Selection of Containers with Declared Hazmat

1. *Select ship & determine number of containers to be inspected:* Refer to Table 1. Use the Ships Arrival Notification System (SANS) or other means prescribed by the COTP.
2. *Obtain list of Dangerous Cargo being offloaded:* Contact your local CBP office for a list of international containers being offloaded. For domestic shipments, contact a facility representative for this list.
3. *Container Selection:* Cargo risks were determined using statistics on incidents, injuries, deaths, evacuations, marine pollutant status and response costs. The *Tier Table* below designates higher historical risk cargoes in Tier 1, and lower risk cargoes in Tier 2. 75% of declared hazmat inspections should be containers with Tier 1 cargoes and 25% with Tier 2.

Tier Table

Risk Tiers for Containerized Cargoes:

Tier 1 Cargoes	Tier 2 Cargoes
Class 1 Explosives Class 4.2 Spontaneously Combustible Materials Class 4.3 Dangerous When Wet Materials Class 5.2 Organic Peroxides Class 6.1 Poisonous material Class 6.2 Infectious substances Class 7 Radioactive	Class 2.1 Flammable Gases Class 2.2 Non Flammable Gases Class 2.3 Toxic Gases Class 3 Flammable & Combustible Materials Class 4.1 Flammable Solids Class 5.1 Oxidizer Class 8 Corrosive Materials Class 9 Misc. Dangerous Goods

4. *Notify Terminal of Selected Containers:* Provide the terminal rep responsible for cargo operations with ID numbers of all containers selected and request shipping papers for each. This should allow containers to be staged efficiently as they are offloaded. Schedule inspections in consultation with facilities to minimize delays to shipments.

Inspection Process (Cont.)

Selection of Containers with Declared Hazmat (cont.)

5. *Conduct Inspection and Record Results:* Declared hazmat inspections with deficiencies shall be recorded on a CG-5577. Hazmat inspections with NO deficiencies may be captured on an alternate form. Declared (known) hazmat inspections are entered in MISLE as “Declared” inspection type.
6. *Notification of Enforcement Actions and Detentions:* Provide white copy(ies) of completed CG-5577 from(s) to the terminal manager or authorized rep. And, provide any additional handling instructions in the event of a detention and follow unit procedures regarding containers placed out of service or cargoes put on hold. Reference Chapter 5 of CIM 16616.11C for further guidance.

Selection of Containers with General Cargo

1. *Determine number of containers to be inspected:* Refer to Table 1. General cargo inspections should verify that hazardous materials are not being shipped covertly as general cargo. Shipping hazardous material as general cargo, known as **undeclared** hazardous materials, continues to be a leading cause of transportation incidents.
2. *Obtain list of general cargo containers:* Contact your local CBP office for a list of containers being offloaded. For domestic shipments, contact a facility representative for this list.
3. *Select Containers:* Select randomly. Units shall have a written process to randomly select general cargo containers. One random process is to compare the day’s date (last digit of the day) to the check digit of the container ID numbers; *for example*, select containers having a 7 for a check digit if the date of inspection is December 7th, 17th or 27th. To widen the search criteria units may use both digits in the date; *for example*, if today’s date is December 7th, you would look for check digits 0 and 7.
4. *Notify the Agent and Terminal:* Provide the terminal representative responsible for cargo operations with ID numbers of all the containers selected and request shipping papers for each. This should allow containers to be staged efficiently as they are offloaded. Schedule inspections in consultation with facilities to minimize delays to shipments.
5. *Conduct Inspection and Record Results:* General Cargo inspections may be recorded on a CG-5577 or an alternate non-deficiency form. General Cargo inspections are entered in MISLE as “General Cargo” inspection type.
6. *Notification of Enforcement Actions and Detentions:* Provide copy(ies) of CG-5577(s) to the terminal manager or authorized representative. And, provide any additional handling instructions in the event of a detention and follow unit procedures regarding containers or shipments on hold.

Inspection Process (Cont.)

Inspection Concerns

- Inspection Controls Established For Specific Hazards: Shipments of radioactive materials, identified in 49 CFR 173.403 or section 2.7.2 of the IMDG Code shall only be inspected externally because of the specialized training and safety equipment required for inspection of radioactive packages. In cases where an internal inspection is necessary, the COTP should contact his/her District office for guidance and seek specialized assistance, such as from the Coast Guard National Strike Force.
- Containers with Poison Inhalation Hazard (PIH) commodities, as identified in the Hazardous Material Table (49 CFR 172.101), or with FUMIGANT warning signs, per 49 CFR 173.9 or Section 5.5.2.3 of the IMDG Code, require additional safety steps as described in step 13b of this lesson. If the inspection reveals a reasonable suspicion of a discrepancy needing further investigation, the container inspector may require the cargo custodian to devan packages as necessary.

Phase 1 Preparation

Inspections must be conducted by two or more-person teams. The team must have at least one qualified container inspector. Additional team members may be government or facility employees.

Step 1: Establish a communication plan. Provide the inspection team with reliable voice communications, including instructions on how to contact terminal operators if HAZMAT is encountered during your inspections. To ensure voice communications do not present a hazard to the inspection, this might require the use of intrinsically safe telephones and very high frequency (VHF) radios, or established procedures for calling from a safe enclosure such as a vehicle or building..

Step 2: Assemble personal protective equipment (PPE) and necessary inspection equipment.

- a) Wear hardhats, coveralls, safety glasses, safety shoes, high visibility or reflective vests, gloves, and personal radiation detectors (PRDs).
 - Inspectors shall also carry an emergency escape breathing device (EEBD) if planning to enter a container that has the potential for suddenly changing atmospheres, such as a cargo of compressed gas cylinders.
- b) Calibrate and conduct field checks with atmospheric monitoring devices. These calibrations and checks are in addition to those conducted at the unit when the equipment is initially drawn.
- c) Assemble a container inspection kit containing all required tools, references, and paperwork.

Step 3: Select containers for inspection. Coordinate with CBP per Chapter 2 of the TTP Manual: Targeting Containers and Types of Inspections. If you intend to inspect a container that has been sealed by another government agency, inform that agency prior to commencing your inspection. Provide container and existing seal serial numbers, date, and location of where your inspection is to take place, as well as your contact information. This ensures necessary

Inspection Process (Cont.)

Preparation Phase 1 (Cont.)

coordination takes place so as not to inadvertently compromise that agency's inspection program, investigative efforts, or duplicate inspection efforts already taken. Record this intra-agency coordination in the associated MISLE inspection activity narrative as follows:

- Include a statement indicating that advanced coordination with the other agency took place.
- Record the other agency's removed seal serial number.
- Provide the replacement USCG seal serial number as part of the narrative.

Step 4: Conduct safety brief. Prior to departing the office, the lead inspector assembles the team and conducts a safety brief. At a minimum, the safety brief covers:

Operational risk assessment using reference (e), Operational Risk Management, COMDTINST 3500.3 (series).

Operational Risk Management

The 7 steps of the ORM:

1. **Define mission Tasks** - Define what tasks are required to accomplish the mission
2. **Identify hazards** - Any real or potential condition that can cause mission degradation, injury, illness, or death to personnel or damage to or loss of equipment or property
3. **Assess risk** - Apply the SPE (See below) or GAR model to each risk. (See next page)
4. **Identify options** - Is the risk acceptable? Can we modify the mission to reduce the risk?
5. **Evaluate risk vs. gain** - Gain should balance or outweigh the Risk
6. **Execute decision** - Decision rational must be communicated
7. **Monitor situation** - Identify if changes are needed, Reassess the mission if needed

Severity Probability Exposure

Severity x Probability x Exposure = Risk

1 = Low Risk 5 = High Risk

Severity 1 – 5

Probability 1 – 5

Exposure 1 – 4

Value / Risk Level / Action

80-100 / very high / STOP

60-79 / high / immediate correction

40-59 / substantial / correction req'd

20-39 / possible / attention needed

1-19 / slight / possibly acceptable

Inspection Process (Cont.)

Preparation Phase 1 (Cont.)

Green
Amber
Red

Enclosure (1) to SECDEL BAYNOTE 3500.2A

SECTOR DELAWARE BAY RISK MANAGEMENT TOOL (GAR MODEL)

Risk Factor	Risk Factor Score										User Instructions	
	1	2	3	4	5	6	7	8	9	10		
Supervision. How qualified the Mission Leader (ML) is and whether effective supervision is taking place.	Abundant On-scene experienced Supervision. Several experienced on-scene Supervisor(s) within span-of-control (3-5) to manage routine tasks.	0	Good On-scene Experienced Supervision.	0	On-scene Supervision, Limited Experience. [Benchmarks]	0	Limited On-Scene Supervision, limited experience.	0	No On-scene Supervision. Mission leader has no experience, no "reach back" to office; ML has multiple tasks beyond supervision.	0	0	FOR CDO ONLY · Log GAR score in corresponding MISLE activity/daily log book. · If any individual category scores an "8" or above, notify applicable Dept Head. · If total score is >35, Brief Div. Chief /CO/OINC. · If total score is >44, brief Dept Head.
Planning. How much information you have, how clear it is, and how much time you have to plan the evolution or evaluate the situation.	Very Stable Situation / Well Planned Activity. Situation is well known by all and unlikely to change, planning took place well in advance.	0	Somewhat Stable Situation / Planned Activity.	0	Potentially Unstable Situation / Planned Activity. [Benchmarks]	0	Unstable Situation / Unplanned Activity	0	Very Unstable Situation / Unplanned Activity. Little or low quality information, rapidly & unpredictably changing, no planning occurred for activity.	0	0	
Crew Selection. Qualifications and experience level of the individuals used for the specific evolution.	Very good team / activity match. All team members 100% qualified for tasks, very experienced, 2+ years in this AOR doing this task.	0	Good team / activity match	0	Moderately poor team / activity match. [Benchmarks]	0	Poor team / activity match	0	Very poor team / activity match. Team 100% unqualified for tasks, little experience, new to AOR and/or task, team hasn't previously worked together.	0	0	
Crew Fitness. Physical and mental state of crew taking into account recent quality & quantity of sleep of each member.	Very good team readiness. Requires minimal physical activity, mental acuity, crew in excellent fitness for required activity, team well rested. Little to no commute.	0	Good team readiness	0	Moderately poor team readiness. [Benchmarks]	0	Poor team readiness	0	Very poor team readiness. Demanding physical effort, extremely high mental acuity, and team is extremely fatigued.	0	0	
Environment. Factors affecting personnel performance as well as the performance of the asset or attached resources.	Very forgiving environment. Unlimited access to equipment, personnel, minimal to zero exposure to chemical or geographic hazards, on scene Wx calm and temperate, daylight mission.	0	Forgiving Environment	0	Moderately unforgiving environment. [Benchmarks]	0	Unforgiving environment	0	Very unforgiving environment. Activity occurs in extreme Wx conditions; no access to critical resources, exposure to chemical hazards/oxygen deficiency spaces expected.	0	0	
Event/Evolution Complexity. Consider both the duration and complexity of the event. Generally, the longer one is exposed to a hazard, the greater the risks.	Very simple activity. Activity involves no complexity, requires no POS, training, oversight, or familiarization.	0	Simple activity.	0	Moderately complex activity. [Benchmarks]	0	Complex activity.	0	Very complex activity. Activity involves on-scene responses to extreme cases where life, limb and/or environment are threatened by split-second decisions.	0	0	
Total Score 0 – 23 GREEN (low risk)			Total Score 24-44 AMBER (Caution)				Total Score 45-60 RED (High Risk)					

(Descriptive Benchmarks on reverse side)

TOTAL SCORE _____

Assignment of roles and duties:

Inspection Team Leader. Targets containers for inspection, ensures all inspections are conducted in a safe manner, and determines if any violations of the following references have occurred:

- Federal Hazardous Materials Transportation Law (FHMTL), 49 U.S.C. Chapter 51 §§ 5101-5128.
- International Safe Container Act (ISCA) of 1977, 46 U.S.C. Chapter 34 §§ 1501-1508.
- Ports and Waterways Safety Act (PWSA), 33 U.S.C. Chapter 25 §§ 1221-1236.

Also ensures all required forms and MISLE entries are complete and accurate, and communicates any regulatory requirements to the container custodian, shipper, or owner/owner's agent. The inspection team leader should possess a Coast Guard container inspector qualification letter (EC) issued by the COTP.

Inspection Process (Cont.)

Preparation

Phase 1 (Cont.)

Inspection Team Safety Watch. Ensures all inspection safety procedures are followed and performs risk assessments for each container being inspected.

Acts as safety observer when:

- Container doors are being opened.
- Inspectors examine tops of accessible tanks and containers.
- Inspectors conduct internal inspections of freight containers.

The inspection team safety watch can also act as an inspection team member.

Inspection Team Member. Assists the inspection team leader in conducting the inspection.

- Required use of PPE.
- Best work practices.
- Emergency egress muster location.
- Known facility hazards.
- Accidental exposure procedures.

Step 5: Identify the contents of containers selected for inspection.

- **Declared HAZMAT:** Obtain and review the shipping papers for containers with declared HAZMAT. If shipping papers are not provided in a reasonable time, consider placing these containers on hold for regulatory violation until proper papers are provided.
- **General Cargo:** Obtain a bill of lading or other descriptive document for containers with general cargoes.

Step 6: Stage containers for inspection. Evaluate existing staging locations at the facility, keeping in mind not all facilities have a staging location that is a safe distance away from traffic patterns or container handling equipment. Under ideal circumstances, position containers selected for inspection:

- On a level site located a safe distance away from existing traffic patterns, container handling operations, and concentrations of containers scheduled for movement.
- In a manner to maximize natural ventilation.
- In staging areas with adequate lighting, in close proximity to facility fire station, and away from water runoff drains and electrical outlets.
- As an additional precaution when a container is on a chassis, place cones or park a vehicle, if available, immediately in front of the container to prevent a facility truck from connecting up to the chassis during the inspection.

Step 7: Establish a safety watch and review safety procedures.

- Discuss inspection activity with the safety watch/inspection team member. Ensure reliable voice communications between the safety watch/inspection team member, facility supervisors, and the COTP.

Inspection Process (Cont.)

Preparation

Phase 1

- Review potential hazards of the commodities in the targeted containers with the team.
 - Assess the staging area and discuss any unique aspects that might pose potential safety hazards. This includes identification of safe egress routes.
-

Safety

Assessment

Phase 2

Step 8: Visual assessment. Conduct an external assessment, including a complete walk around of selected containers to ensure safety of Coast Guard personnel. Remain alert for indications of potential internal hazards such as cargo leaks or severe container damage

Step 9: Atmospheric testing of intermodal containers. Place a multi gas meter on the container chassis immediately adjacent to the bottom edge of the container doors and centered so that the meter is in the best position to detect anomalies as the container doors are first opened. If the container is resting on the ground and is not on a chassis, place the meter on the ground immediately adjacent to and centered with the container doors.

If the multi-gas meter alarms, this is an early indication that the atmosphere inside the container might be hazardous:

- If the meter stops alarming, determine the reason for the initial alarm to ensure there is no further cause for concern. Usual causes for a meter to temporarily alarm include a sudden drop in oxygen level or a sudden presence of carbon monoxide. Both conditions are addressed by properly venting the container per step 13 below.
 - If the meter does not stop alarming, re-check the atmosphere using a different meter.
 - If the different meter also alarms, place the shipment on hold and have the container devanned in an appropriate location by qualified personnel designated by the container's current custodian.
-

Container

Opening

Procedures

Phase 3

Step 10: Attach a safety strap. Attach a safety strap across the container's doors prior to opening. Ensure the safety strap crosses the vertical seam between both doors and passes behind the two innermost door locking bars to minimize free movement of the right door when it is first opened. This reduces the risk of personal injury from shifted cargo. Use a safety strap with a minimum breaking strength of 4,000 pounds and 5 to 6 feet in length. Only use a safety strap made of synthetic material (e.g., nylon) and not of shock cord material. Contact CITAT for additional information on safety straps.

Step 11: Remove containers seals. Seals that are removed shall be placed inside the container at the conclusion of the inspection and shall be replaced in kind. Record the number of the removed and replacement seal on the CG 5577

Inspection Process (Cont.)

Container Opening Procedures Phase 3 (Cont.)

form. After removing the seal and opening the container, place the removed security seal inside the container.

Step 12: Assess tailgate for shifted cargo. With the safety strap in place, carefully crack open the curbside (right side) door enough to determine if there is any danger from spilled or shifted cargo—a second inspector will do this by looking into the container standing to the left of the roadside (left side) door at a safe distance.

Step 13a: Ventilate the container. **For containers other than those that have been fumigated or contain Poison Inhalation Hazard's (see Step 13(b)),** loosen the safety strap and ventilate the container by fully opening both doors for natural ventilation. While leaving one end of the safety strap secured to the locking bars on the curbside doors, unhook the safety strap from the roadside door. Maintain a safe distance and visually inspect the tailgate area for shifted cargo. If shifting or leaking is not evident, first open the curbside door by holding onto the bitter end of the strap and walk away from the container while facing away. After visually inspecting again from a safe distance for shifted cargo or leaks, slowly open the roadside door. Once both doors are open all personnel should stand clear and upwind to allow the container to ventilate for a minimum of 15 minutes. If the multi gas meter alerts or its readings deviate from background ambient levels during any part of step 13a, then return to step 12.

Step 13(b): Ventilation of containers that have been fumigated/contain PIHs. Per National Container Inspection Program Manual, COMDTINST M16616.11 (series), do not open fumigated containers until 24 hours after the fumigant was applied. With COTP approval, container inspectors can place the container on hold until the 24 hour requirement has passed.

For containers that have been fumigated/contain PIHs, follow the procedures listed above with the following exceptions:

- After opening the right door, wait 15 minutes before opening the left door.
- Once both doors are fully open, ventilate the container for a minimum of 30 minutes before proceeding to the next step.

Step 14: Test the atmosphere at the tailgate. Take atmospheric measurements above the inspector's head, at head level/breathing zone level, and at waist level. After adequate ventilation, the oxygen level at the container's tailgate should equal ambient levels.

Conduct the Tailgate Inspection Phase 4

Limit the number of persons conducting the tailgate inspection to the minimum necessary. Exercise caution when trying to examine cargo forward of the doors.

Step 15: Conduct the Inspection. Complete the tailgate inspection using the procedures contained in Form CG-5577, reseal the container, complete Form CG-5577, and deliver copies to the container custodian.

Inspection Process (Cont.)

CHECKLIST A TAILGATE CONTAINER INSPECTION PROCEDURES

This job aid is intended to provide summary information for this enclosure and should be used as a checklist during shore side container inspection operations.

PHASE 1: PREPARATION.

- _____ 1. Establish communications between inspection team, the COTP, and the facility.
- _____ 2. Assemble personal protective equipment (PPE) and needed inspection equipment.
- _____ 3. Select containers for inspection.
- _____ 4. Conduct safety brief in accordance with TTP.
- _____ 5. Identify the contents of selected containers and obtain shipping papers.
- _____ 6. Stage containers for selection in accordance with TTP.
- _____ 7. Establish safety watch review safety procedures.

PHASE 2 VISUAL ASSESSMENT.

- _____ 8. Examine the exterior of the container, looking for indications of potential internal hazards such as cargo leakage, damage to the container, etc. *Do not open a container that has been fumigated within the previous 24 hours. Review the container's fumigant marking to ensure 24 hours have elapsed since being fumigated.*
- _____ 9. Place a multi gas meter at the foot of container door sill to test vapors that might escape from container.

PHASE 3: TAILGATE INSPECTION PROCEDURES.

- _____ 10. Attach container strap to container doors. Ensure strap passes behind all four locking bars.
- _____ 11. Remove the container seal and record seal number.
- _____ 12. Assess tailgate for shifted cargo. Open the curbside door enough to check for shifted cargo, spilled material, or other hazards. If hazards are determined, notify the facility manager/container custodian immediately. **LEAVE THE AREA IMMEDIATELY, AND DO NOT ATTEMPT TO CLOSE THE DOOR. POST A SAFETY WATCH A SAFE DISTANCE AWAY** from the container
- _____ 13. Ventilate the container for 15 minutes, unless the container has been fumigated or contains a Poison by inhalation hazard in which ventilate 30 minutes (15 minutes per door).
- _____ 14. Test the atmosphere using the multi gas meter.

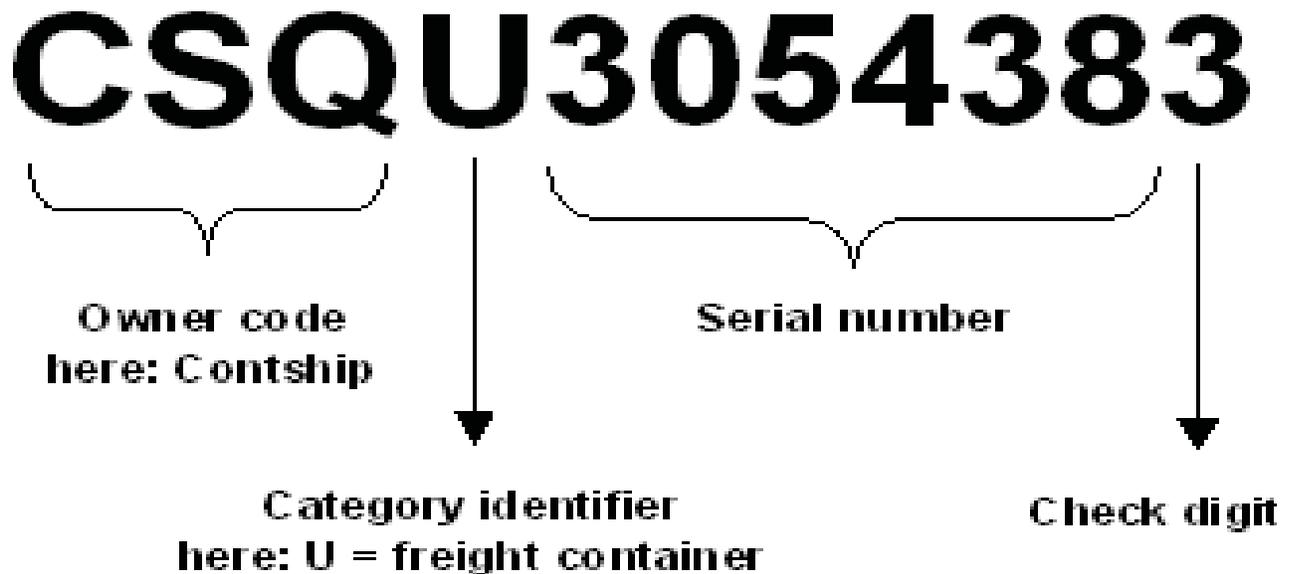
PHASE 4: CONDUCT THE TAILGATE INSPECTION.

- _____ 15. Conduct tailgate inspection. A minimal number of people should enter the tailgate area (Marks, Labels, Segregation, Packaging, and Blocking & Bracing, etcetera).

Inspection Process (Cont.)

ISO 6346

ISO 6346 is an international standard which describes the identification of a shipping container. The standard is maintained by the BIC (International Container Bureau) and covers the serial number, owner, country code, and size of any given shipping container.



Category identifier can be:

J: detachable freight container related equipment

R: reefer (refrigerated) containers

U: freight containers

Z: trailers and chassis

Structural Examinations

Introduction

This lesson will provide container inspectors understanding of container structural components, the use of governing policies and/or regulations, and damage tolerances. This lesson will increase the inspector's knowledge of the Convention for Safe Containers (CSC) inspection process and their awareness of the Approved Continuous Examination Program (ACEP).

TPO

DETERMINE the standards and requirements for structural safety and serviceability of an intermodal container IAW IICL-5, IMO Circ 138, 49 CFR 176.172 and 49 CFR 450-453.

General

Dry freight containers and portable tanks are often subjected to harsh operating environments and often incur damage incident to transportation. The IMO has established a program, ISCA, to decrease mishaps due to structurally deficient containers. The US signed on to the program and through the USCG Commandant, established policies and *guidelines* (IICL-5 & IMO 138) for inspectors to verify that containers and tanks are within safe and acceptable damage tolerances.

ISO Markings

The International Standards Organization (ISO) developed international *standards*—**not** requirements for marking of freight containers. The ISO markings include:

- Owner's prefix, container serial number, and check digit
- Country code
- Type, size, and *weight limits

** 49 CFR 450.7 requires max gross weight markings on the container are consistent with max gross weight information on the safety approval plate.*

CSC Safety Approval Plate 49 CFR 451 CSC

The CSC safety approval plate is required for *all* intermodal containers used in international transport, and domestic containers used for transport of Class 1 commodities. Required information is found in 49 CFR 451.25 & CSC (i.e. safety approval number—USA/(approval authority ID code)/(year of approval).

Note: There are NO marking requirements for containers used in domestic transport *only*.

Structural Examinations (Cont.)

Periodic Examinations 49 CFR 452

CSC requires each owner of approved containers used in **international transport** to examine their containers or have them examined:

- **5** years after manufacture, and at intervals of not more than **30** months thereafter.
 - **Next due inspection date** must be marked on the Safety Approval Plate or as close as practical.
-

ACEP 49 CFR 452

An Approved Continuous Examination Program may be used in lieu of a periodic examination. ACEP approval requirements are found in 49 CFR 452.

- “**ACEP/USA** (year continuous examination program is approved for that company)” must be marked on the Safety Approval Plate or as close as practical.
 - Exams performed at periods not to exceed **30** months; and, or each time a container **undergoes a major repair**, refurbishment or on-hire/off-hire interchange.
-

Container Damage (Explosive cargoes) §176.172

Requirements for Containers transporting explosives are found in 49 CFR 176.172.

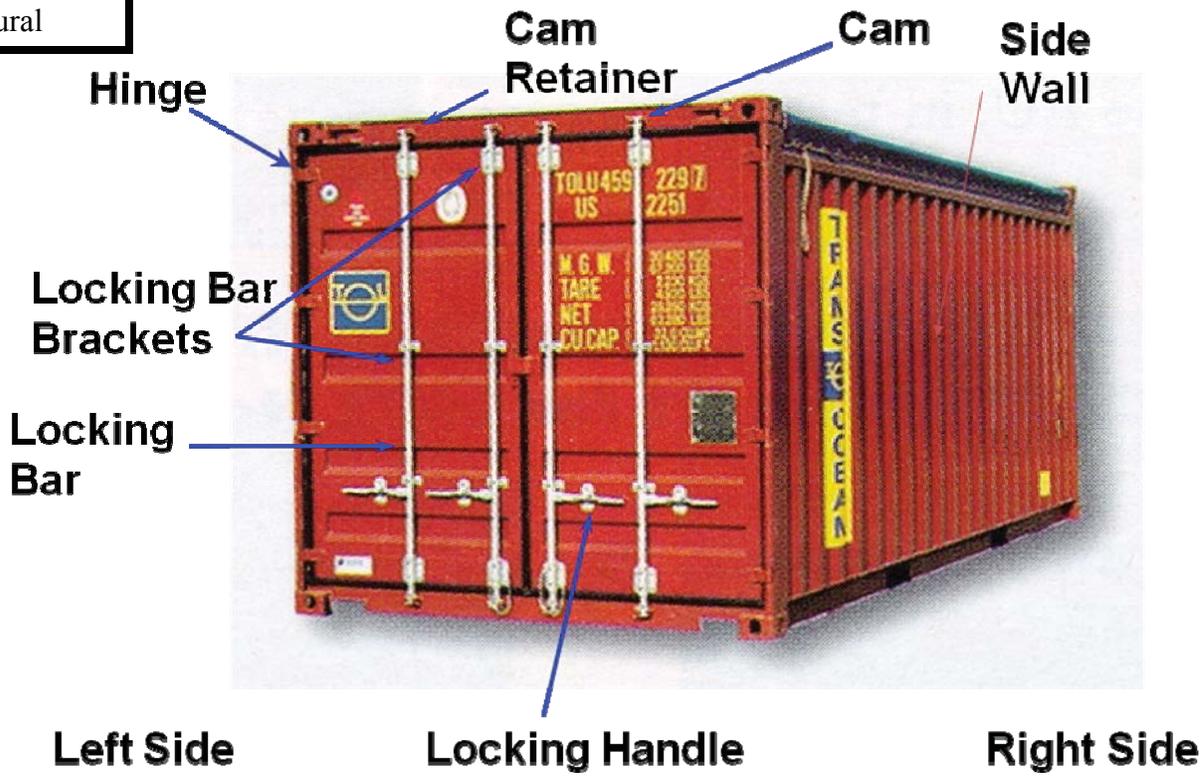
Note: Substitute all criteria in the following table with $\frac{3}{4}$ **in**, for explosive requirements.

Container Damage (Non-Explosive)

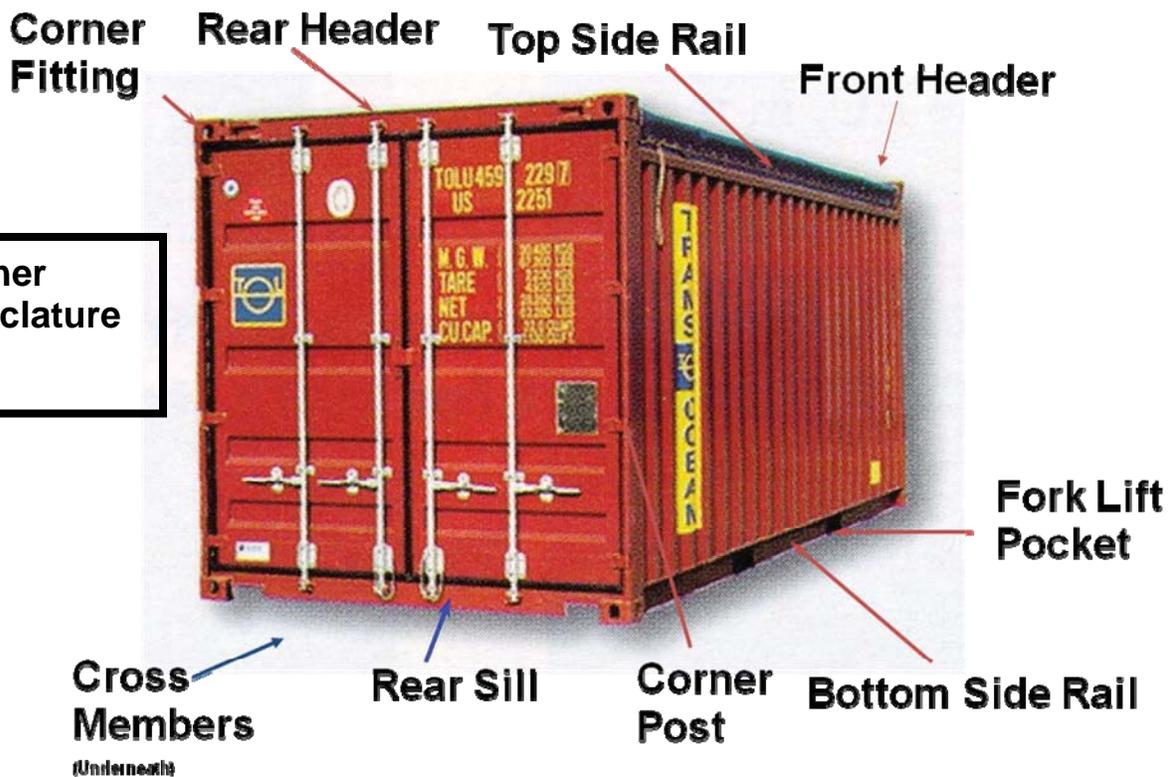
The table below incorporates IICL-5 & ISO 668/1161 and IMO-138 *standard* to determine out-of-service damage criteria for containers laden with **NON-explosive** cargoes.

Structural Examinations (Cont.)

Container Nomenclature
Non-Structural



Container Nomenclature
Structural



Structural Examinations (Cont.)

STRUCTURAL COMPONENT	MANDATORY OUT OF SERVICE DAMAGE CRITERIA	INDUSTRY STANDARD FOR STRUCTURAL DAMAGE
	IMO-138	
Top Rails	Local deformation to the rail in excess of 60 mm (2-3/8 in) or separation or cracks or tears in the rail material in excess of 45 mm (1-7/8 in) in length. Note: On some designs of tank containers the top rail is not a structurally significant component.	Bend or dent within 250mm (10 in) of a corner fitting, any deformation such as bend, bow, dent, etc. more than 30mm (1-3/16 in) deep
Bottom Rails	Local deformation perpendicular to the rail in excess of 100 mm (4 in) or separation or cracks or tears in the rail's material in excess of 75 mm (3 in) in length.	Bend or dent within 250mm (10 in) of a corner fitting, any deformation such as bend, bow, dent, etc. more than 50mm (2 in) deep
Front Headers	Local deformation to a header in excess of 80mm (3-1/8 in) or cracks or tears in excess of 80mm (3-1/8 in) in length	Any deformation such as bend, bow, dent, etc. more than 25mm (1 in) deep
Rear Headers	Local deformation to a header in excess of 80mm (3-1/8 in) or cracks or tears in excess of 80mm (3-1/8 in) in length	Any deformation such as bend, bow, dent, etc. more than 35mm (1-3/8 in) deep
Sills	Local deformation to a sill in excess of 100mm (4 in) or cracks or tears in excess of 100mm (4 in) in length	Interference with door closures, securement and/or weather tightness
Corner Posts	Local deformation to a post exceeding 50mm (2 in) or tears or cracks in excess of 50mm (2 in) in length	Any deformation such as bend, bow, dent, etc. more than 25mm (1 in) deep, regardless of length or location. Two or more dents on a single post if each is more than 15mm (9/16 in) Any deformation causing interference with door operation, securement or water tightness
Corner and intermediate fittings (Corner castings)	Missing corner fittings, any through cracks or tears in the fitting, any deformation of the fitting that precludes full engagement of securing or lifting fittings, any deformation of the fitting beyond 5 mm (3/16 in) from its original plane, any aperture width greater than 66.0 mm (2-3/4 in), any aperture length greater than 127.0 mm (5-3/32 in), any reduction in thickness of the plate containing the top aperture that makes it less than 23.0 mm (7/8 in) thick or any weld separation of adjoining components in excess of 50 mm (2 in) in length.	Cracked, loose, broken; any deformation of the fitting beyond 5mm (3/16 in) from its original plane, any aperture width greater than 65mm (2-9/16 in), any aperture length greater than 125.5mm (4-15/16 in)
Understructure	Two or more adjacent cross members missing or detached from the bottom rails. 20% or more of the total number of cross members missing or detached. Note: If onward transportation is permitted, it is essential that detached cross members are precluded from falling free.	Any deformation such as bend, bow, dent, etc. ON A WEB if more than 50mm (2 in) in any direction. Any deformation such as bend, bow, dent, etc. ON A BOTTOM FLANGE if torn, cracked or cut
Locking rod assemblies	One or more inner locking rod assemblies are non-functional	Any deformation such as bend, bow, dent, etc. Door must be able to open fully (270°).

Only use IICL-5 after Container is on hold for IMO-138

Multi-Agency Strike Force Operation Planning

Introduction

This lesson is a guide with **mandatory** Multi-Agency Strike Force Operation (MASFO) procedures. It is designed to aid Sectors in standardizing MASFO coordination, planning and methods. This includes COTP Zones with several container ports (i.e. Seattle / Tacoma).

TPO

PLAN a Multi-Agency Strike Force Operation IAW CIM 16616.11C, and **DETERMINE** after action report procedures for CGSAILS IAW CI 3010.19B.

What is a MASFO?

A *Multi Agency Strike Force Operation* is a surge enforcement activity involving multiple agencies with varying jurisdictions, authorities and resources. Typically led by the agency having the predominate authority at the location, a MASFO does NOT have to involve all of the agencies listed in this lesson, as a small scale MASFO can have as few as two participants.

- Since the late 1950's, the decreased labor cost and shipping time associated with intermodal freight containers has allowed the business to expand significantly. In three decades the intermodal transportation industry has more than doubled in size. This increase has brought to the forefront the issues associated with hazardous material transportation enforcement. To enforce these regulations, an efficient enforcement and coordination network must be developed among federal, state and local law enforcement agencies. The most productive means of developing such a network is through MASFOs.
 - These operations gather data to be used for enforcement purposes, promote teamwork among the local, state and federal enforcement agencies, and help determine trends and patterns for targeting high risk shippers with a history of non-compliance. Additionally, they forge working relationships that could not be formed under normal daily operations.
-

MASFO Frequency

Depending on the yearly volume of container traffic (Boxes), COTP's shall lead *annually*:

- **1** (at least), if volume is > 500,000 Boxes; or
 - 1 (recommended not mandatory), for ports with less. COTP zones at multiple locations should consider conducting small scale MASFOs at multiple locations.
-

Multi-Agency Strike Force Operation Planning (Cont.)

MASFO Participants

Understanding the role of each agency and developing a clear understanding of how the Coast Guard fits in the puzzle is key to organizing a smooth operation. The jurisdiction of the agencies participating in a MASFO determines the geographical boundaries to which the operation extends. A large-scale MASFO can cover rail, water, highway, and even the aviation mode of transportation. Inland freight forwarders can also be subject to strike force personnel if the right agencies are involved.

Below is a list of agencies that have the authority and jurisdiction to serve as team players in these operations. They include but are not limited to:

- United States Coast Guard
- Federal Motor Carrier Safety Administration (FMCSA)
- Federal Railroad Administration (FRA)
- Federal Air Administration (FAA)
- Pipeline Hazardous Materials Safety Administration (PHMSA)
- United States Customs and Border Protection (CBP)
- Animal and Plant Health Inspection Service (APHIS)
- Internal Revenue Services (IRS)
- State/Highway Patrol
- Local fire Marshall or department
- City/Local Police Department
- Local Port Police
- State Department of Ecology
- State Occupational Safety Departments
- City Engineering Department

Multi-Agency Strike Force Operation Planning (Cont.)

MASFO Planning

When the objective of the operation is to cover all modes of transportation, it will be inherently large, involving several agencies, and require considerable coordination and planning. Smaller joint operations may involve only two agencies and few personnel but their small size makes them highly mobile and flexible. IAW Chapter 6 to COMDINST 16616.11C, a MASFO (regardless of size) will require two basic elements for smooth execution and interagency cooperation: Incident Action Plan (IAP), followed up with a hot-wash. It is also highly recommended a planning meeting be held to establish which agencies will be invited/notified, who the team leaders will be, etc.

The IAP should follow the National Incident Management System (NIMS) Incident Command System (ICS) format for a planned event and should be tailored to the size and type of MASFO. An IAP consists of the following ICS forms:

- IAP Cover Sheet,
- ICS-202 CG (Response Objectives),
- ICS-203 CG or ICS-207 CG (Organizational Chart)
- ICS-204 CG (Assignment Lists)
- ICS-205 CG (Communications Plan)
- ICS-206 CG (Medical Plan)
- ICS-208 CG (Site Safety Plan or note SSP location)
- Map or Chart of target location(s) and resources
- Weather forecasts / Tides / Currents
- Other Attachments

Upon command approval, an ICS-201CG (Incident Brief) may be used in conjunction with an ICS-204 CG, ICS-205 CG, ICS-206 CG and a Site Safety Plan. (See example of ICS-201 CG & ICS-204 CG).

Multi-Agency Strike Force Operation Planning (Cont.)

MASFO Planning Meeting

A planning meeting is needed to help coordinate efforts. The meeting should address several task force issues, the following are major subjects.

- Objectives: Goals/results of the operation. Emphasis should be on prevention or enforcement of the FHMTL and ISCA. Other objectives may be to:
 - a) Develop working relationship with other federal, state, and local agencies.
 - b) Improve enforcement/coordination efforts between agencies.
 - c) Educate industry on hazmat regulations.
 - d) Identify trends and, or problem shippers/forwarders.
 - Team Composition: Assignment of personnel, and team leaders.

Note: a team should consist of personnel from two or more agencies to promote interagency interaction.
 - Data Collection: Recording container information and deficiencies to capture effort and statistics.

Note: each agency will use their standard discrepancy collection form but an additional (simple) data specific form is recommended to also be filled out to help extract data. The team leader or Coast Guard observer should ensure that the forms reach the ICP at the end of each day.
 - Location of Enforcement Venue(s): Identify/discuss waterfront and, or highway and rail enforcement.
 - Communications: Develop primary and backup communications plan, i.e. providing teams with radios, cell phones and numbers.
 - Timeline: Develop a timeline so invited agencies may prepare for and plan for the MASFO. The timeline should set the dates for accomplishment of certain planning objectives. It should also discuss the schedule of operations, address the need for daily coordination meetings and set a date for a summary or hot wash meeting.
 - Contingencies: Unexpected emergencies such as hazmat spills, medical emergencies, and arrest should be discussed during the planning meeting.
 - Safety: (Most important) the use of unit SOP and PPE (i.e. hard hat, safety strap, etc) should be discussed. All participants are responsible for the safe behavior of their personnel.
-

Multi-Agency Strike Force Operation Planning (Cont.)

Team Leaders When MASFO teams are comprised of personnel from several different agencies, the individual from the agency with primary jurisdiction should serve as the team leader.

**CG Sails
Pre-MASFO** Prior to the MASFO your unit should send out MASFO invitations and hold a pre-MASFO planning meeting with all of the involved agencies.

**MASFO
Hot Wash** In order to conduct a thorough hot wash and get quality responses from all involved parties it is recommended that the hot wash is held immediately following the end of the MASFO. Generally speaking, it is easier to get feedback face-to-face immediately following the operation period versus via e-mail two to three days after the fact.

**After
Action
Report** CG SAILS AARs should be completed and forwarded to Coast Guard Headquarters within 60 days of the MASFO's completion. Once submitted, reports are considered endorsed by the command and can no longer be changed.

Following each MASFO, a hot wash should be conducted to identify areas for improvement by listing lessons learned, recommendations and best practices in CG Standard After Action Information and Lessons Learned System (CG Sails). CG Sails is a web based system that the Coast Guard has developed to ensure information and experiences gained from real world operations and exercises are captured that is readily accessible across all levels of the organization. More information on CG Sails can be found in COMDTINST 3010.19B. CG Sails is part of the Coast Guard's Contingency Preparedness System (CPS) and can be accessed at <http://cps.uscg.mil/cps/default.htm>. After Action Reports (AARs) completed in CG Sails will be periodically reviewed by CITAT.

Multi-Agency Strike Force Operation Planning (Cont.)

Planning Worksheet

CG Unit _____

Container billets _____

Boxes per year _____

Qualified Container Inspectors _____

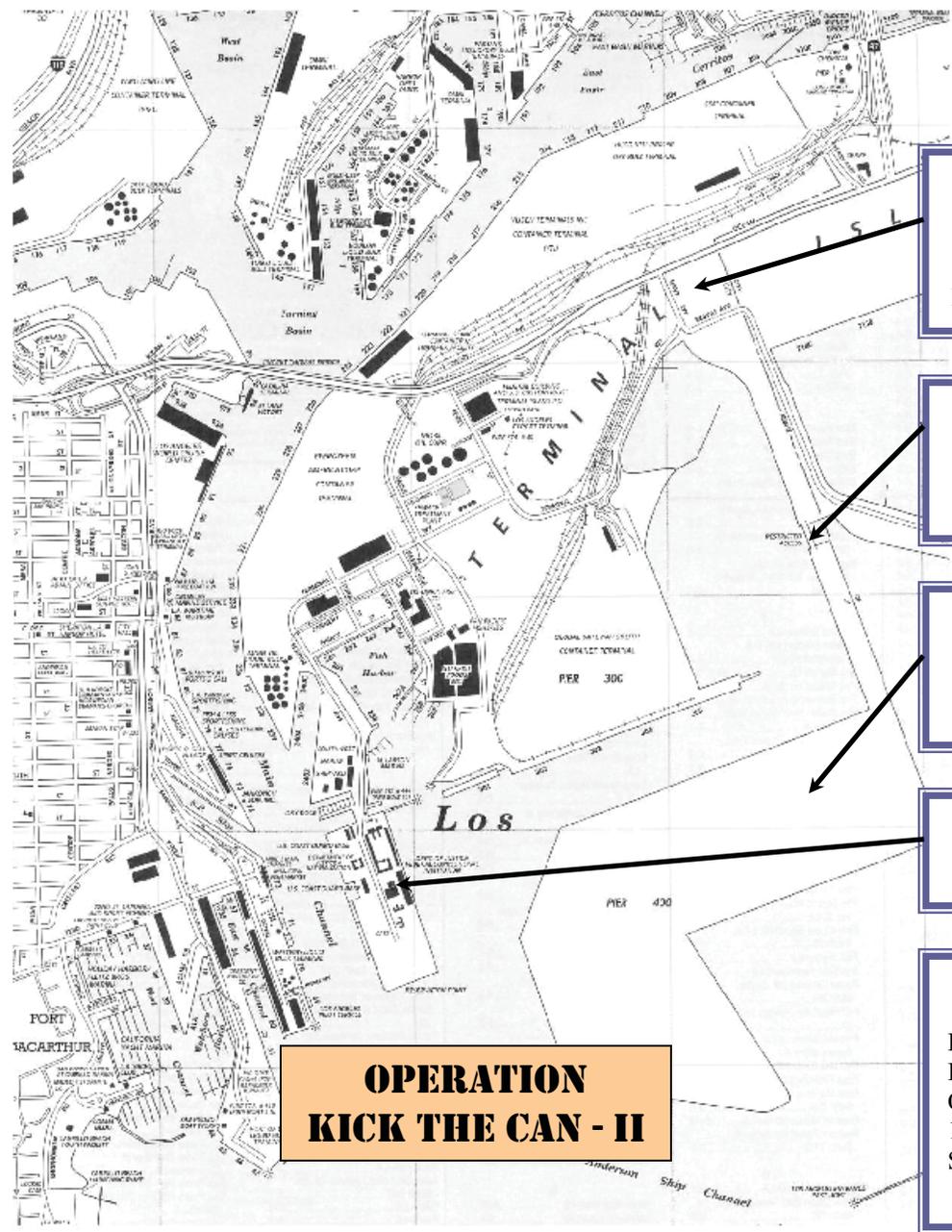
	Phone	Name	Location
FMSCA	_____	_____	_____
FRA	_____	_____	_____
PHMSA	_____	_____	_____
CBP	_____	_____	_____
APHIS	_____	_____	_____
State Police	_____	_____	_____
County Police	_____	_____	_____
Local Police	_____	_____	_____
Local Fire & HazMat	_____	_____	_____
Ports Authority	_____	_____	_____
State Transportation	_____	_____	_____
City Engineering & Planning	_____	_____	_____
DEA	_____	_____	_____
FBI	_____	_____	_____
IRS	_____	_____	_____
Anybody else?	_____	_____	_____

1. Incident Name
MASFO - Kick The Can II

2. Prepared by: MST1 J. Sherrill
Date: 5 Jan 2014 Time: 7 Jan 2014

INCIDENT BRIEFING
ICS 201-CG

3. Map/Sketch



4. Current Situation:

The purpose of this exercise is to provide a valuable opportunity for all of the involved agencies having shared jurisdictional interest in the safe and secure transportation of containerized cargo to collaboratively exercise inspection capabilities across all modes of transportation. Additionally, this MASFO provides an ideal environment for cross-agency training and the sharing of operational awareness from the partner agency's perspective. Through this collaborative operation the port communities awareness of each agency's regulatory presence will be elevated. The overall purpose of this MASFO is to reinforce the critical importance for safe and secure transportation of containerized cargo.

(Cont.) **6. Current Organization** (fill in additional appropriate organization)

UC: CAPT Dale Doback (USCG)

Ricky Bobby (FMCSA)

Jean Girard (FRA)

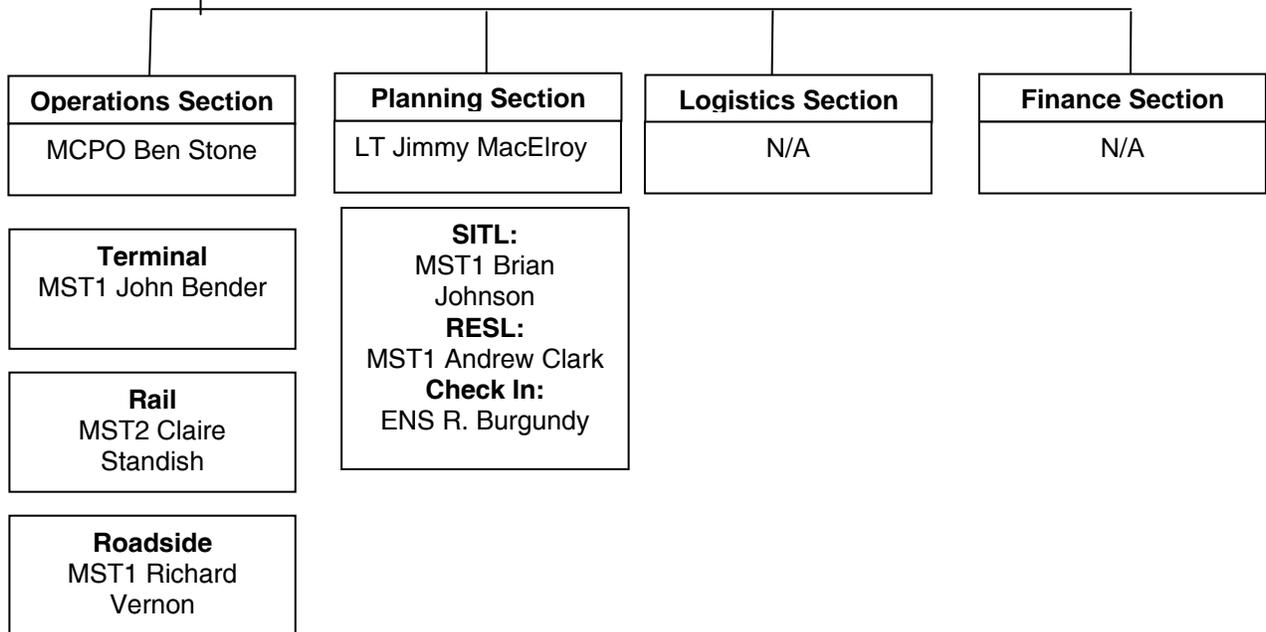
Brennan Huff (PHMSA)

Cal Naughten Jr. (CBP)

Safety Officer LT B. Tamland

Liaison Officer LTJG V. Corningstone

Public Information Officer PA2 P. O'Houlihan



1. Incident Name MASFO - Kick The Can II		2. Operational Period (Date/Time) From: 5 Jan 2014 To: 7 Jan 2014		Assignment List ICS 204-CG	
3. Branch Roadside		4. Division/Group/Staging Team 1			
5. Operations Personnel					
Name		Affiliation		Contact # (s)	
Operations Section Chief: MSTCM Ben Stone		USCG		(206) 555-1001	
Branch Director: _____					
Division/Group Supervisor/STAM: MST2 Richard Vernon		USCG		(206) 555-1006	
6. Resources Assigned "X" indicates 204a attachment with additional instructions					
Strike Team/Task Force/Resource Identifier	Leader	Contact Info. #	# Of Persons	Reporting Info/Notes/Remarks	
USCG	See Work Assignments	See Work Assignments	03	ICP @ 0630	<input type="checkbox"/>
CBP				ICP @ 0630	<input type="checkbox"/>
National Cargo Bureau				ICP @ 0630	<input type="checkbox"/>
U.S. DOT (PHMSA)				ICP @ 0630	<input type="checkbox"/>
FMCSA				ICP @ 0630	<input type="checkbox"/>
Washington State Patrol				ICP @ 0630	<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
7. Work Assignments					
Monday, 5 Jan Location: Alaska Way South CG Rep: MST2 Lea		Tuesday, 6 Jan Location: Harbor Island Drive CG Rep: MST2 Hardy		Wednesday, 7 Jan Location: Alaska Way South CG Rep: PS1 Lopez	
8. Special Instructions					
At Approx 1045 & 1345 the Coast Guard rep shall notify the SITL of: 1. Team's location 2. Number of containers inspected 3. Deficiencies / Holds 4. Other agencies enforcement actions 5. General observations / recommendations In addition, SITL shall be notified IMMEDIATELY for the following: Change of location, major violations, injured personnel, equipment casualty that affects PPE or the ability to perform inspections At 1600 each day the Coast Guard rep shall report to the SITL to validate all info and the team shall begin their debrief. Team must report to the RESL to check team out.					
9. Communications (radio and/or phone contact numbers needed for this assignment)					
Name/Function	Radio: Freq./System/Channel	Phone	Cell/Pager	_____	
SITL	_____	_____	(206) 555-1003	_____	
RESL	_____	_____	(206) 555-1004	_____	
Emergency Communications					
Medical	_____	Evacuation	_____	Other	_____
10. Prepared by: LTJG M. Kauffman	Date/Time 2 Jan 2014	11. Reviewed by (PSC):	Date/Time	12. Reviewed by (OSC):	Date/Time

1. Incident Name MASFO - Kick The Can II		2. Operational Period (Date/Time) From: 5 Jan 2014 To: 7 Jan 2014		Assignment List ICS 204-CG	
3. Branch Rail		4. Division/Group/Staging Team 1			
5. Operations Personnel					
Name		Affiliation		Contact # (s)	
Operations Section Chief: MSTCM Ben Stone		USCG		(206) 555-1001	
Branch Director: _____					
Division/Group Supervisor/STAM: MST2 Claire Standish		USCG		(206) 555-1005	
6. Resources Assigned "X" indicates 204a attachment with additional instructions					
Strike Team/Task Force/Resource Identifier	Leader	Contact Info. #	# Of Persons	Reporting Info/Notes/Remarks	
USCG	See Work Assignments	See Work Assignments	03	ICP @ 0630	<input type="checkbox"/>
Federal Railroad Administration				ICP @ 0630	<input type="checkbox"/>
National Cargo Bureau				ICP @ 0630	<input type="checkbox"/>
U.S. DOT (PHMSA)				ICP @ 0630	<input type="checkbox"/>
FMCSA				ICP @ 0630	<input type="checkbox"/>
Washington State Patrol				ICP @ 0630	<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
7. Work Assignments					
Monday, 5 Jan		Tuesday, 6 Jan		Wednesday, 7 Jan	
Location: Rail Alpha		Location: Rail Bravo		Location: Rail Charlie	
CG Rep: MST1 Mosley		CG Rep: MST1 Widman		CG Rep: MST2 Anderson	
8. Special Instructions					
At Approx 1030 & 1330 the Coast Guard rep shall notify the SITL of:					
1. Team's location 2. Number of containers inspected 3. Deficiencies / Holds 4. Other agencies enforcement actions 5. General observations / recommendations					
In addition, SITL shall be notified IMMEDIATELY for the following:					
Change of location, major violations, injured personnel, equipment casualty that affects PPE or the ability to perform inspections					
At 1545 each day the Coast Guard rep shall report to the SITL to validate all info and the team shall begin their debrief. Team must report to the RESL to check team out.					
9. Communications (radio and/or phone contact numbers needed for this assignment)					
Name/Function	Radio: Freq./System/Channel	Phone	Cell/Pager	_____	
SITL	_____	_____	(206) 555-1003	_____	
RESL	_____	_____	(206) 555-1004	_____	
Emergency Communications					
Medical	_____	Evacuation	_____	Other	_____
10. Prepared by: LTJG M. Kauffman		Date/Time 2 Jan 2014	11. Reviewed by (PSC): _____		Date/Time _____
			12. Reviewed by (OSC): _____		Date/Time _____

1. Incident Name MASFO - Kick The Can II		2. Operational Period (Date/Time) From: 5 Jan 2014 To: 7 Jan 2014		Assignment List ICS 204-CG	
3. Branch Terminal		4. Division/Group/Staging Team 1			
5. Operations Personnel					
Name		Affiliation		Contact # (s)	
Operations Section Chief: <u>MSTCM Ben Stone</u>		USCG		(206) 555-1001	
Branch Director: _____					
Division/Group Supervisor/STAM: <u>MST1 John Bender</u>		USCG		(206) 555-1002	
6. Resources Assigned "X" indicates 204a attachment with additional instructions					
Strike Team/Task Force/Resource Identifier	Leader	Contact Info. #	# Of Persons	Reporting Info/Notes/Remarks	
USCG	See Work Assignments	See Work Assignments	03	ICP @ 0630	<input type="checkbox"/>
CBP				ICP @ 0630	<input type="checkbox"/>
National Cargo Bureau				ICP @ 0630	<input type="checkbox"/>
U.S. DOT (PHMSA)				ICP @ 0630	<input type="checkbox"/>
FMCSA				ICP @ 0630	<input type="checkbox"/>
Washington State Patrol				ICP @ 0630	<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
7. Work Assignments					
Monday, 5 Jan Location: Terminal Alpha CG Rep: DC2 Griffin		Tuesday, 6 Jan Location: Terminal Bravo CG Rep: BM1 Melendez		Wednesday, 7 Jan Location: Terminal Charlie CG Rep: MST1 Cole	
8. Special Instructions					
At Approx 1015 & 1315 the Coast Guard rep shall notify the SITL of: 1. Team's location 2. Number of containers inspected 3. Deficiencies / Holds 4. Other agencies enforcement actions 5. General observations / recommendations In addition, SITL shall be notified IMMEDIATELY for the following: Change of location, major violations, injured personnel, equipment casualty that affects PPE or the ability to perform inspections At 1530 each day the Coast Guard rep shall report to the SITL to validate all info and the team shall begin their debrief. Team must report to the RESL to check team out.					
9. Communications (radio and/or phone contact numbers needed for this assignment)					
Name/Function	Radio: Freq./System/Channel	Phone	Cell/Pager	_____	
SITL	_____	_____	(206) 555-1003	_____	
RESL	_____	_____	(206) 555-1004	_____	
Emergency Communications					
Medical	_____	Evacuation	_____	Other	_____
10. Prepared by: LTJG M. Kauffman	Date/Time 2 Jan 2014	11. Reviewed by (PSC):	Date/Time	12. Reviewed by (OSC):	Date/Time

ASSIGNMENT LIST (ICS 204-CG)

Purpose. The Assignment List(s) informs Division and Group supervisors of incident assignments. Once the Unified Command and General Staff agree to the assignments, the assignment information is given to the appropriate Divisions and Groups.

Preparation. The Assignment List is normally prepared by the Resources Unit, using guidance from the Incident Objectives (ICS 202-CG), Operational Planning Worksheet (ICS 215-CG), and the Operations Section Chief. The Assignment List must be approved by the Planning Section Chief and Operations Section Chief. When approved, it is included as part of the Incident Action Plan (IAP). Specific instructions for specific resources may be entered on an ICS 204a-CG for dissemination to the field. A separate sheet is used for each Division or Group. The identification letter of the Division is entered in the form title. Also enter the number (roman numeral) assigned to the Branch.

Special Note. The Assignment List, ICS 204-CG submits assignments at the level of Divisions and Groups. The Assignment List Attachment, ICS 204a-CG shows more specific assignment information, if needed. The need for an ICS 204a-CG is determined by the Planning and Operations Section Chiefs during the Operational Planning Worksheet (ICS 215-CG) development.

Distribution. The Assignment List is duplicated and attached to the Incident Objectives and given to all recipients of the Incident Action Plan. In some cases, assignments may be communicated via radio/telephone/fax. All completed original forms MUST be given to the Documentation Unit.

<u>Item #</u>	<u>Item Title</u>	<u>Instructions</u>
1.	Incident Name	Enter the name assigned to the incident.
2.	Operational Period	Enter the time interval for which the form applies.
3.	Branch	Enter the Branch designator.
4.	Division/Group/Staging	Enter the Division/Group/Staging designator.
5.	Operations Personnel	Enter the name of the Operations Chief, applicable Branch Director, and Division Supervisor.
6.	Resources Assigned	Each line in this field may have a separate Assignment List Attachment (ICS 204a-CG). Enter the following information about the resources assigned to Division or Group for this period:
	Identifier	List identifier
	Leader	Leader name
	Contact Information	Primary means of contacting this person (e.g., radio, phone, pager, etc.). Be sure to include area code when listing a phone number.
	# Of Persons	Total number of personnel for the strike team, task force, or single resource assigned.
	Reporting Info/Notes/Remarks	Special notes or directions, specific to this strike team, task force, or single resource. Enter an "X" check if an Assignment List Attachment (ICS 204a-CG) will be prepared and attached. The Planning and Operations Section Chiefs determine the need for an ICS 204a-CG during the Operational Planning Worksheet (ICS 215-CG) development.
7.	Work Assignment	Provide a statement of the tactical objectives to be achieved within the operational period by personnel assigned to this Division or Group.
8.	Special Instructions	Enter a statement noting any safety problems, specific precautions to be exercised, or other important information.
9.	Communications	Enter specific communications information (including emergency numbers) for this division /group. If radios are being used, enter function (command, tactical, support, etc.), frequency, system, and channel from the Incident Radio Communications Plan (ICS 205-CG). Note: Phone numbers should include area code.
10.	Prepared By	Enter the name of the person completing the form, normally the Resources Unit Leader.
	Date/Time	Enter date (month, day, year) and time prepared (24-hour clock).
11.	Reviewed by (PSC)	Enter date (month, day, year) and time prepared (24-hour clock).
12.	Reviewed by (OSC)	Enter the name of the operations person reviewing the form, normally the Operations Section Chief.
	Date/Time	Enter date (month, day, year) and time prepared (24-hour clock).

Use of International Transport Standards in the US

Introduction

This lesson will cover authorization, requirements, and limitations for using international transport standards, specifically the IMDG Code, and regulations in the U.S.

TPO

DETERMINE the limitations and conditions for the use of international standards in the U.S. I.A.W. the provisions outlined in 49 CFR Part 171.

Canadian Shipments §171.12(a)

49 CFR 171.12(a) states that Canadian Shipments by rail and motor carrier may be shipped in accordance with Transport Canadian TDG Regulations with a few exceptions such as cylinders must meet DOT specification and potable tanks meet part 173, 177 & 180 and Lithium batteries.

Limitations on the use of International Standards §171.22(a – g)

49 CFR 171.22(a)-(g) outlines, with certain conditions and limitations, the requirements that must be met before utilizing the International Standards.

- Hazardous materials offered for transportation or transported I.A.W. international standards are subject to those requirements and **must** be offered in conformance with the applicable provisions.
 - Materials excepted from international standards, but regulated by 49 CFR **must** conform to 49 CFR regulations.
 - Materials not regulated by 49 CFR, but regulated by the IMDG Code **may** conform to IMDG Code provisions.
 - The forwarding agent in the US **must** be provided with information as to requirements of Subchapter C (49 CFR).
 - The shipper **must** provide the initial US carrier with the shipper's certification and shipping paper information in English. English and one other language are allowed on the documentation. The information **must** be accessible at or through its principle place of business.
 - All shipments of hazardous materials **must** conform to the emergency response information as prescribed in §172.600.
 - For export shipments, the general packaging requirements in §§173.24, 173.24(a), and 173.28.
-

Use of International Transport Standards in the US (Cont.)

Requirements for Specific Materials and Packagings §171.23(a – b)

All shipments offered for transportation or transported in the US under International standards must conform to the requirements in 171.23(a-b):

- *Cylinders*, other than DOT or UN standard in accordance with part 178 of this subchapter may not be transported to, from or within the United States;
 - *Aerosols*, except for a limited quantity of compressed gas in a container of not more than 4 fluid ounces capacity meeting the requirements in 173.306(a)(1), the proper shipping name “Aerosol,UN1950, may be used.
 - *Air bag inflator, air bag module or seatbelt pretensioner*, the shipping paper description must conform to the requirements in § 173.166(c) of this subchapter. The EX number or product code must be included in association with the basic shipping description.
 - *Chemical oxygen generators*, must be approved, classed, described, packaged and transported in accordance with the requirements of this subchapter.
 - *Explosives*, prior to being transported, Class 1 materials must be approved by the Associated Administrator. Each package containing a class 1 materials must conform to §172.320.
 - *Hazardous Substances*, a material meeting the definition of a hazardous substance as defined in §171.8, must conform to §§ 172.203(c) and 172.324.
 - *Hazardous Waste*, as defined in 49 CFR, the word “WASTE” must precede the name on the shipping papers and packages, and conform to §172.205.
 - *Organic Peroxides* not identified by technical name in the Organic Peroxide Table in § 173.225(b) must be approved by the Associated Administer in accordance with §173.128(d) of this subchapter.
 - *Poisonous materials*, division 6.1 hazardous materials transported as limited quantities are not excepted from the labeling (see §173.153(b).
 - *Poisonous by Inhalation materials*, meeting the definition in § 171.8 must conform to §§§ 172.203(m), 172.313, and 172.313(c).
 - *Class 7 Radioactive Materials*, must conform to §171.23(b)(11)
 - *Self-reactive materials* not identified in §173.224(b) by technical name must be approved by the Associated Administer.
-

Use of International Standards in the US (Cont.)

Requirements for the use of the IMDG Code §171.25(a – d)

The following outline additional requirements for the use of the IMDG Code, as prescribed under §171.25.

- *Hazardous materials* **may** be transported to, from or within the US by vessel, and by motor carrier and rail *in accordance with* the IMDG Code, as authorized in §171.22, *provided all or part of the movement is by water*.
 - *Stowage and segregation* requirement in part 7 of the IMDG Code may be substituted for the stowage and segregation requirements in 176 of the 49.
 - *Lithium Batteries* or cells transported in accordance with special provision 188 of the IMDG Code and not weighing more than 5kg (11 pounds) per package, must be marked “PRIMARY LITHIUM BATTERIES-FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT” or “LITHIUM METAL BATTERIES-FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT”.
 - *Bulk packagings*, must conform to requirements of this subchapter.
 - UN portable tanks must conform to the requirements in Special Provisions TP37, TP38, TP44 and TP45 when applicable and any applicable bulk special provisions assigned to the hazardous materials table.
 - IMO Type 5 portable tanks must conform to DOT specifications 51 or UN portable tank requirements, unless specifically authorized.
 - Except as specified, for a material poisonous by inhalation, T codes specified in Column 13 of the Dangerous Goods List may be applied to the transportation of those materials in IM, IMO and DOT Spec 51 portable tanks, when those portable tanks are authorized.
 - *Use of the IMDG Code in port areas*,
 - Except for Division 1.1, 1.2, and Class 7 materials, a hazardous material shipment may be transported by motor vehicle in a single port area, including contiguous harbors (i.e. Seattle & Tacoma) when packaged, marked, classed, labeled, stowed and segregated in accordance with the IMDG Code, and conforms to shipping paper, placarding and applicable 176 requirements in the 49.
 - An emergency telephone number, as required in 172.201(d), does not apply to hazardous material shipments made in accordance with the IMDG Code if the hazardous material does not leave the port area (i.e. transferred between vessels).
-

This page has intentionally been left blank

Classification of Materials

Introduction

This lesson will cover classification of dangerous goods and packing group assignments identified in the IMDG Code and 49 CFR. Substances (including mixtures and solutions) and articles subject to the provisions of the IMDG Code/49 CFR are assigned to one of nine classes or ORM-D according to the hazard(s) they present. Some of these classes are subdivided into divisions.

TPO

DETERMINE the classes, divisions, and packing groups of dangerous goods/hazardous materials I.A.W. information outlined in Chapter 2 of the IMDG Code and 49 CFR Part 173.

Class and Division Number Index

Class Number	Division Number (if any)	Name of Class or Division	IMDG Code & 49 CFR Reference for Definitions
None		Forbidden dangerous goods and materials	1.1.4 & 173.21
None		Forbidden explosives (49 CFR)	173.54
1	1.1	Explosives (with a mass explosion hazard)	2.1 & 173.50
1	1.2	Explosives (with a projection hazard)	2.1 & 173.50
1	1.3	Explosives (with predominately a fire hazard)	2.1 & 173.50
1	1.4	Explosives (with no significant hazard)	2.1 & 173.50
1	1.5	Very insensitive explosives; blasting agents	2.1 & 173.50
1	1.6	Extremely insensitive articles	2.1 & 173.50
2	2.1	Flammable gas	2.2 & 173.115
2	2.2	Non-flammable gas	2.2 & 173.115
2	2.3	Toxic gas	2.2 & 173.115
3		Flammable liquid and	2.3 & 173.120
3		Combustible liquids (49 CFR only)	173.120(b)
4	4.1	Flammable solid, self-reactive substance and desensitized explosive	2.4 & 173.124
4	4.2	Substances liable to spontaneous combustion	2.4 & 173.124
4	4.3	Substances which, in contact with water emit flammable gas	2.4 & 173.124
5	5.1	Oxidizing substances	2.5 & 173.127
5	5.2	Organic peroxides	2.5 & 173.128
6	6.1	Toxic substances	2.6 & 173.132
6	6.2	Infectious substances	2.6 & 173.132
7		Radioactive material	2.7 & 173.403
8		Corrosive substances	2.8 & 173.136
9		Miscellaneous dangerous substances and articles	2.9 & 173.140
None		Other Regulated Materials: ORM-D (49 CFR only)	173.144

Classification of Materials (Cont.)

Dangerous Goods
§1.1.2.1

Dangerous goods mean the substances, materials and articles covered by the IMDG Code.

Note: IMDG uses “substance(s)” as 49 CFR uses “material(s)”.

Hazardous Material
§171.8

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, and is designated as hazardous under Section 5103 of FHMTL (4 U.S.C. 5103).

Packing Group
§2.0.1.3

Packing group (PG) means a grouping, of substances other than those of classes 1, 2, 5.2, 6.2 and 7, and other than self-reactive substances of class 4.1, in accordance with the degree of danger they present:

- Packing group I: substances presenting high danger;
 - Packing group II: substances presenting medium danger; and
 - Packing group III: substances presenting low danger
-

Primary Hazard

A primary hazard is determined through criteria outlined in IMDG 2.0.3. 49 CFR defines primary hazard as the hazard class of a material assigned in the §172.101 Table or as classified in §173.2a.

Subsidiary Hazard

A subsidiary hazard is the hazard(s) of a material other than the primary hazard.

Classification of Materials (Cont.)

Definition of Explosive Substance
§2.1.1.3

An explosive substance means a solid or liquid substance (or a mixture of substances) which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings. Pyrotechnic substances are included.

Divisions
§2.1.1.4
§173.50

Explosives are classified alike between IMDG and 49 CFR, and are broken down into the following SIX divisions:

- **Division 1.1:** Substances and articles which have a mass explosion hazard
- **Division 1.2:** Substances and articles which have a projection hazard but not a mass explosion
- **Division 1.3:** Substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard
- **Division 1.4:** Substances and articles which present no significant hazard. Effects are largely confined to the package.
- **Division 1.5:** Very insensitive substances which have a mass explosion hazard.
- **Division 1.6:** Extremely insensitive articles which do not have a mass explosion hazard.

PG Assignment

I.A.W. packaging provisions set forth in IMDG 4.1.1.17 and 49CFR 173.60, all explosives are assigned to PG II.

Classification of Materials (Cont.)

Class 2 §2.2	Gases are classified alike between IMDG and 49 CFR, and are subdivided into THREE divisions according to the primary hazard of the gas during transport. The word “Toxic” has the same meaning as “poisonous.”
Divisions	<ul style="list-style-type: none">• 2.1: Flammable gases are, at ambient temperature (20°C) and normal atmospheric pressure (101.3 kPa), ignitable when in a mixture of 13% or less by volume; or has a flammable range of at least 12%.• 2.2: Non-flammable, non-toxic gases are asphyxiant (displace oxygen), oxidizing (contribute to combustion), and do not fall under class 2.1 and 2.3, or are <u>compressed</u>.• 2.3: Toxic Gases are known to be so toxic or corrosive to humans as to pose a hazard to health. <p><i>Note:</i> 2.3s are recognized by 49 CFR as “Gas Poisonous by Inhalation”.</p>
Packaging Provision	Class 2 materials are packaged to design (“ specification packaging ”) standards, and therefore not assigned a packing group.
<hr/>	
Class 3 §2.3	The IMDG Code and 49 CFR classify Class 3 materials into only one class with no divisions. However additionally <i>defined</i> , 49 CFR also recognizes combustible liquids and lists them in the §172.101 Table.
	<p><i>Note:</i> Combustible liquids are ONLY applicable and regulated domestically.</p>
Flammable Liquid	<i>Flammable Liquids</i> are liquids, mixtures of liquids, or liquids containing solids in solution which give off a flammable vapor “flashpoint” ≤ 60°C (140°F).
Combustible Liquid §173.120(b)	<i>Combustible Liquid</i> means a liquid that does not meet the definition of any other hazard class in Subchapter C, except Class 9, and has a flash point above 60°C (140°F) and below 93°C (200°F).
PG Assignment	Class 3 PGs are determined by their flashpoint , their boiling point , and their viscosity.

Classification of Materials (Cont.)

Class 4 §2.4

Class 4 materials are substances, other than those classified as explosives, which are readily combustible or may cause or contribute to a fire. Class 4 is subdivided into *three* divisions with associated packing group provisions.

Divisions and PG Assignment

- **4.1 Flammable Solids:** solids, readily combustible through friction, self-reactive substances liable to undergo a strongly exothermal reaction, and solid desensitized explosives which may explode if not diluted sufficiently.
 - PGs are assigned according to burning times. Self-reactive substances of class 4.1 are assigned **PG II**, IAW 4.1.1.17 and §173.224.
 - **4.2 Substances liable to spontaneous combustion:** substances liable to spontaneous heating, or to heating up, fire prone, in contact with air.
 - PGs are assigned according to heating properties.
 - **4.3 Substances which, in contact with water, emit flammable gases:** substances vis-à-vis, give off flammable gases in dangerous quantities or become spontaneously flammable
 - PGs are assigned according to the amount of flammable gas that is produced.
-

Class 5 §2.5

Class 5 materials are classified alike between IMDG Code and 49 CFR, and are divided into TWO divisions. PGs are determined within each division.

Divisions and PG Assignment

- **Class 5.1 Oxidizing substances:** substances, while themselves not necessarily combustible, may yield oxygen, or cause/contribute to the combustion of other materials.
 - PGs are assigned according to burning times and self-ignition properties.
 - **Class 5.2 Organic Peroxides:** organic substances which contain the bivalent -O-O- structure. They are thermally unstable and may undergo exothermic self-accelerating decomposition. They may have one or more of the following properties:
 - liable to decompose explosively
 - burn rapidly
 - sensitive to impact or friction
 - react dangerously with other substances
 - cause damage to the eyes
 - All 5.2 materials are assigned **PG II**, IAW 4.1.1.17 and §173.225.
-

Classification of Materials (Cont.)

Class 6
§2.6 Class 6 materials are treated virtually the same under IMDG Code and 49 CFR, and are subdivided into TWO divisions. PGs are determined within each division. “Toxic means “Poisonous”.

Divisions and PG Assignment

- **6.1 Toxic substance:** substances, other than gas, liable either to cause death or serious injury or to harm human health.
 - PGs are assigned according to LC₅₀ or LD₅₀ values.
 - **6.2 Infectious substance:** substances known or reasonably expected to contain pathogens. Pathogens are microorganisms (i.e. bacteria, viruses, rickettsiae, parasites, fungi) which can cause disease in humans or animals.
 - PGs for 6.2 materials other than regulated medical waste are not assigned. Regulated medical waste is assigned to PG II.
-

Class 7

§2.7

Radioactive Material means any materials which:

- Contains radionuclides
- Activity concentration and the total activity in the consignment exceed specified values set forth in 2.7.2.2.1.
- The specific activity is > 0.002 micro curies per gram of material.

Measurement of Radiation

Radiation levels are measured at the surface of the package and at one meter to determine the category of label applied. The following labels indicate the level of radiation emitted by the material:

- Radioactive White I: Equal to or less than 0.5 millirem per hour (mrem/h).
- Radioactive Yellow II: Greater than 0.5 mrem/h or equal to or less than 50 mrem/h.
- Radioactive Yellow III: Greater than 50 mrem/h.

Packaging Provision

Class 7 materials are packaged to design “**specification packaging**” (like class 2—gases) and therefore NOT assigned a PG.

Class 8

§2.8

Corrosive substances means substances which, by chemical action, will cause severe damage to living tissue or in the case of leakage will materially damage or destroy other goods or the means of transport.

PG Assignment

PGs are determined by the destructive power of the corrosive.

Classification of Materials (Cont.)

Class 9
§2.9 **Miscellaneous dangerous substances and articles** are substances and articles which, during transport, present a danger not covered by other classes.

PG Assignment PGs are indicated in Col. 5 of the Dangerous Goods List and §172.101 Table.

– *Note:* A majority of Class 9 materials are assigned PG III.

ORM-D Other Regulated Materials-Domestic are NOT recognized by the IMDG Code. These materials apply to domestic transport ONLY and are authorized domestically by highway, rail, and vessel until December 31, 2020.

Note: Internationally materials that fall under this definition would be shipped as “Limited Quantities”.

Definition
§173.144 ORM-D material means a material such as consumer commodities, which although subject to the regulations of this subchapter, presents a limited hazard during transportation due to its form, quantity, and packaging. It must be a material for which exceptions are provided in the §172.101 Table.

PG Assignment
§173.145 PGs are not assigned to ORM-D materials

IMDG Code DGL & 49 CFR HMT

Introduction

Researching which materials are regulated and which regulations apply is the first step in conducting hazardous material inspections in the field. This lesson covers the IMDG Code Dangerous Goods List (DGL) & 49 CFR Hazardous Materials Table (HMT), and how each applies.

TPO

LOCATE specific information on dangerous goods/hazardous materials using the Dangerous Goods List and Hazardous Materials Table.

DGL Foreword

The **Dangerous Goods List (DGL)** of the IMDG Code is the main reference used for International regulations regarding hazardous material shipments by vessel throughout the world. It lists, classifies and describes the regulations for “dangerous goods” when offered for transportation by vessel.

IMDG/DGL References

The following are useful references contained in the IMDG Code:

- *Definitions* – §1.2
 - *Units of measurement* – §1.2.2
 - *Conversion tables* (mass, liquid, temperature) – §1.2.2.6
 - *Segregation Groups* – §3.1.4 contains a list of dangerous goods which have been grouped together in segregation groups. When column 16 of the DGL states that a product must be segregated from a group of substances, 3.1.4.1 should be referenced to determine what chemicals belong to each particular group.
 - *Structure of the DGL* – §3.2.1 contains the structure of the DGL and explains each individual column.
 - *Abbreviations & symbols* – §3.2.2
 - *Index* – The DGL lists dangerous goods by UN ID number; the index lists dangerous goods alphabetically by Proper Shipping Name (PSN)
-

IMDG Code DGL & 49 CFR HMT (Cont.)

DGL and Structure

Part 3 of the IMDG Code contains the Dangerous Goods List or DGL which includes 18 columns. A description of each column and their content can be found in the **Structure** of the DGL located immediately before the DGL.

Column 1

Column 1 lists the substances sequentially by their four digit United Nations (UN) *Identification number*.

Column 2

Column 2 contains the *Proper Shipping Name* (PSN) for each dangerous good in UPPER-CASE characters, and may be followed by additional descriptive text in lower-case characters.

Note: Plural and singular are interchangeable

Column 3

Column 3 contains the *hazard class* of the dangerous good; or division and compatibility group for Class 1 materials.

Column 4

Column 4 lists any *subsidiary hazard* associated with a commodity. It also identifies a dangerous good as a marine pollutant by including a **P**.

Column 5

Column 5 list *packing group(s)* assigned to dangerous goods to determine what type of packaging is to be used.

- I – great danger
 - II – medium
 - III – minor
-

Column 6

Column 6 list any *special provisions* associated with a given substance. The meaning of the number codes listed here can be found in §3.3.

Column 7a

Column 7a lists the maximum amount of product per inner packaging to qualify as *limited quantities* IAW §3.4

IMDG Code DGL & 49 CFR HMT (Cont.)

Column 7b	Column 7b contains alpha-numeric codes, described in § 3.5, which indicate <i>excepted quantities</i> .
Column 8	<p>Column 8 provides relevant <i>Packing Instructions</i> which can be found in §4.1.4.</p> <ul style="list-style-type: none">• P – packaging max capacity 400kg/450l• LP – Large packaging (described in Ch 6.6) <p><i>Note:</i> When a code is not provided, it means a substance is not allowed in that type of packaging.</p>
Column 9	<p>Column 9 contains <i>special packing provisions</i> which are also found in §4.1.4.</p> <ul style="list-style-type: none">• PP – regular packaging• L – large packaging
Column 10	Column 10 lists <i>Intermediate Bulk Container (IBC) packing instructions</i> found in §4.1.4
Column 11	Column 11 lists <i>special provisions for IBC shipments</i> .
Column 12	<p>Column 12 lists <i>IMO tank instructions</i> applicable when shipping in this type of portable tank. These instructions can be found in §4.2.5</p> <p><i>Note:</i> IMO portable tanks may be used until 2010</p>
Column 13	Column 13 lists <i>UN tank instructions</i> applicable when shipping in this type of portable tank. These instructions can also be found in §4.2.5
Column 14	Column 14 lists the <i>special provisions for IMO and UN portable tanks</i> . The provision may be found in §4.2.5
Column 15	Column 15 contains the <i>Emergency Schedules</i> cross referenced in the <i>Supplement</i> to the IMDG Code.

IMDG Code DGL & 49 CFR (Cont.)

Column 16 Columns 16 lists *stowage and segregation* provisions found in Part 7.

Column 17 Column 17 lists *properties and observations* for each substance.

Column 18 Column 18 mirrors Col 1 and lists the *UN ID* number.

HMT Foreword The **H**azardous **M**aterials **T**able (HMT), 49 CFR 172.101, is the main reference for hazardous material regulations when offered for transportation in the US. It lists, classifies and describes the regulations for “hazardous materials” applicable by all modes of transportation.

- The provisions of the 49 CFR are applicable to anyone who
 - Offers;
 - Handles; or
 - Transports hazardous materials in commerce within the US.

49 CFR 171.8 regulates the following as hazardous materials:

- Materials listed in the HMT
- Hazardous Substances listed in Appendix A to the HMT
- Marine Pollutants listed in Appendix B to the HMT

Note: When a material is regulated by 49 CFR and **NOT** regulated by IMDG, default to the requirements of the 49 CFR.

HMT/Preamble The HMT is divided into 10 main columns; some of the columns are further subdivided. The **Preamble** to the HMT is located in 49 CFR 172.101 (a)-(k) and describes each column listed (similar to the *Structure* of the DGL).

IMDG Code DGL & 49 CFR HMT (Cont.)

Column 1

Column 1 contains *symbols* defined in 49 CFR 172.101 (b).

- + – Fixes the proper shipping name, hazard class and packing group, without regard to whether the material meets the definition of that class or packing group or any other hazard class definition
 - A – Regulated by air only, unless the material is a hazardous substance or waste
 - D – Identifies the PSN for a domestic shipment. May be inappropriate for international shipments.
 - G – Denotes it is an n.o.s. (not otherwise specified) entry, which requires its technical name in association with the PSN.
 - I – Identifies PSNs that must be used for international shipments.
 - W – Regulated when offered for transportation by vessel.
-

Column 2

Column 2 contains *hazardous materials descriptions* and *Proper Shipping Names*.

- Roman Type – indicates a Proper Shipping Name.
 - PSNs may be singular or plural
 - Words may be alternatively spelled (i.e. Sulfur-Sulphur)
 - When a PSN references another PSN by use of the word “see”, and both are in roman type, either may be used
 - The prefix “mono” is optional (i.e. Iodine monochloride or Iodine chloride)
 - The word “Waste” may be used if the material is a hazardous waste
 - Mixtures or Solutions shall have the word “mixture” or “solution” describing the PSN
-

Column 3

Column 3 identifies the *hazard class* (1-9 and ORM-D) of the material.

Note: If the word forbidden appears, then the material may not be offered for transportation.

IMDG Code DGL & 49 CFR HMT (Cont.)

Column 4 Column 4 Contains the *UN ID* or *North American (NA) ID* (for shipments in North America only).

Column 5 Column 5 specifies one or more *packing group* assignments to the material

Column 6 Column 6 specifies the required *labeling* for packages of hazardous materials. It will also describe subsidiary and subsequent hazards of the material.

Column 7 Column 7 specifies codes for *special provisions* applicable to the hazardous material. When referred to a special provision, the meaning and requirements are set forth in 49 CFR 172.102.

- Numeric- Applies to all modes in either bulk or non-bulk
- A- Aircraft shipments
- B- Bulk packaging
- H- Highway
- N- Non-bulk
- R- Rail
- T- Tanks
- TP- Portable tank provisions
- W- Vessel
- IB- Intermediate bulk containers
- IP- Special IBC packing provisions

Note: If the special provision is a numeric 1,2,3,4, (sometimes 5), 6, or 13 then the material has a Poison by Inhalation hazard.

IMDG Code DGL & 49 CFR HMT (Cont.)

Column 8 Column 8 lists *packaging requirements* and is broken down into three sub-columns, if referenced to a section it will be found in 49 CFR 173 and the number found in each respective column

- Column 8a contains exceptions such as limited quantities
- Column 8b contains the requirements for non-bulk packaging
- Column 8c contains the requirements for bulk packing

If the word “NONE” appears in any of the columns, that type of packaging or exception cannot be used.

Note: Column 7 may override this column.

Column 9 Column 9 gives quantity limitations applicable to *passenger aircraft* and *rail*.

Column 10 Column 10 specifies vessel stowage requirements for certain hazardous materials. It specifies where onboard a vessel hazmat may/must be stowed.

- Column 10a – Codes for values specified in column 10a can be found in 49 CFR 172.101 (k) (preamble)
 - Column 10b – Codes for values specified in column 10b can be found in 49 CFR 176.84
-

IMDG Code DGL & 49 CFR HMT (Cont.)

49 CFR Appendix A Hazardous Substances

Appendix A is found at the end of the HMT. This table lists *hazardous substances* which may have additional requirements. To qualify as a hazardous substance materials must:

- Be listed in Appendix A to the HMT
- Be in a quantity, in one package, which meets or exceeds the reportable quantity (RQ) listed in the appendix
- When in a mixture or solutions is in a quantity, in one package, which meets or exceeds the reportable quantity (RQ) listed in the appendix AND in a concentration which equals or exceeds the amounts listed in the table found in 49 CFR 171.8 (definition of “hazardous substances”)

Note: Many of the substances listed in Appendix A are NOT listed in the HMT. If the meet/exceed the reportable quantity then the substance is regulated as a **hazardous material**.

49 CFR Appendix B Marine Pollutants

Appendix B is located after the Hazardous Substance appendix and contains a list of those commodities identified as *Marine Pollutants*. 49 CFR defines marine pollutants as a material which is listed in Appendix B (Marine Pollutant Table), and when a solution or mixture is packaged in a concentration which equals or exceeds:

- 10% for Marine Pollutants
- 1% for Severe Marine Pollutants (identified in the table by the code **PP**)

Note: Many of the commodities listed in Appendix B are NOT listed in the HMT. If the material qualifies as a Marine Pollutant, then the substance is regulated as a **hazardous material**

Packaging

Introduction

This lesson covers the regulations that apply to non-bulk packaged hazardous material shipments. Students will learn about authorized hazardous materials packagings, competent authorities, and exemptions from the regulations.

TPO

DETERMINE the packaging requirements for dangerous goods/hazardous materials I.A.W. the DGL, Parts 4 and 6 of the IMDG Code and 49 CFR 171.23, .25, or the HMT and 49 CFR Parts 173 and 178.

Non-Bulk Definitions

Non-Bulk Packaging:

- For Liquids - less than or equal to 450 liters (119 gallons)
- For Solids - less than or equal to 400 kg (882lbs)
- For Gases – less than 1000lbs (454 kg) water capacity

Packaging – receptacles and any other components or materials necessary for the receptacle to perform its containment function.

Package – the complete product of the packaging operation, consisting of the packaging and its contents prepared for transport.

Inner Packaging – packaging for which an outer packaging is required for transport.

Outer Packaging – the outer protection of a composite or combination packaging together with any absorbent materials, cushioning and any other components necessary to contain and protect inner receptacles or inner packaging.

Combination Packaging – a combination of packagings for transport purposes, consisting of one or more inner packagings secured in an outer packaging.

Single Packaging – non-bulk packaging other than a combination packaging. Generally, this consists of a single receptacle into which a material is loaded

Note: Single packaging includes tank trucks, rail cars, freight containers, and portable tanks.

Packaging (Cont.)

Non-Bulk Definitions (Cont.)

Composite Packaging - packaging consisting of an inner and an outer receptacle constructed in such a way that together they form an integral package. Once assembled this package remains an integral single unit and is filled, stored, and emptied as such.

Overpack - an enclosure used by a single consignor to contain one or more packages and to form one unit for the convenience of handling and stowage during transport.

Intermediate Bulk Container

Intermediate Bulk Container (IBC): Rigid or flexible portable packaging, other than a cylinder or portable tank, which is designed for mechanical handling. IBC capacity limits are not more than 3 cubic meters (3000 liters, 793 gallons, or 105.9 cubic feet) and not less than 0.45 cubic meters (450 liters, 119 gallons or 15.9 cubic feet).

Note: Except for IBC's and UN portable tanks used for the transportation of liquids or solids, bulk packagings must conform to subchapter C requirements.

IBC Types

There are six different types of IBC's. The design and construction standards for these IBC's are found in applicable sections of Chapter 6.5:

- *Metal IBC*: metal body, with appropriate service and structural equipment. Intended for the transport of solids or liquids.
 - *Rigid Plastic IBC*: rigid plastic body which may have structural equipment (i.e. a metal frame) enclosing the IBC. Intended for the transport of solids or liquids.
 - *Composite IBC*: rigid outer packaging enclosing a plastic inner receptacle. The outer packaging of a composite IBC is designed to bear the entire stacking load. The outer and inner packaging must be filled, stored, transported, and emptied as a unit. Intended for the transport of solids or liquids.
 - *Fiberboard IBC*: fiberboard body with or without separate top and bottom caps and, if necessary, an inner liner (but no inner packaging). Intended for the transport of solids.
 - *Wooden IBC*: rigid or collapsible wooden body, together with an inner liner (but no inner packaging). Intended for the transport of solids.
 - *Flexible IBC*: constructed of film, woven plastic, paper, or combination thereof and, if necessary, an inner coating or liner. Intended for the transport of solids.
-

Packaging (Cont.)

Bulk Definitions *Cargo Tank:* Packaging other than a cylinder, portable tank, tank car, or multi-tank unit; designed primarily for the carriage of liquids or gases, and to be transported as an integral part of a motor vehicle.

Portable Tank: Bulk packaging designed primarily to be loaded onto, on, or temporarily attached to a transport vehicle or ship and equipped with the accessories to facilitate handling of the tank by mechanical means. This DOES NOT include tank cars, cargo tanks, and IBC's.

Intermodal (IM) Portable Tank: Any portable tank that also meets the definition of a container. Includes:

- IM 101 and 102 portable tanks
- UN portable tanks
- IMO Type 1, 2, and 5
- DOT 51 and 60 portable tanks

UN Portable Tank: An intermodal tank having a capacity of > 450 liters (118.9 gallons). Includes a shell fitted with service equipment and structural equipment, including stabilizing members external to the shell and skids, mountings or accessories to facilitate mechanical handling. Cargo tanks, rail tank car tanks, non-metallic tanks, non-specification tanks, bulk bins, and IBC's and packagings made to cylinder specs are NOT UN portable tanks.

Multi-Element Gas Containers (MECGs): Multiple large gas cylinders mounted horizontally within a frame to facilitate mechanical means of handling, stowage, and transport. Cylinders are filled and discharged from a common manifold that is a permanent part of the complete unit.

Cylinders: There are three types of cylinders commonly used for bulk packaging:

- Specification 3AX and 3AAX have a water capacity of at least 1000 pounds and a service pressure of at least 500 psi.
- Specification 3T's have a water capacity of at least 1000 pounds and a service pressure of at least 1,800 psi.

Rail Car: A bulk packaging designed to carry freight by rail. This includes:

- Box Cars
- Flat Cars
- Gondola Cars
- Hopper Cars
- Tank Cars

Packaging (Cont.)

Packaging Foreword

The packaging standards and markings are found in 49 CFR 172,173,176, 178, and 180, or the IMDG Code Part 6. These sections list general (non-bulk and bulk) packaging requirements, test requirements, and how they must be marked.

General packaging requirements are listed in 49 CFR 173 and IMDG Code Part 4. These requirements apply to bulk and non-bulk packaging, new and reused packaging, and specification and non-specification packaging.

Hazardous materials **MUST** be in packagings authorized by Columns 7 and 8 of the Hazardous Materials Table or the IMDG Code DGL columns 8 – 14.

Applicability

Packaging requirements for a specific material apply to all modes of transportation, unless otherwise stated.

- 49 CFR 173.3 and IMDG Code Chapter 6.1 list basic requirements that apply to **ALL** packages. Packaging for hazardous materials **MUST** be as specified in Part 173 or by the applicable packing instruction.
 - All domestic methods of manufacture, packing, and storage of hazardous materials must be open to inspection by the DOT for.
-

Shipper's Responsibility §173.22

The **shipper**, unless excepted, is responsible for verifying hazardous materials have been packaged IAW 49 CFR and/or the IMDG Code.

- Packages **MUST** be prepared so that during transport they will not leak.
-

Non-Bulk Packaging Types

Performance Oriented Packaging (POP) - packaging that must pass several tests which are found in 49 CFR 178 and IMDG Code Part 6 (i.e. leakproofness, drop test, etc.).

Specification Packaging - pre-1991 49 CFR listed the exact construction requirements for each type of specification packaging.

- Cylinders and radioactive packages are still manufactured under DOT specification packaging requirements.
-

Packaging (Cont.)

General Non-Bulk Requirements §4.1.1

- 4.1.1.1 requires dangerous goods to be packed in good quality packages, which shall be strong enough to withstand the shocks and loadings normally encountered during transport. Packages SHALL be closed so as to prevent any loss of contents. Packages SHALL be closed IAW the manufactures instructions. No residue SHALL adhere to the outside of packages during transport.
- 4.1.1.4 calls for shippers to leave sufficient ullage to prevent leakage or permanent distortion in packages intended to carry liquids
- 4.1.1.5 requires that inner packagings be packed in such a way that, under normal conditions of transport, they will not break, be punctured, or leak into the outer packaging.
- 4.1.1.6 Dangerous goods SHALL not be packed together in the same outer packaging, or in large packagings, with dangerous or other goods if they react dangerously with each other and cause:
 - .1 combustion and/or evolution of considerable heat;
 - .2 evolution of flammable, toxic, or asphyxiant gasses,
 - .3 the formation of a corrosive substance; or
 - .4 the formation of unstable substances.
- 4.1.1.11 says that empty packagings that have contained a dangerous substance SHALL be treated in the same manner as if the package was full, unless adequate measures have been taken to nullify any hazard.
 - 5.1.3.1 gives examples of measures for nullifying hazards; cleaning, purging of vapours, or refilling with a non-dangerous substance.

Non-Bulk Testing Requirements §6.1.5/§178.600

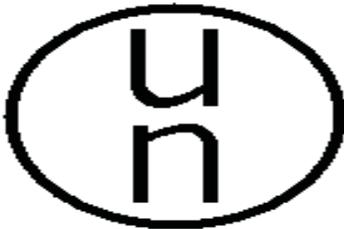
Each package design type intended for the transportation of hazmat must go through testing prior to the package being offered for use in transport. These testing requirements are found in IMDG Code 6.1.5 or 49 CFR 178.600

Non-Bulk Package Markings

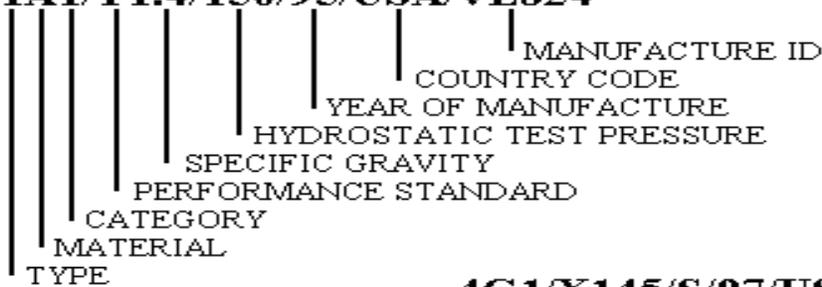
To indicate that packagings have been successfully tested, packaging intended for use shall bear markings I.A.W 6.1.2 – 6.1.4/178.502 – .504. The sections therein list and explain the (UN) identification codes, and markings required on Non-Bulk packages.

NON-BULK PACKAGING

Markings for Liquids and Solids

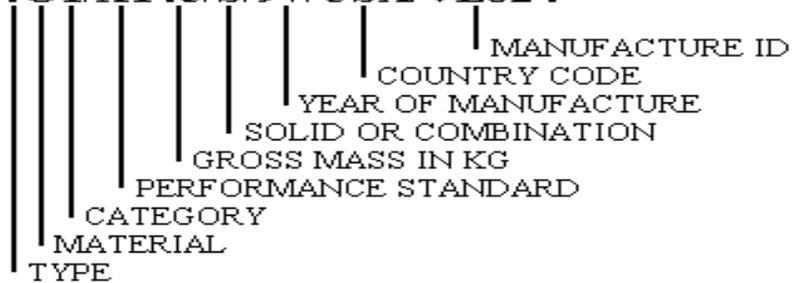


1A1/Y1.4/150/95/USA/VL824



LIQUIDS

4G1/X145/S/97/USA/VL824



SOLIDS

See IMDG 6.1.3.1 or 49 CFR 178.500

Packaging (Cont.)

IBC Testing Provisions §6.5.6/§178.800

Each newly designed IBC must undergo tests required for certification as prescribed in the testing table of 6.5.6.3.5.

IBC Inspection Provisions §6.5.4.4/ §180.350-352

Each IBC intended to contain liquids or solids that will be loaded or unloaded under pressure must undergo a leakproofness test and be marked as such every 2 ½ years starting from the date of manufacture.

A visual inspection must be conducted initially after production and every two and one half years thereafter. Each inspection must ensure the IBC:

- Is marked in accordance with section 6.5.2. Any missing, damaged, or difficult to read marking must be restored or returned to original condition.
- Service equipment is fully functional.
- Is free from any damage that would reduce its structural integrity or make it unsafe for transport.

Each flexible, fiberboard and wooden IBC must be inspected prior to each use to ensure all required markings are present, and meets proper construction and design specifications.

IBC Package Markings

IBC's intended for use must (like non-bulk packagings) bear marks indicating successful testing. Marking/Identification code requirements for IBC's are outlined in 6.5/178.700.

IBC Additional Marking Provisions §6.5.2.2 §178.703

Each *ridged plastic and composite* IBC must include the following markings near the UN package identification number:

- Rated capacity in liters of water at 20° C
- Tare mass in kilograms (weight of the empty container)
- Gauge test pressure in kPa
- Date of last leakproofness test, if applicable (month and year)
- Date of last inspection.

For *metal* IBC's, in addition to the above markings (minus gauge test pressure) the following markings must be included on a corrosion resistant plate:

- Maximum loading pressure in kPa
- Body material and its minimum thickness
- Serial number assigned by the manufacturer.

For *fiberboard and wooden* IBC's, the tare mass in kg must be shown.

Packaging (Cont.)

Portable Tank Types

Different classes of tanks that will be encountered and in the field are:

- IMO Type 1-IMDG (General Hazardous Chemicals)
- IMO Type 2-IMDG (Stainless Steel for Food Grade)
- IMO Type 5-IMDG (Pressurized Tank)
- IM 101-49 CFR (Until 2010 or required major repair)
- IM 102-49 CFR (Until 2010 or required major repair)
- DOT Specification 51 and 60 tanks
- UN portable tanks
- Cylinder skids

General Data Plate Requirements

The data plate can be in any format as long as it contains the required information and is:

- Corrosion resistant metal,
- Permanently attached, and
- Readily accessible for inspection.

Note: The safety approval plate can be incorporated in the data plate. This then becomes the consolidated data plate.

Packaging (Cont.)

**UN, IM and
MEGC's
Data Plate
Requirements**
§6.7.2.20
§178.274(i)

UN and IM portable tanks and MEGC's must have the following information marked on a data plate.

- Country of Manufacture
- Approval Country and number
- Alternative Arrangements
- Manufactures name or mark
- Manufactures serial number
- Approval Agency
- Owners number
- Year of Manufacture
- Pressure vessel code
- Test pressure in bar
- MAWP in bar
- External design pressure
- Design temperature range
- Water capacity
- Initial pressure test date and witness I.D.
- MAWP for heating or cooling systems
- Shell materials and thickness
- Equivalent thickness
- Lining materials if applicable
- Date of required test and stamp of witnessing approval agency

Note: Other marking requirements found in 178.274(i) may be required.

Packaging (Cont.)

DOT 51 and 60 Data Plate Requirements

DOT 51 portable tanks must have the following information marked on a data plate:

- Manufacturer name
- Serial number and owners serial number
- DOT specification number
- Water capacity
- Tare Weight
- Design pressure
- Design Specific Gravity
- Original test date
- Dates of retest

Portable tanks Specification 60 will have the following markings:

- Manufacturer name and serial number
- DOT specification number
- Nominal capacity
- Tare weight
- Date of manufacture

Portable Tank Testing Provisions §6.7.2.19 §180.605

Each portable tank must be tested and marked in the following manner:

- IM and UN portable tanks must be hydrostatically tested at least every 5 years and visually inspected at least every 2 ½ years. Both tests must be marked with the month and year of the date of both tests and witnessing agency on or near the I.D. plate in letters not less than 3mm high when on the metal plate and not less than 32 mm high when on the tank itself.
 - DOT 51 portable tanks tested in accordance with 49 CFR 180.605(h) every 5 years. The test date must be marked on the data plate
 - Other DOT spec tank testing requirements are found in 49 CFR 180.605.
 - Without regard to any other test requirement, any tank that shows evidence, at any time, of damaged or corroded areas, leakage, or other deterioration that indicates a weakness that could render the tank unsafe for service must be repaired, inspected, and retested IAW 6.7.2.19.7 prior to continued use.
-

Packaging (Cont.)

Portable Tank Inspection Provisions

§6.7.2.19
§178.255

Prior to filling an IM, IMO, UN, or DOT Portable tank, the following must be conducted:

- The shipper must ensure that the tank meets all the requirements of IMDG and the maximum allowable working pressure, the design pressure or test pressure is appropriate for the material being shipped.
- The determination of applicable pressures must take into account conditions encountered in transportation.
- A visual inspection of the shell and other appurtenances for corroded areas, dents, or any other damage must be made.
- All flanged connections or blank flanges must be checked for loose or missing nuts or bolts.
- All emergency devices must be checked for damage that could prevent their normal operation.
- All required markings must be legible.

Non-P.O.P. Packaging

Non-Performance Oriented Packagings (packages not tested/marked), i.e. a Xerox box or foot locker, may be used when hazardous materials are shipped as one of the following:

- Excepted Quantity (3.5.2);
- Limited Quantity (3.4.2); or
- ORM-D—Domestic only (173.156)

Note: Certain general provisions must still be adhered to. Refer to the cites listed beside each item.

Packaging (Cont.)

Data Plate Ex.

ALBY CONTAINERS LIMITED VLADIVOSTOK, RUSSIA TANK SERIAL NO. SCZU 870030-8		
MANUFACTURED BY YORKSHIRE MARINE CONTAINERS ADDRESS BEVERLEY ENGLAND		
DATE OF MANUFACTURE:	APRIL 1992	
MANUFACTURER'S SERIAL NO.:	YMC 101	
TANK DESIGN CODE: ASME. SECT. VIII DIV. 1 TANK TYPE: IM TYPE 101		
CAPACITIES/WEIGHTS/DIMENSIONS NOMINAL LIQUID CAPACITY 24,000 LITERS TOTAL MEASURED WATER CAPACITY AT 20° C 24010 LITERS 6343 US GALLONS		
TARE WEIGHT:	3650 kg	8046 lb
MAXIMUM PAYLOAD:	26830kg	59150lb
MAXIMUM GROSS WEIGHT:	30480kg	67200lb
PRESSURES		
TANK WORKING PRESSURE:	4-0 bar	58 lb/in
TANK TEST PRESSURE	6-0 bar	87 lb/in
STEAM TUBE WORKING PRESSURE	4 bar	58 lb/in
STEAM TUBE TEST PRESSURE:	6 bar	87 lb/in
TEMPERATURES		
AMBIENT TEMPERATURE RANGE:	-40°C to +65°C	
METALLURGICAL DESIGN TEMPERATURE	110°C to 230°F	
MAXIMUM PRODUCT TEMPERATURE	110°C to 230°F	
TOTAL HEAT LEAKAGE FACTOR	37Kcal/hr/°C	
FOR TEMPERATURE DIFFERENCE RANGE	30°C	
MATERIALS		
TANK SHELL & ENDS BS1501: PART 3: 316S33 TANK WELD BS316S92: STEAM DUCTS 316S33 SHELL THICKNESS 4.8mm, ENDS 5.7mm EQUIVALENT MIN. THICKNESS IN MILD STEEL 6.35mm INSULATION POLYURETHANE FRAME BS50C HIGH TENSILE STEEL		
CONNECTIONS		
BOTTOM OUTLET 3 inch AIRLINE 2 inch BSP TOP OUTLET 3 inch BSTD STEAM TUBES .75 inch BSP		
INSPECTION AUTHORITY LLOYD'S REGISTER INDUSTRIAL SERVICES REGULATING AUTHORITIES AND APPROVAL/PERMIT No's Approval No DOT(UK)IMO Type 1 DOT(US) IMIOI ADR/RID CERT No 032567 CTC COUNTRY OF APPROVAL UK		
TESTS		
FIRST AND SUBSEQUENT TEST DATES	4-92	
5 YEAR TEST DATE		
WITNESS MARK		
VISUAL TEST DATE		
CSC SAFETY APPROVAL		
APPROVAL REFERENCE	GB-LR 7708-3/92	
DATE MANUFACTURED	APRIL 92	
IDENTIFICATION No.	SCZU 870030-8	
MAXIMUM GROSS WEIGHT	30,480kg	67,200lb
ALLOWABLE STACKING WEIGHT FOR 1.8G	162,560kg	358,380lb
RACKING TEST LAD VALUE	15,240kg	33,600lb
2R LONGITUDINAL INERTIA & IR LATERAL INERTIA TESTED		
ACEP BDA-01		

Packaging (Cont.)

Competent Authority

A competent authority is defined by the IMDG as any national regulatory body or authority designated or otherwise recognized as such for any purpose in connection with the IMDG.

7.9.3 lists main designated competent authorities from various countries in. The two listed for the United States are the Pipeline Hazardous Material Safety Administration (PHMSA) and United States Coast Guard.

Pipeline Hazardous Materials Safety Administration

Through PHMSA, the Department of Transportation develops and enforces regulations for the safe, reliable, and environmentally sound operation of the nation's 2.3 million mile pipeline transportation system and the nearly 1 million daily shipments of hazardous materials by land, sea, and air.

Special Permits and Approvals

There are two ways for shippers to receive authorization to ship hazardous materials differently than the regulations currently allow. The shipper can apply for either a special permit or a competent authority approval. These documents are similar but have a few very important differences.

- *Special Permit*: provides relief from current regulations only after the person requesting the permit has submitted to PHMSA, data showing that the desired method of transporting hazmat is at least as safe as the currently allowed method(s). Prior to any shipment covered by a Special Permit the shipper should provide the receiving competent authority with a copy. These special permits can only be used by the person who applied for the permit and those that have applied and been approved to be partied to it.
 - When researching a “DOT” special permit number, call (202) 366-4535. This is the issuing office for DOT special permits.

Note: The IMDG states in 7.9.1.1 that acceptance of an exemption by a competent authority is subject to the discretion of that competent authority.

- *Competent Authority Approvals*: also provide relief from current regulations but can only be issued when a regulation specifically mentions the requirement may be changed with approval of the competent authority.

Note: A competent authority approval MUST be accepted by any country signatory to SOLAS or MARPOL.

Packaging (Cont.)

Non-Bulk Verification Step Process

Follow these procedures when determining if a package is authorized for use:

1. Look up the PSN in the HMT or the DGL.
2. **HMT**, determine the appropriate package and cite (173***) in Col 8 (a/b/c). **DGL**, determine the alpha-numeric code in column 8 and refer to Ch 4.
3. Verify the marking on the package to the type of package being used and that the package is properly marked IAW Part 178 or Part 6 in the IMDG.
4. Verify that the package is authorized for the PG indicated in the HMT.
5. Verify that Column 7 “Special Provision Codes” or Column 9 “Packing Provisions” does not further restrict the package.

Note: Specification package markings are found 49 CFR part 178 or IMDG Ch 6.2 – 6.4 POP markings are found in 49 CFR 178.503 or IMDG 6.1.3

Marking and Labeling

Introduction

This lesson will cover the marking and labeling provisions that apply to packaged dangerous goods/hazardous material shipments. These provisions relate essentially to dangerous good/hazardous material properties and precautions.

TPO

DETERMINE the requirements for marking and labeling packaged dangerous goods/hazardous materials I.A.W. IMDG Code 5.2 or 49 CFR 172.300 and § 172.400.

General Marking Requirements

§5.2.1
§172.302

When a shipper transports hazardous material they must mark each package with:

- The proper shipping name as found in the column 2 of the Dangerous Goods List (DGL), except limited quantities marked IAW 3.4.5.
 - The identification number preceded by the letters “UN” as found in Column 1 of the DGL, except limited quantities marked IAW 3.4.5.
 - When a shipment contains goods of division 1.4, compatibility group S, the division and compatibility group shall be marked unless the 1.4S label is displayed.
 - The technical name for the material, if applicable on the shipping papers (if commodity has special provision 274 in column 6)
-

Physical Characteristics & Requirements

§5.2.1.2
§172.304

The physical characteristics and regulations of package markings are as follows:

- Markings must be readily visible and legible,
- Markings must be so that this information will still be identifiable on packages surviving at least three months’ immersion in the sea,
- Markings shall be displayed on a background of contrasting color,
- Markings must be unobscured by labels or attachments and located away from other markings which could reduce their effectiveness

Note: 49 CFR 171.22(f)(3) requires all package markings to be in ENGLISH. Markings may be in English & another language.

Marking and Labeling (Cont.)

Radioactive Materials

§5.2.1.5
§172.310

In addition to any other marking requirements of the IMDG, each package of radioactive material must be marked as follows:

- An identification of either the consignor, consignee, or both
- Gross weight markings are required for each package in excess on 110 lbs (50 kgs)
- A marking identifying the type of package for Types A, B, B(U), B(M), and C
- Industrial Package Type 1 and Type 2 are required to be marked “Type IP-1 or Type IP-2
- Type B, B(u), B(m), or C package must be marked with the radiation (trefoil) symbol as found in 5.2.1.5.6 of the IMDG Code

Note: The IMDG Code goes into much greater detail than the 49 CFR

Marine Pollutants

§5.2.1.6.1
§172.322

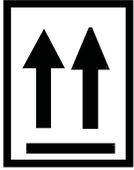
For vessel transportation, packages of marine pollutants must conform to the following:

- The Marine Pollutant mark must be placed near the hazard label.
 - Marine Pollutant marks are NOT required on combination packages containing a severe marine pollutant in inner packagings which contain:
 - .5 liters or less for liquids, or
 - 500 grams or less for solids.
 - Marine Pollutant marks are NOT required on a combination package containing a marine pollutant in inner packagings which contain:
 - 5 liters or less for liquids, or
 - 5 kg or less for solids.
-



Marking and Labeling (Cont.)

Orientation Arrows §5.2.1.7 §172.312



Each combination package containing liquid hazardous materials must be:

- Marked on two opposite sides with package orientation marking pointing in the correct direction; and
- Packaged with closures upward.

This requirement DOES NOT apply to:

- A package whose inner packagings are cylinders,
- Dangerous goods in inner packages of not more than 120ml which are prepared with sufficient absorbent material between the inner and outer packagings to completely absorb the liquid contents
- Materials classed as ORM-D (49 CFR)
- Liquids in manufactured articles (e.g. alcohol or mercury thermometers) which are leak tight,
- Liquid infectious substances in primary receptacles 50 ml (1.7 oz.) or less.

Labeling of Packages including IBC's

Labels identifying **primary and subsidiary** risks shall be affixed to packages containing dangerous goods. Check columns **3** and **4** for required labels. Special provisions may require a subsidiary risk label where no subsidiary risk is indicated in column 4, or may exempt a shipment from a labeling requirement.

Under the IMDG Code section 5.2.2, the following exceptions apply:

- Packages shipped as a limited quantity in accordance with Column 7 in the DGL; and
 - Packaged goods with a low degree of danger and are identified as such in Column 6 (Special Provisions) of the DGL, and if required are marked with "CLASS" followed by the class number.
-

Marking and Labeling (Cont.)

General Labeling Requirements

§5.2.2.1.6 –
5.2.2.1.8

- Labels are required to be located on the same surface of the package near the Proper Shipping Name marking, if the package dimensions are adequate.
 - Labels must be so placed on the packaging that they are not covered or obscured by any part or attachment to the packaging or any other label or marking.
 - When primary and subsidiary labels are required, the labels must be displayed next to each other.
 - When a package is of such an irregular shape or small size that a label cannot be satisfactorily affixed, the label may be attached to the package by a securely affixed tag or other suitable means.
 - Intermediate Bulk Containers (IBC'S) of more than 450 l capacity and large packagings shall be labeled on two opposing sides.
 - Labels shall be affixed on a surface of contrasting color.
-

Self-Reactive, Organic Peroxides & Infectious Substances

There are *special labeling provisions* for self-reactive substances, organic peroxides, and infectious substances given in this section of the IMDG Code. As these labeling provisions occur rarely in shipment we will not focus on them. Do note however that there are special labeling provisions for certain types of these commodities provided in 5.2.2.1.9-5.2.2.11.

Radioactive Materials

§5.2.2.1.12

In addition to the special labeling provisions listed above there are also provisions for radioactive labels. Radioactive labels are required on each package, overpack, and freight container containing radioactive materials. These shipments shall bear at least two labels which conform to the models shown in the IMDG Code. If labels are used on the outside of a freight container, one shall be placed on all four sides. There is an exception that allows shippers to use placards only on the outside of freight containers carrying radioactive materials in 5.3.1.1.5.1

Radioactive labels shall be completed with the following information:

- Except for LSA-I material, the name of the radionuclide
 - The maximum activity of the radioactive contents during transport shown in Becquerel's (Bq)
 - The transport index except for shipments in category I- White
-

Marking and Labeling (Cont.)

Labeling Exceptions

Under the IMDG Code section 5.2.2, the following exceptions apply:

- Packages shipped as a limited quantity in accordance with Column 7 in the DGL; and
 - Packaged goods with a low degree of danger and are identified as such in Column 6 (Special Provisions) of the DGL, and are marked with “CLASS” followed by the class number.
-

Label Provisions

- Labels must be designed in accordance with 49 C.F.R. 172.407 and 172.411 – 446 or the IMDG Code Sub-section 5.2.2.2.
 - Both 49 C.F.R. and the IMDG Code require labels to be 100 mm (3.9”) by 100 mm with a solid line 5 mm (.2”) from the border.
 - Cylinders may, on account of their shape use a “neck ring” label.
 - Text is only required on class 7 labels. When text is included on other labels it shall be limited to particulars indicating the nature of the risk and precautions to be taken in handling.
 - Labels must be capable of being identified after three months’ immersion in the sea.
-

Marking and Labeling (Cont.)

Differences between IMDG and 49 CFR

There are various differences in marking and labeling requirements between 49 CFR and the IMDG Code. **The following blocks cover regulatory differences that are either not acceptable or necessary for international and domestic shipments.*

Consignor and Consignee

§172.301(d) requires shippers to mark packages with the name & address of the consignor *or* consignee, unless excepted; this is **NOT** required for IMDG shipments.

Poisonous Materials §171.23(b)(10)(iii) §172.313

§172.313 requires that packages containing materials that are poisonous by inhalation be marked with the words “Inhalation Hazard”. If the label includes the words, Inhalation Hazard, the marking is not required. This marking **IS** required on IMDG shipments as it is required by §171.23(b)(10)(iii).

Limited Quantities §3.4.5.1 §172.315

IMDG Code *and* 49 CFR allow shippers to mark packages containing limited quantities of hazmat with either the Limited Quantities mark, or as otherwise required: with PSN, UN ID, and any other required markings.



ORM-D §172.316

The ORM-D marking discussed in 172.316 is **NOT** recognized internationally. International shipments should be sent as limited quantities.

Hazardous Substance §171.23(b)(5)(iii) §172.324

International shipments of packages containing hazardous substances are **required** by §171.23(b)(5)(iii) to be marked with the letters **RQ** in association with the PSN.

Oxygen Modification

§172.405 allows the use of an Oxygen label in lieu of a 5.1 and 2.2 label. The word “OXYGEN” must appear on the label. This is a **DOMESTIC** only mod.

Placement of Multiple Labels and Durability

Placement – 49 requires primary and subsidiary labels to be within 6” of each other. The IMDG states labels should be located *near* each other.

Durability – 49 requires labels to be able to withstand 30 day exposure to the elements; IMDG Code requires labels to withstand 3 months immersion in sea.

Marking and Labeling (Cont.)

Marking & Labeling Job Aid

Marking	49 CFR	IMDG Code
General	Proper Shipping Name UN ID number Consignee/consignor name & address	Proper Shipping Name UN ID number
Poisonous by Inhalation §171.23(b)(10)	Unless label includes, the text “ Inhalation Hazard ” must be marked on the package	←Must follow 49 CFR
ORM-D	Package marked ORM-D	N/A Ship as limited quantity
Marine pollutants	Marine pollutant mark required unless excepted by 172.322(d)	Marine pollutant mark required unless excepted by 5.2.1.6.1
Limited Quantity	Limited Quantity mark required unless shipped domestically as consumer commodity.	Limited Quantity mark required. Old Limited Quantity mark with UN # in the white diamond not allowed after December 31, 2011.
Labeling	49 CFR	IMDG
Primary/Subsidiary	Required/listed in col. 6 of the HMT	Required/listed in col. 3 & 4 of the DGL
Limited quantities	No label required	No label required
Modifications	Text not required except for the oxygen label and class 7 labels	Text not required except for class 7; (Oxygen labeled w/ 2.2 & 5.1)
Placement (if size of pkg permits)	Affixed to a surface other than the bottom near the PSN	Located near the PSN
Size	At least 100mm On Each Side	At least 100mm On Each Side

This page has intentionally been left blank

Placarding & Marking of Cargo Transport Units

Introduction This lesson covers the provisions that apply to placarding and marking of cargo transport units (CTUs). Enlarged labels—placards—and marks and signs provide the first line in hazard communication. Placards and markings on CTUs provide a warning that the cargo is dangerous and presents risks.

TPO **DETERMINE** the requirements for placarding and marking CTUs containing dangerous goods/hazardous materials I.A.W. IMDG Code 5.3, or 49 CFR 172.300 and § 172.500.

General Provisions
§5.3.1.1.1 General provisions describe that placards, marks, and signs must be clearly visible and identifiable from the exterior of the CTU. Also outlined is the durability of the items and how long they must last in adverse weather conditions at sea. The IMDG Code states that placards MUST remain identifiable and withstand 3 months (90 days) immersion in the sea.

Note: 49 CFR 172.519 requires only 1 month (30 days) of exposure to open weather conditions without substantial reduction in effectiveness.

General provisions require that when hazmat is no longer present in the CTU, such identifiable placards and markings must be removed from the CTU. CTUs that contain residues of dangerous goods **MUST** continue to bear hazard communication as per IMDG 5.1.3.3, unless purged and certified clean.

§5.3.1.1.2 The IMDG Code also requires that placards **MUST** correctly identify the hazards associated with the cargo. Improperly placarding, as well as marking, of a CTU is not allowed. The corresponding risk must be accurate.

Exceptions under 5.3.1.1.2 The IMDG has few exceptions but in the case of 1.4S, limited quantities, and radioactives in excepted packaging no placarding shall be required. Markings still apply to limited quantities and will be discussed later in the lesson.

- Placarding of *explosives* can be indicated by placing the highest risk placard on the CTU when there are multiple materials of the same hazard class present.
- Any placard that is used must be displayed on a contrasting background so as to be easily identifiable.

§5.3.1.1.3 Other than the exceptions above, the IMDG Code is very limited with exceptions to the rules. It is clear that hazard communication is very important in the international shipping industry; therefore, if a LABEL is required for a dangerous goods package, a PLACARD is required on the CTU.

Placarding and Marking of Cargo Transport Units (Cont.)

Placarding Requirements §5.3.1.1.4

CTUs are required to have a certain amount of placards depending on the type of unit the shipper is employing. Units, depending on their particular design, may require multiple placards and markings in various locations ranging from two to four placards per unit.

§5.3.1.1.4.1

←This cite specifically outlines each type and required placards.

Specification for Placards §5.3.1.2

Placards that are required for transport by vessel are slightly different from domestic requirements. It is important to understand that 49 CFR 171.22 transportation regulations allow for differences. The acceptance of international requirements will be discussed further in another module.

IMDG Code states that placards must

- Be at a minimum of **250** mm by **250** mm
- Correspond to the appropriate label for that dangerous good, and
- Display the hazard class or division of the dangerous goods.

The compatibility group for class 1 materials must also be included so that the vessel can account for stowage provisions.

Placarding & Marking of Cargo Transport Units (Cont.)

Marking Requirements

Marking of CTUs is another act of communicating the hazards involved with the dangerous goods being transported. Marking is a required action if the dangerous goods meet certain thresholds, or volume limits. Items shipped in a certain manner require additional marking to enhance the other hazard communication elements.

Display of Proper Shipping Names §5.3.2.0

Proper shipping names shall be durably marked on at least both sides of the following:

- Tank transport units containing dangerous goods
 - Bulk containers containing dangerous goods; or
 - Any other CTU containing packaged dangerous goods of a single commodity for which no placard, UN Number or Marine Pollutant mark is required. Alternatively, the UN Number may be displayed.
-

Display of UN Numbers §5.3.2.1

In certain shipment arrangements UN numbers **shall** be displayed for the same reason as all other hazard communication requirements. Keep in mind that UN numbers “may” be displayed when not prohibited.

Except for goods of class 1, the UN Number shall be displayed on the following shipments:

- Cargo transport tanks, including each multi-compartment cargo tanks;
- Packaged dangerous goods loaded in excess of 4000 kg gross mass, to which only one UN Number has been assigned and which are the only dangerous goods in the cargo transport unit;
- UN packaged LSA-I or SCO-I material of class 7 in or on a vehicle, or in a freight container, or in a tank;
- Packaged radioactive material with a single UN Number under exclusive use in or on a vehicle, or in a freight container;
- Solid dangerous goods in bulk containers.

Note: Regarding 49 CFR, use of UN Numbers is more detailed in nature due to exceptions. 49 CFR 172.301(a)(3)(iv) states that no other commodity may be in the container (even general cargoes), where as IMDG Code does not differentiate between the type of cargoes. Also, prohibited display of UN numbers is described in more detail in 49 CFR 172.334.

Placarding & Marking of Cargo Transport Units (Cont.)

UN Number Specifications §5.3.2.1.2

UN Numbers must be a minimum of 65 mm high either;

- Against a white background in the lower half of each primary hazard class placard, or;
 - On an orange panel style;
 - When no placard or marine pollutant mark is required the UN Number shall be displayed immediately adjacent to the proper shipping name.
-

Elevated Temperature Substances §5.3.2.2

In some cases cargoes must be heated to be transferred into its transport package or tank.

If the cargo contained in a CTU is transported or offered for transport in a liquid state at or above 100° C or in a solid form at or above 240° C the CTU shall bear the elevated temperature marking.

The maximum temperature that is to be reached during transport **SHALL** also be marked durably adjacent to the elevated temperature marking. (100 mm high at a minimum)

Marine Pollutant Mark §5.3.2.3

CTUs that meet the criteria for marine pollutants must clearly display the marine pollutant mark in the same manner as the requirements for placarding. See 5.3.1.1.4.1

IMDG stipulates that even if the marine pollutant mark is not required to be placed on the packages themselves it is required to be placed on the CTU.

- The Marine Pollutant mark shall be 250 mm per side, minimum.
-

Limited Quantities §5.3.2.4

CTUs that contain dangerous goods in limited quantities **ONLY** are to be suitably marked on the exterior. In the event that any other dangerous good is being shipped in the same container, and that other commodity requires a placard, then the limited quantities marking is no longer required.

- The marking shall be IAW IMDG 5.3.2.4 and 3.4.5.5 for all international shipments.
- The marking shall be displayed in the same manner as all other associated markings. For most transport units it will be on four sides.

Note: This marking is **only** required by the IMDG Code, LTD QTY shipments prepared IAW 49 CFR (domestic) do not require this marking, nor any other placards. It is the judgment of the inspector to ensure adequacy of this marking. No durability of marking is required.

Placarding & Marking of Cargo Transport Units (Cont.)

Fumigated Units §5.5



For agricultural/invasive species purposes, CTUs may be required to be fumigated. In the case of fumigated CTUs the following requirements apply:

- If the CTU is being fumigated, it only needs to follow the provisions of §5.5 with the fumigant marking. If the CTU contains fumigant packs being shipped as cargo, it shall be considered a UN 3359 and properly shipped as such.
- The fumigated unit shall be marked with the warning sign as specified in 5.5.2.3.2.
- This warning sign shall be placed in a place that can be easily and identifiable to anyone wanting to make entry into that unit.

The warning sign shall remain on that unit until:

- The fumigated unit has been ventilated to remove harmful concentrations of the gas; and
- The fumigated goods or materials have been unloaded.

The warning sign shall be rectangular and shall be not less than 300 mm wide and 250 mm high. *Black* print on a white background with not less than 25 mm high lettering is required.

Note: 49 CFR allows for “Red or Black” lettering.

Dangerous Placard §172.504(b)

49 CFR 172.504(b) outlines the details in which the “Dangerous” placard may be used. Several factors must be met prior to the use.

The dangerous placard is **NOT** recognized internationally and **SHALL NOT** be used for international shipments.

Bear in mind that some transportation by vessel shipments could fall within the domestic transportation requirements and therefore be allowed.

Placarding for Subsidiary Hazards §172.505

The IMDG Code requires placarding for ALL subsidiary hazards within a CTU. 49 CFR *only requires* placarding for the following *subsidiary* hazards:

- *Poison Inhalation Hazard* (PIH) placard, for materials meeting PIH criteria (Special provision #'s 1 - 4, sometimes 5, 6, and 13).
 - *Corrosive* placard, for CTUs containing > 454kg (1001 lbs) of uranium hexafluoride.
 - *Dangerous When Wet* placard, for materials with a subsidiary hazard of 4.3
-

This page has intentionally been left blank

Documentation

Introduction

This lesson will cover shipping paper/documentation provisions in the IMDG Code. Also, additional 49 CFR documentation requirements that IMDG shippers must comply with will be discussed.

TPO

DETERMINE the requirements for transport documentation I.A.W. Part 5.4 of the IMDG Code and 49 CFR 171.22 – .25, or § 172.200.

General §5.4.1.1

Except as otherwise provided, the **consignor** who offers dangerous goods for transport **shall** describe the dangerous goods on a transport document and provide additional information and documentation as specified by the IMDG.

Note: IMDG uses “transport document(s)” as 49 CFR uses “shipping paper(s)”.

Transport Document Format §5.4.1.2

A transport document may be in any form/format, provided it contains all of the information required by the provisions of the IMDG Code and/or 49 CFR.

- If both dangerous and non-dangerous goods are listed in one document, the dangerous goods shall be listed first, or otherwise be emphasized.
-

Continuation Page and Legibility §5.4.1.2.3 & .4

The transport document may consist of more than one page, provided pages are consecutively numbered. Single paged docs do not require page numbering.

Information shall be easy to identify, legible and durable.

Consignor, Consignee and Date §5.4.1.3

The name and address of the consignor *and* consignee of the dangerous goods, and the date the dangerous goods transport document was prepared or given to the initial carrier, **shall** be included.

Note: 49 CFR **only** requires the name and address of the *consignor* and date of shipment.

Documentation (Cont.)

Dangerous Goods Description §5.4.1.4

The dangerous goods transport document **shall** contain the following information for each dangerous good offered for transport (**ISHP**):

- .1 UN Identification number preceded by the letters “UN”;
- .2 Proper Shipping name, including the technical name enclosed in parenthesis (if special provision 274 is indicated)
- .3 Hazard class (primary; and subsidiary(s)—if applicable in parenthesis). Goods of class one should include the compatibility group letter.
- .4 Packing group if applicable—class 2 and 7 do not have packing groups.

These 4 elements must be listed in that sequence (ISHP) with no other information interspersed, unless permitted in the IMDG.

Supplemental Information §5.4.1.4.3

The Proper Shipping Name (PSN) in the dangerous goods description **shall** be supplemented with the following if applicable:

- *Technical names or chemical group name* for “n.o.s” shipments that are assigned a special provision 274 in the dangerous goods list.
 - *Empty uncleaned packages, bulk containers, and tanks* which contain the residue of dangerous goods shall be described by placing the words “Empty Uncleaned” or “Residue Last Contained” before or after the Dangerous Goods Description.
 - *Wastes* dangerous goods shall precede the PSN with the word “Waste”, unless this is already part of the PSN
 - *Elevated temperature materials* shall precede the PSN with the word “Hot” if the PSN does not convey an indication of the elevated temperature, by using words like “Molten” or “Elevated Temperature.”
 - *Marine Pollutants* shall be identified as such by including the words “Marine Pollutant.”
 - *Flashpoint* shall be indicated for dangerous goods having a flashpoint of 60°C or below (in closed cup testing).
-

Total Quantity/ Packages of Dangerous Goods §5.4.1.5.1

Except for empty uncleaned packages, the **total** quantity of dangerous goods covered by one description must be indicated on the transport document. For class 1 commodities the quantity shall be the net explosive mass. Salvage packages may estimate the quantity of dangerous goods.

The **number** and **kind** (i.e. drum, box, cyl) of packages shall be indicated.

Documentation (Cont.)

Limited Quantities §5.4.1.5.2.1 & 3.4.6.1

Shipments of dangerous goods transported as limited quantities **must** include the words “Limited Quantity” or “LTD QTY” together with the dangerous goods description (either before *or* after).

Self-reactive Substances & Organic Peroxides §5.4.1.5.5

Self-reactive substances of class 4.1 and organic peroxides which require temperature control during transport must indicate the control temperature and the emergency temperature on transport documents.

Note: The control temperature is generally 50% of the SADT, and the emergency temperature is at 75% of the SADT.

Example: Control 15° - Emergency- 20° - SADT-30°

Radioactive Material §5.4.1.5.7

Radioactive material shipments require a significant amount of information to be added to the transport documentation. Some of these requirements are situational and will not be required for all class 7 shipments.

- *Name or symbol of each radionuclide*
 - *Form Description*—physical or chemical
 - *Maximum activity*—given in becquerels (Bq)
 - *Category of package*—White I, Yellow II, or Yellow III
 - *Transport Index*—Yellow II and Yellow III only
 - *Criticality Safety Index*—fissile material only
-

Shippers Certification §5.4.1.6.1

The dangerous goods transport document **shall** include a certification or declaration that the consignment is acceptable for transport and that the goods are properly packaged, marked and labeled. **Verbiage for this certification/declaration is prescribed in 5.4.1.6.1.**

This certification shall be signed and dated by the *consignor*. Electronic signatures are acceptable.

Container/ Vehicle Packing Certificate §5.4.2

Those responsible for packing the container or vehicle shall provide a packing certificate specifying the container ID number and certifying that the operation has been carried out IAW the provisions listed in 5.4.2.

- This certificate may be part of or separate from the transport document.
 - The declaration **must** be signed and dated.
-

Documentation (Cont.)

Shipboard Requirements §5.4.3

Ships carrying dangerous goods and marine pollutants **shall** have a list or manifest (i.e. DCM) identifying the location of dangerous goods and marine pollutants. This manifest **shall** include the basic description of cargo, stowage location, and the total quantity of dangerous goods and marine pollutants.

Note: 49 CFR has more detailed requirements for information on a DCM.

Emergency Response Information §5.4.3.2

Emergency response information (i.e. ERG, MSDS) for shipments of dangerous goods shall be immediately available at all times and away from packages containing dangerous goods for use in emergency response situations

Note: IMDG Code has NO requirement for an emergency response phone #.

Fumigated Units §5.5.2.4

Transport documents for a fumigated unit shall show the type and amount of fumigant used and the date and time of fumigation. Instructions for removing any residual fumigant, if needed, shall be included.

IMDG Code & 49 CFR Differences

**The remaining blocks for documentation are not all inclusive, but cover 49 CFR requirements that IMDG users must comply with and major differences between the two regulations.*

Complete Information and Certification §171.22(f)

Shipping papers are required by 171.22(f)(3) to provide information in English. Shipping papers may be in English and another language.

- *hazardous waste shipments*, the shipping paper must be retained for 3 years
 - *All other hazardous materials*, the shipping papers must be retained for 2 years.
 - The shipping paper is required to contain a date of acceptance by the initial carrier or the date of shipment.
-

Additional Requirements §171.22(g)

Shipments of hazardous materials under an international standard (IMDG Code) must conform to emergency response info requirements (§**172.600**).

Documentation (Cont.)

**Emergency
Response
Phone Number**
§172.604

Shippers are required to provide an emergency response telephone number. This is a number that, in the event of an emergency, will connect the caller to a person who is knowledgeable (has comprehensive emergency response and incident mitigation about the hazardous material being shipped, or a person with immediate access to another person who possesses such information).

Note: (1) A call back or answering machine is not acceptable, and (2) there is a list of commodities excepted to this requirement in 172.602(c)

**Hazardous
Substances**
§171.23(b)(5)

A material that meets the definition of a hazardous substance must conform to the shipping paper requirements in 172.203(c)

- The proper shipping name must identify the hazardous substance by name or if a technical name in parenthesis
- The shipping paper must identify at least two hazardous substances with the lowest reportable quantities when the material contains more than two hazardous substances
- The letters “RQ” must be entered on the shipping paper either before or after the basic description

Example: RQ UN2473, Sodium Arsenate, 6.1, II

**Poisonous by
Inhalation
Materials**
§171.23(b)(10)

Poisonous by Inhalation materials **must** include the words “Poison-Inhalation Hazard” or “Toxic Inhalation Hazard” and an indicator of the zone (if applicable).

Example: UN1045, Fluorine, Compressed, 2.3, Toxic Inhalation Hazard Zone A

SHIPPING PAPER CHECKLIST

Basic Description (proper sequence §5.4.1.4.2)

Use the Dangerous Goods List (DGL)(Ch. 3)

- Identification Number (DGL Column 1)
- Proper Shipping Name (DGL Column 2)
- Hazard Class (DGL Column 3) – (Subsidiary Hazard Column 4)
- Packing Group (DGL Column 5)

Other Information – as applicable (§5.4.1.4.3)

- Technical name ("274" in DGL Column 6). See § 5.4.1.4.3.1 for specific requirements.
- Subsidiary hazard(s) (DGL Column 4)
- "EMPTY UNCLEANED/RESIDUE LAST CONTAINED****" for packages containing residue
- "Waste" for waste dangerous goods being transported for disposal.
- "HOT" for liquid elevated temperature materials.
- "Marine Pollutant" (for non-bulk by vessel and bulk in all modes).
- Flashpoint (i.e. 29° C c.c.) for dangerous goods having a flashpoint of 60° C or below.

Additional Descriptions – as applicable (§5.4.1.5)

- Number and type of packages (i.e., "12 drums" or "12 1A1 drums")
- Total quantity (net mass) of dangerous goods (by mass or volume, i.e., "200 kgs" or "50 L")
- Gross mass of packaged dangerous goods (net + weight of package)
- "DOT-SPxxxxx" Special Permit number
- "Ltd Qty" or "Limited Quantity"
- "RQ" for Reportable Quantity. See Appendix A of the HMT for specific requirements.
- "Poison-Inhalation Hazard" or "Toxic-Inhalation Hazard" and applicable Zone, e.g., "Zone A", "Zone B", etc., (HMT Column 7 and §172.203(m))
- "Radioactive Material" See HMR §172.203(d) for specific requirements.

Emergency Response Information (§ 5.4.3.2 § 49 CFR 171.25(d)(2), 172.201(d)/172.604)

- ERG/MSDS/EmS identified and attached
- Emergency Response Telephone Number identified

Shipper's Certification (§ 5.4.1.6)

- Signed statement: "This is to certify that the above-mentioned materials..." See § 5.4.1.6.1 for specific certification statements.

Container/Vehicle Packing Certificate (5.4.2)

- Signed statement/form: "It is declared that the packing of the goods into the container..." See § 5.4.2.1 for specific conditions to be met.

Container Loading and Stowage

Introduction

This lesson will identify provisions and guidelines for packing, securing, and segregation of cargo transport units carrying dangerous cargoes.

Note: The Supplement to the IMDG Code and Code of Safe Practice for Cargo Stowage and Securing were referenced for the development of this lesson—these publications contain *guidelines* only.

TPO

DETERMINE packing and stowage requirements for cargo transport units I.A.W. Part 7 of the IMDG Code and Part 176 of 49 CFR.

Packing of CTUs

§7.3.3

§176.69/72

- No damaged, leaking or sifting packages **shall** be packed into a CTU.
 - Packaged dangerous goods and any other goods within the same CTU **shall** be tightly packed and adequately braced and secured.
 - Dangerous cargo consignments which form only part of the load of a CTU **should**—NOT required, whenever possible be packed adjacent to the doors with markings and labels visible. Particular attention is drawn to 3.3.1 (of the Supplement) which provides guidance on ensuring cargo security by building a secure face of the cargo so as to prevent “fall out” when the doors are opened... This may hinder visibility of markings and labels from a tailgate inspection stand point, but provides for a secure load.
 - Irrelevant markings, labels, placards, orange panels, signs, and marine pollutant marks **shall** be removed or masked prior to packing a CTU.
 - CTUs **shall** be loaded so that the cargo is uniformly distributed consistent with the Guidelines for Packing of CTUs (found in the Supplement).
-

Container Loading and Stowage (Cont.)

Segregation Table

The following table (excerpt from the IMDG Code) shows the general provisions for segregation between the various classes of dangerous goods.

SEGREGATION SHALL ALSO TAKE ACCOUNT OF A SINGLE SUBSIDIARY RISK LABEL.

CLASS	1.1 1.2 1.5	1.3 1.6	1.4	2.1	2.2	2.3	3	4.1	4.2	4.3	5.1	5.2	6.1	6.2	7	8	9
Explosives 1.1, 1.2, 1.5	*	*	*	4	2	2	4	4	4	4	4	4	2	4	2	4	X
Explosives 1.3, 1.6	*	*	*	4	2	2	4	3	3	4	4	4	2	4	2	2	X
Explosives 1.4	*	*	*	2	1	1	2	2	2	2	2	2	X	4	2	2	X
Flammable gases 2.1	4	4	2	X	X	X	2	1	2	X	2	2	X	4	2	1	X
Non-toxic, non-flammable gases 2.2	2	2	1	X	X	X	1	X	1	X	X	1	X	2	1	X	X
Toxic gases 2.3	2	2	1	X	X	X	2	X	2	X	X	2	X	2	1	X	X
Flammable liquids 3	4	4	2	2	1	2	X	X	2	1	2	2	X	3	2	X	X
Flammable solids (including self-reactive substances and solid desensitized explosives) 4.1	4	3	2	1	X	X	X	X	1	X	1	2	X	3	2	1	X
Substances liable to spontaneous combustion 4.2	4	3	2	2	1	2	2	1	X	1	2	2	1	3	2	1	X
Substances which, in contact with water, emit flammable gases 4.3	4	4	2	X	X	X	1	X	1	X	2	2	X	2	2	1	X
Oxidizing substances (agents) 5.1	4	4	2	2	X	X	2	1	2	2	X	2	1	3	1	2	X
Organic peroxides 5.2	4	4	2	2	1	2	2	2	2	2	2	X	1	3	2	2	X
Toxic substances 6.1	2	2	X	X	X	X	X	X	1	X	1	1	X	1	X	X	X
Infectious substances 6.2	4	4	4	4	2	2	3	3	3	2	3	3	1	X	3	3	X
Radioactive material 7	2	2	2	2	1	1	2	2	2	2	1	2	X	3	X	2	X
Corrosive substances 8	4	2	2	1	X	X	X	1	1	1	2	2	X	3	2	X	X
Miscellaneous dangerous substances and articles 9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Segregation in CTUs

§7.3.4.1
§176.83(d)

Dangerous goods which have to be segregated from each other **shall not be transported in the same cargo transport unit** with the exception of dangerous goods which shall be segregated "away from" each other which may be transported in the same CTU with the approval of the competent authority.

Enforcement of U.S. Laws & International Treaties

Introduction

There are several enforcement actions a CG container inspector has available to achieve compliance. Understanding which actions are applicable and will contribute to the best desirable outcome is important to both safety of the port and equitability towards industry. This lesson will cover policy and procedures a CG Container Inspector may use to enforce violations under U.S. Laws and International Treaties

TPO

DETERMINE corrective actions for violations found during container inspections I.A.W. 33 CFR 126 & 160, 49 CFR 171 – 180 and 450 – 453, IMDG Code, and CIM 16616.11C.

Definitions

Devan or Devanning - means to unload the contents of a container

Deficiency - any condition, operation, or act that fails to meet acceptable standards including but not limited to those established by applicable international conventions, U. S. laws or regulations, industry standards, or equipment manufacturers' recommendations.

Letter of Warning (LOW) - a notification issued and filed as an administrative proceeding due to regulatory non-compliance. It serves as an informative document to the responsible party for discrepancy(s) found and may constitute history for future incidents.

Notice of Violation (NOV) - a citation that allows immediate notification to the responsible party of alleged violation(s) and the penalty proposed by the government. It allows the responsible party the option of accepting the proposed penalty and making direct payment to the treasury. The responsible party also has the option to decline the NOV and request that the alleged violation be processed for adjudication by the Coast Guard Hearing Office.

Operational Control - Control legally means to exercise restraining or directing influence over other parties. For purposes of this lesson control is any verbal or written law enforcement action by the COTP or representatives which requires compliance by responsible parties. Control may be exercised by bringing deficiencies to the attention of the responsible party and directing that corrective action be carried out through enforcement actions such as the initiation of "operational controls". IAW COMDT Instruction container inspectors may carry out the following operational controls:

- Detention "Hold", Re-Inspection Orders
 - Devanning
-

Enforcement of U.S. Laws & International Treaties (Cont.)

Definitions (Cont.)

Violation – is any deficiency resulting from a failure to meet applicable U.S. statutory or regulatory requirements where sufficient evidence exists to initiate administrative, judicial, or criminal proceedings (including suspension and revocation hearings, civil penalty hearings, and criminal prosecution) as appropriate.

Enforcement Actions

Enforcement actions presented during container inspections include, but are not limited to:

- Presence
 - Recognition of authority figure, non-verbal compliance
- Education
 - Preemptive compliance
- Correction on the spot
 - Non-administrative, no impact of safety or operation

The following are Administrative, Judicial or Criminal Proceedings and are identified further:

- Container/Shipment on hold
 - Letter of Warning
 - Notice of Violation
 - Violation Case
-

Enforcement of U.S. Laws & International Treaties (Cont.)

Container Holds and Re-Inspections

49 CFR 453.1
33 CFR 160.109

Applicable to Containers used in **International or Domestic transportation**, the following provides criteria for enforcing compliance of un-inspected and unsafe containers (Structural Serviceability defects):

1. **International**—Placing an **Container on Hold**: 49 CFR 453.1 (a/b)
 - a. Invalid safety approval plate
 - b. Valid safety approval plate, but in a condition that creates obvious risk to safety
 - c. Damage which exceeds criteria set forth in the 49 CFR, IMO Circ. or IICL-5 guide.

Placing a container on “hold” means taking a container out of service until corrective action can be taken to bring the container back into compliance.

Note: The contents of the container, if safety is not impacted, may be transloaded into another container for continuation of transport.

2. **International**—Requiring a **Re-inspection**: 49 CFR 452.1, 453.1(c)
 - a. Valid safety approval plate; but has not been periodically examined and marked

Note: Under 49 CFR 452 a required re-inspection does not constitute detention or removal from service. If re-inspection is required and a container is found reloaded and used or offered for movement in international transport 49 CFR 453.1(c) allows such a container to be removed from service until brought into compliance.

1. **Domestic**—Placing a **Container on Hold**: 33 CFR 160.109
 - a. Damage which exceeds criteria set forth in the 49 CFR, IMO Circ. or IICL-5 guide.

Note: ISCA does not cover domestic used containers; PWSA is used.

Shipment Holds

33 CFR 126.29
33 CFR 160.109
49 CFR 171-180

Applicable to Containers used in **Foreign or Domestic transportation** the following provides criteria for enforcing compliance of Container contents:

1. Shipment on Hold: 33 CFR 126.29 & 160.109, 49 CFR 171-180—cite used
 - a. Any cargo discrepancy(s) or other problems **NOT** involving serviceability of the container itself.

Enforcement of U.S. Laws & International Treaties (Cont.)

Letter of Warning

A LOW should serve as the first documented report of a violation for a party and may be processed if the following applies:

- Minor violation
 - First time offense
 - May be corrected immediately
-

Notice of Violation

The NOV program was developed to alleviate the cumbersome civil penalty process and streamline monetary proceedings. A NOV may be processed if the following applies:

- Total penalty amount does not exceed \$10,000
 - Eligible regulatory cite listed in NOV user guide
-

Violation Case

Container inspectors may initiate the civil penalty assessment process for all major (immediate and critical risk to lives, property or the environment) non-criminal violations, for repeat offenders, and any minor violations which are not corrected immediately by the responsible party.

Note: Most incidents encountered will present criteria which allows for either a NOV or violation case to be initiated. It is up to the Inspector and command policy to delineate between which action is appropriate.

Criminal Penalty

Criminal Penalties are assessed when a person willfully or recklessly violates a regulation:

Willful Violations – A person acts willfully when –

1. the person has knowledge of the facts giving rise to the violation; and
2. the person has knowledge that the conduct was unlawful

Reckless Violation – A person acts recklessly when the person displays a deliberate indifference or conscious disregard to the consequences of that persons conduct.

IMDG Enforcement 49 CFR 171.22(b)

49 CFR 171.22(a) allows certain hazardous materials shipments prepared in accordance with the IMDG Code to be transported within the United States. For civil penalty cases involving such IMDG Code shipments, both 49 CFR 171.22(b) and the corresponding 49 CFR discrepancy cite should be referenced.

Enforcement of U.S. Laws & International Treaties (Cont.)

Post-Deficiency Actions

1. Advise vessel or facility representative of corrective actions required and the allowable time frame for action.
2. Discuss any necessary interruption of cargo operations, possible holds, re-inspections, etc.

Note: It may be necessary for the actual shipper or owner of the container to be contacted to correct discrepancies. It is the responsibility of the facility (or other custodian of the container at the time of the inspection) to arrange for any required resolution of discrepancies, *however*, the Coast Guard can assist.

3. Complete Hazardous Material inspection report (CG-5577).
4. Enter data into MISLE

Sound Judgment and Fairness

Sound judgment must be used in employing appropriate enforcement actions. Based upon the seriousness, impact, duration, culpability etc. of the deficiency and sufficiency of evidence obtained, one or more appropriate enforcement actions may be initiated. No two situations are alike and the same deficiency or violation on different facilities may dictate different CG enforcement actions, depending upon variables including violation histories of the specific parties involved, differing circumstances and risks, quantity and quality of available evidence, etc. Thus, while the results of enforcement actions should be equivalent for similar circumstances, the methods used are not expected to be identical in all cases.

All enforcement actions must be directed toward those specific parties responsible for the deficiencies or alleged violations. Otherwise, target the party subject to the law or regulation who can most effectively bring about compliance or a remedy. Commanding officers retain ultimate responsibility for identifying responsible parties and initiating appropriate enforcement action. The level and type of enforcement action(s) initiated should be proportional to the seriousness of the deficiency or violation in terms of the impact or potential risk to lives, property or the environment.

This page has intentionally been left blank

Appendix A

Subpart A—General Provisions

§ 450.1 Purpose.

This subchapter establishes requirements and procedures for safety approval and periodic examination of cargo containers used in international transport, as defined in the International Safe Container Act. [45 FR 37213, June 2, 1980]

§ 450.3 Definitions.

(a) In this subchapter:

(1) *Approval Authority* means a delegate of the Commandant authorized to approve containers within the terms of the convention, the International Safe Container Act and this subchapter.

(2) *Container* means an article of transport equipment:

(i) Of a permanent character and suitable for a repeated use.

(ii) Specially design to facilitate the transport of goods, by one or more modes of transport, without intermediate reloading.

(iii) Designed to be secured and readily handled, having corner fittings for these purposes.

(iv) Of a size that the area enclosed by the four outer bottom corners is either:

(A) At least 14 sq.m. (150 sq.ft.), or

(B) At least 7 sq.m. (75 sq.ft.) if it has top corner fittings.

(v) The term *container* includes neither vehicles nor packaging; however, containers when carried on chassis are included.

(3) *Convention* means the International Convention for Safe Containers (CSC) done at Geneva, December 2, 1972 and ratified by the United States on January 3, 1978.

(4) *District Commander* means the Coast Guard officer designated by the Commandant to command a Coast Guard District.

(5) *New Container* means a container, the construction of which began on or after September 6, 1977.

(6) *Existing Container* means a container that is not a new container.

[45 FR 37213, June 2, 1980, as amended at 47 FR 50496, Nov. 8, 1982; 69 FR 58352, Sept. 30, 2004]

§ 450.5 General requirements and applicability.

(a) Every owner of a new or existing container used or offered for movement in international transport shall have the container approved in accordance with the procedures established by

the Administration of any contracting party to the convention, except that existing containers need not be approved until September 6, 1982.

(b) Every owner of an approved container used or offered for movement in international transport who:

(1) Is domiciled in the United States and has the head office in the United States, or

(2) Is domiciled in a country which is not a contracting party to the convention but has the principal office in the United States, shall have the container periodically examined in accordance with part 452 of this subchapter.

(c) Every owner of an approved container used or offered for movement in international transport who:

(1) Is domiciled in the United States but has the principal office in the jurisdiction of another contracting party to the convention, or

(2) Is domiciled in the jurisdiction of another contracting party to the convention but has the principal office in the United States, but elects to have the container examined in accordance with the procedures prescribed by the United States, shall conform to part 452 of this subchapter.

(d) Every owner of an approved container used or offered for movement in international transport who is neither domiciled in nor has the principal office in the jurisdiction of a contracting party to the convention, but elects to have the container examined in accordance with procedures prescribed by the United States, shall conform to part 452 of this subchapter.

[45 FR 37213, June 2, 1980]

§ 450.7 Marking.

(a) On each container that construction begins on or after January 1, 1984, all maximum gross weight markings on the container must be consistent with the maximum gross weight information on the safety approval plate.

(b) On each container that construction begins before January 1, 1984, all maximum gross weight markings on the container must be consistent with the gross weight information on the safety approval plate no later than January 1, 1989.

(Approved by the Office of Management and Budget under OMB control number 1625-0024)

[49 FR 15562, Apr. 19, 1984, as amended at 71 FR 55747, Sept. 25, 2006]

Subpart B—Procedure for Delegation to Approval Authorities

§ 450.11 Application for delegation of authority.

(a) Any person or organization seeking delegation of authority to act as an Approval Authority may apply to the Commandant, (CG-OES), U.S. Coast Guard, 2100 2nd St., SW., Stop 7126, Washington, DC 20593-7126. Each application must be signed and certified by the applicant or, if the applicant is an organization, by an authorized officer of the organization. A list of delegated approval authorities may be obtained from the Commandant (CG-522).

(b) The application must include the following information:

(1) Name and address, including place of incorporation, if a corporation.

(2) A description of the organization, including the ownership, managerial structure, organizational components and directly affiliated agencies and their functions utilized for supporting technical services.

(3) A listing of the basic technical services offered.

(4) A general description of the geographic area served.

(5) A general description of the clients being served or intended to be served.

(6) A description of the types of work performed by the applicant in the past, noting the amount and extent of such work performed within the previous three years.

(7) A description of the personnel to be utilized, indicating general background and qualifications, particularly for the surveyors to be involved in the actual witnessing of tests.

(8) A description of its means of assuring continued competence of its personnel.

(9) A detailed schedule of the fees proposed to be charged for the approval service.

(10) Evidence of financial stability.

(11) At least three business references who will furnish information regarding work performed by the applicant.

(12) A statement that the Coast Guard may inspect the applicant's facilities and records of approvals under the convention and these regulations.

(c) The application may contain any additional information the applicant deems to be pertinent.

(d) The applicant must furnish any additional information to evaluate the applicant's

qualifications, if requested by the Chief, Office of Operating and Environmental Standards (CG-OES), U.S. Coast Guard.

(e) Applications from foreign nationals or organizations must contain an affidavit stating that the agency responsible for implementing the Convention in their country has delegated to the applicant an approval authority, and that it also delegates similar authority to United States citizens or organizations having delegations from the United States. The affidavit must also contain the name and address of the agency to which U.S. citizens or organizations must apply for delegation as an approval authority.

[45 FR 37213, June 2, 1980, as amended at 47 FR 50496, Nov. 8, 1982; 69 FR 58352, Sept. 30, 2004; 74 FR 49241, Sept. 25, 2009]

§ 450.12 Criteria for selection of Approval Authorities.

(a) The Chief, Office of Operating and Environmental Standards (CG-OES), U.S. Coast Guard selects persons or organizations in accordance with the following criteria:

(1) The person or organization is independent of manufacturers and owners in that:

(i) It has sufficient breadth of interest or activity, so that the loss or award of a specific contract to approve containers would not be a substantial factor in the financial well-being of the organization.

(ii) The employment status of the personnel of the organization is free from influence or control of manufacturers, owners, operators or lessors of containers.

(2) The person or organization has demonstrated the ability to competently carry out the procedures required for approval.

(3) The person or organization has an acceptable degree of financial security.

[45 FR 37213, June 2, 1980, as amended at 47 FR 50496, Nov. 8, 1982; 69 FR 58352, Sept. 30, 2004]

§ 450.13 Granting of delegation.

(a) The Chief, Office of Operating and Environmental Standards (CG-OES), U.S. Coast Guard acts on applications for delegation within 60 days of receipt.

(b) If an applicant for delegation does not provide sufficient information with regard to all the criteria for delegation, the Chief, Office of Operating and Environmental Standards (CG-OES), U.S. Coast Guard denies the application. A denial of an application on

Subpart A—Approval of Existing Containers

§ 451.1 Application for approval.

(a) Any owner of an existing container may apply for approval to the Commandant (CG-OES), U.S. Coast Guard, 2100 2nd St., SW., Stop 7126, Washington, DC 20593-7126 or to any Approval Authority.

(b) Each application must include the following for each container:

(1) Date and place of manufacture.

(2) Manufacturer's identification number, if available.

(3) Maximum operating gross weight capacity.

(4) Allowable stacking weight for 1.8G (1.8×Gross weight in kilograms or pounds).

NOTE: This value is the total load the container is designed to support when subjected to a vertical acceleration of 1.8G.

(5) A statement that the owner possesses documentary evidence that:

(i) Container of this type has been safely used in marine or inland transport for a period of at least two years; or

(ii) The container was manufactured to a design type which had been tested and found to comply with the technical conditions set out in Annex II to the convention with the exception of those technical conditions relating to the end-wall and side-wall strength tests; or

(iii) The container was constructed to standards that were equivalent to the technical conditions set out in Annex II to the convention with the exception of those technical conditions relating to end-wall and side-wall strength tests.

(6) A certification by the owner, or, if the owner is a corporation, partnership or unincorporated association, by a person authorized to make such statements for the organization, that the information provided in the application is true and correct.

[45 FR 37214, June 2, 1980, as amended at 47 FR 50496, Nov. 8, 1982; 69 FR 58352, Sept. 30, 2004; 74 FR 49241, Sept. 25, 2009]

§ 451.3 Action by Approval Authority.

(a) The Approval Authority (or the Chief, Office of Operating and Environmental Standards (CG-OES), U.S. Coast Guard, if the application was submitted to the Coast Guard) issues to the owner a notice of approval or notifies the owner in writing that approval is denied, setting forth the deficiencies causing denial. Notification of approval entitles the owner to affix a safety approval plate to each

container after an examination of each container concerned has been carried out in accordance with part 452 of this subchapter. In the case of an application submitted to the Coast Guard, the Chief, Office of Operating and Environmental Standards (CG-OES), U.S. Coast Guard acts on the application within 30 days of receipt of the application.

[45 FR 37214, June 2, 1980, as amended at 47 FR 50496, Nov. 8, 1982; 69 FR 58352, Sept. 30, 2004]

§ 451.5 Resubmission or appeal.

(a) Upon receipt of a denial of approval for certain containers, an owner may correct the noted deficiencies and resubmit the application without prejudice.

(b) An applicant aggrieved by a decision of an approval authority may obtain review of the decision by the Chief, Office of Operating and Environmental Standards (CG-OES), U.S. Coast Guard. The decision of the Chief, Office of Operating and Environmental Standards (CG-OES), U.S. Coast Guard is a final agency action.

[45 FR 37214, June 2, 1980, as amended at 47 FR 50496, Nov. 8, 1982; 69 FR 58352, Sept. 30, 2004]

§ 451.7 Alternative approval of existing containers.

(a) Existing containers that do not qualify for approval under this subpart may be presented for approval under the provisions of subpart B of this part. For such containers, the requirements of subpart B of this part, relating to the end and sidewall strength tests, do not apply. Upon showing that the containers have performed satisfactorily in service, the applicant may omit the presentation of drawings and testing, other than the lifting and floor strength test, if permitted by the approval authority.

[45 FR 37214, June 2, 1980, as amended at 69 FR 58352, Sept. 30, 2004]

Subpart B—Approval of New Containers

§ 451.11 Application for approval-general.

(a) An owner of a new container, or a manufacturer acting on behalf of an owner, may apply for approval to any approval authority.

§ 451.12 Application for approval by design type.

(a) For approval of new containers by design type, each application must include the following:

(1) Engineering drawings and plans showing platform, end framing, welds and hardware, connections of cross-members, top and bottom rails, roof bows, detailed subassemblies of major structural components and attachments, and any other plans and drawings required by the approval authority.

(2) Design and material specifications including type and size of materials. Material specifications of the safety approval plate must also be given.

(3) The manufacturer's identification number assigned to each container in the type series.

(4) The identification code assigned to each container in the series by the owner, lessee, or bailee responsible for maintenance.

(5) The written assurance from the manufacturer, that the manufacturer will:

(i) Produce to the approval authority such containers as the approval authority may wish to examine;

(ii) Advise the approval authority of any change in the design or specification and await its approval before affixing the Safety Approval Plate to the container;

(iii) Affix the Safety Approval Plate to each container in the design type and to no others;

(iv) Keep a record of containers manufactured to the approved design type containing at least the manufacturer's identification numbers, date of delivery, and names and addresses of customers to whom the containers are delivered; and

(v) Supply to the approval authority the information contained in paragraphs (a)(3) and (4) of this section if not available at the time of original application.

(6) A statement as to whether this design type has been examined by any approval authority previously and judged unacceptable. Affirmative statements must be documented with the name of the approving authority, the reason for nonacceptance, and the nature of modifications made to the design type.

[45 FR 37214, June 2, 1980, as amended at 69 FR 58353, Sept. 30, 2004]

§ 451.13 Action by approval authority-approval by design type.

(a) The approval authority arranges with the manufacturer, with notification to the owner, to witness the prototype tests required by the convention, and to examine any number of containers that the approval authority considers appropriate. Upon witnessing successful completion of prototype tests and examination of

several containers the approval authority issues to the owner, a notice of approval which authorizes the attachment of safety approval plates to the containers. Absence of individual inspections will not relieve the manufacturer of any responsibility to maintain proper quality control. If a prototype container fails to pass the tests, the approval authority may require testing of as many further representative containers as necessary to ensure the adequacy of the design.

§ 451.14 Alternative approval of new containers by design type.

(a) New containers manufactured before June 16, 1978 without being approved under the preceding section may be approved by submission to an approval authority of an application corresponding to that required under § 451.1(b) for existing containers. All new containers so approved must have safety approval plates affixed and receive their first periodic examination in accordance with the procedures prescribed in § 452.3 by January 1, 1985.

[47 FR 50496, Nov. 8, 1982]

§ 451.15 Application for individual approval.

(a) For approval of new containers by individual approval, each application must include the following:

(1) The manufacturer's identification number.

(2) The identification code of the owner, lessee, or bailee responsible for maintenance of the container.

§ 451.16 Action by approval authority-individual approval.

(a) The approval authority arranges with the manufacturer or owner to witness testing in accordance with Annex II to the convention. Upon witnessing successful completion of the tests, the approval authority issues to the owner a notice of approval that authorizes the attachment of a safety approval plate.

§ 451.18 Review of denials of approval.

(a) An applicant aggrieved by a decision of an approval authority may obtain review of the decision by the Chief, Office of Operating and Environmental Standards (CG-OES), U.S. Coast Guard. The decision of the Chief, Office of Operating and Environmental Standards (CG-OES), U.S. Coast Guard is a final agency action. [45 FR 37214, June 2, 1980, as amended at 47 FR 50496, Nov. 8, 1982; 69 FR 58353, Sept. 30, 2004]

Subpart C—Safety Approval Plate

§ 451.21 Safety approval plate required.

(a) The safety approval plate must be supplied by the owner or manufacturer.

§ 451.23 Plate specifications.

(a) The safety approval plate must be of the size and in the format specified in the appendix to Annex I to the convention.

(b) The safety approval plate must be:

(1) Designed to withstand and remain legible after a 15 minute exposure to a medium intensity fire producing a temperature of 1,000 °F (540 °C), when mounted on the specified material of construction of the container.

(2) Designed to resist the corrosive effects of its environment, both at sea and ashore, so as to remain legible for the working life of the container.

(3) Designed to have a legible life expectancy equal to or greater than the life expectancy of the container to which the plate is affixed.

§ 451.25 Required information.

(a) The safety approval number appearing on line 1 of the safety approval plate must be of the form “USA/(approval number, which includes the approval authority identification code)/(year in which approval was granted).”

(b) The date upon which approval was granted must be the same for all containers of a design-type or type-series covered by one notice of approval.

(c) The safety approval number must be the same for all containers of a design-type or type-series covered by one notice of approval.

(d) The owner's International Organization for Standardization (ISO) alpha numeric identification numbers may be used in place of the manufacturer's identification numbers on line 3 of the safety approval plate. If owner's identification numbers are used and the manufacturer's are available, the owner shall keep records correlating the owner's identification numbers used with the manufacturer's number. If a container marked with owner's identification numbers changes ownership, and the owner's identification number is changed as a result, the new owner must add the new owner's identification number, following the original owner's identification number on line 3 of the safety approval plate. In the event that the new owner's identification number cannot be

legibly added to line 3 of the safety approval plate following the original owner's identification number, the new owner is authorized to put a new safety approval plate on the freight container provided that all the information contained on the original safety approval plate is retained in the owners files.

§ 452.1 Periodic examination required.

(a) Except as provided for in § 452.7, each owner of an approved container subject to this part shall examine the container or have it examined in accordance with the procedures prescribed in § 452.3 at intervals of not more than 30 months, except that for containers approved as new containers, the interval from the date of manufacture to the date of the first examination must not exceed five years. For containers approved, examined and plated as existing containers before January 1, 1985 and containers approved and plated as new containers before January 1, 1985, the subsequent examination must be carried out in accordance with the following schedule:

Date of initial plating	Subsequent examination
Existing containers before Sept. 30, 1981 and new containers before Dec. 31, 1978	Before Jan. 1986.
Existing containers between Oct. 1, 1981 and Sept. 30, 1982 and new containers between Jan. 1, 1979 and Dec. 31, 1979	Before May 1986.
Existing containers between Oct. 1, 1982 and Sept. 30, 1983 and new containers between Jan. 1, 1980 and Dec. 31, 1980	Before Sept. 1986.
Existing containers between Oct. 1, 1983 and Dec. 31, 1984 and new containers between Jan. 1, 1981 and Dec. 31, 1981	Before Jan. 1987.

NOTE: Containers plated under § 451.14 are considered existing containers in the above schedule.

(b) Upon completion of an examination required by this part, the owner shall mark on the safety approval plate, or on the container itself as close as practicable to the safety approval plate, the month and year before which the container must next be examined. This marking must be on all containers by January 1, 1987. The marking may be by a decal, sticker, stencil, or other means so long as it is capable of remaining legible for at least 24 months. Affixing such a

marking to a container that has not been examined in accordance with § 452.3 constitutes a misrepresentation in a matter within the jurisdiction of an agency of the United States, and makes the owner punishable under 18 U.S.C. 1001.

(c) The owner of containers subject to this section shall have those containers examined in accordance with the program prescribed in this section regardless of whether the examinations are preformed within or outside the United States.

[45 FR 37216, June 2, 1980, as amended at 47 FR 50496, Nov. 8, 1982; 49 FR 15562, Apr. 19, 1984; 69 FR 58353, Sept. 30, 2004]

§ 452.3 Elements of periodic examinations.

(a) Periodic examinations required by § 452.1 must conform to the following minimum requirements:

(1) Each examination must include a detailed visual inspection for defects such as cracks, failures, corrosion, missing or deteriorated fasteners, and any other safety related deficiency or damage which could place any person in danger. Any such deficiencies disclosed by the examination must be corrected by the owner before the container is continued in service.

(2) Each examination must take into account the particular characteristics of various kinds of containers and materials of construction.

(3) Each examination must be performed by qualified personnel, trained and experienced in the detection of container structural damage.

(4) The examinations must be scheduled so as to allow adequate time for thorough performance.

(5) Each examination must apply owner established or industry accepted pass/fail criteria to determine whether a container has any deficiency that must be remedied before the container is returned to service.

(b) Examinations must be documented, and the records retained by the owner, until the next examination is completed and recorded. The records must include, in addition to identification of the container, a record of the date of last examination and a means of identifying the examiner. The records must be maintained in an office under the control of the owner and be made available for inspection by the Coast Guard upon demand. If the original records are maintained outside the United States, its territories or possessions, supplementary records must be available in written or data processing

form to be produced on demand of the Commandant or his representative.

[45 FR 37216, June 2, 1980; as amended at 69 FR 58353, Sept. 30, 2004]

§ 452.5 Examinations made in conjunction with other inspections.

(a) Periodic examinations may be made in conjunction with or as part of routine change-of-custody inspections, or in any other manner convenient to the owner so long as the examinations conform to the requirements of § 452.3.

[45 FR 37216, June 2, 1980]

§ 452.7 Continuous examination program.

(a) In lieu of a periodic examination under § 452.1, each owner of an approved container meeting § 450.5 may examine the container or have it examined using an approved continuous examination program. An owner must submit the continuous examination program for approval to the Commandant (CG-OES), United States Coast Guard, 2100 2nd St. SW., Stop 7126, Washington, DC 20593-7126. When submitting a continuous examination program for approval the owner must show the continuous examination complies with § 452.9.

(b) The owner must mark the container with the letters "ACEP/USA/(year continuous examination program is approved)" to indicate the container is being periodically examined under an approved continuous examination program. This marking must be as close as practicable to the safety approval plate. This marking must be on all containers covered by a continuous examination program by January 1, 1987.

(c) The owner of containers subject to this section shall have those containers examined in accordance with the program prescribed in this section regardless of whether the examinations are performed within or outside the United States.

(The information collection requirements contained in paragraphs (a) and (b) have been approved by the Office of Management and Budget under OMB control number 1625-0024)

[49 FR 15562, Apr. 19, 1984, as amended at 69 FR 58353, Sept. 30, 2004; 74 FR 49241, Sept. 25, 2009; 74 FR 49241, Sept. 25, 2009; 77 FR 59790, Oct. 1, 2012]

§ 452.9 Elements of a continuous examination program.

(a) Examinations required by § 452.7 must conform to the following minimum requirements:

(1) A thorough examination that must include a detailed visual inspection for defects such as cracks, failures, corrosion, missing or deteriorated fasteners, and any other safety related deficiency or damage that could place any person in danger. Any such deficiencies disclosed by the examination must be corrected by the owner before the container is continued in service. A thorough examination must be done each time a container undergoes a major repair, refurbishment or on-hire/off-hire interchange. In no case is the time period between thorough examinations to exceed 30 months.

(2) Each thorough examination must be performed by qualified personnel, trained and experienced in the detection of container structural damage.

(3) Each thorough examination must apply owner established or industry accepted pass/fail criteria to determine whether a container has any deficiency that must be remedied before the container is returned to service.

(b) Thorough examinations must be documented, and the records retained by the owner, until the next examination is completed and recorded. The records must include, in addition to identification of the container, a record of the date of last examination and a means of identifying the examiner. The records must be maintained in an office under the control of the owner and be made available for inspection by the Coast Guard upon demand. If the original records are maintained outside the United States, its territories or possessions, supplementary records must be available in written or data processing form to be produced on demand of the Commandant or his representative.

(The information collection requirements contained in paragraph (b) have been approved by the Office of Management and Budget under OMB control number 1625-0024) [49 FR 15562, Apr. 19, 1984, as amended at 69 FR 58353, Sept. 30, 2004]

§ 453.1 Unsafe and noncomplying containers subject to detention or control.

(a) Any container used in or offered for movement in international transport which does not have a valid safety approval plate attached to it is subject to detention or other control by a District Commander or Captain of the Port.

However, upon receipt of evidence that a container which does not have a valid safety approval plate attached to it meets the standards of the convention, the District Commander or Captain of the Port may authorize limited movement of such container under conditions he deems appropriate. This paragraph becomes effective on January 3, 1979 for new containers and on January 1, 1985 for existing containers.

(b) If a District Commander or Captain of the Port finds that a container used in or offered for movement in international transport, even though it has a valid safety approval plate attached to it, is in a condition that creates an obvious risk to safety, he issues a detention order causing the container to be removed from service until it is restored to a safe condition. In addition to removing a container from transport, a detention order may require any special handling, including unloading prior to movement, necessary to ensure safety.

(c) If a District Commander or Captain of the Port finds that a container used or offered for movement in international transport has not been timely examined, the District Commander or Captain of the Port affixes to the container, at a place on the container where it will be readily noticeable to anyone loading or unloading the container, a mark or tag indicating that the container must be examined before being reloaded and again used in international transport. The mark or tag affixed by the District Commander or Captain of the Port indicates the place and the date on which it was affixed, and is capable of remaining legible and in place for at least 12 months. Such mark or tag must not be removed until the container is examined in accordance with § 452.3 of this subchapter. If a District Commander or Captain of the Port finds that container marked or tagged as provided for in this paragraph was reloaded and used or offered for movement in international transport without having been examined, the District Commander or Captain of the Port issues a detention order causing the container to be removed from service until it is brought into compliance.

[45 FR 37217, June 2, 1980, as amended at 47 FR 50496, Nov. 8, 1982]

§ 453.3 Detention orders and other orders.

(a) The terms of any detention order or other order issued under § 453.1, to the maximum extent practicable, make provisions to avoid loss or damage to cargo.

(b) Written notice of any detention order or other order issued under § 453.1 is given immediately to the terminal operator, stevedore, or other person having actual control over the container involved. Prompt notification is also given to the owner of the container, or his agent. The notification identifies the container involved, its location, and describes the condition which gave rise to the order.
[45 FR 37217, June 2, 1980]

Guard acts on all appeals within ten days of receipt.

[45 FR 37217, June 2, 1980, as amended at 47 FR 50496, Nov. 8, 1982; 69 FR 58353, Sept. 30, 2004; 77 FR 59790, Oct. 1, 2012]

§ 453.5 Termination of detention orders and other orders.

(a) When a container, which is the subject of a detention order or other order, is restored to a safe condition or otherwise brought into compliance, it must be examined in accordance with § 452.3 and a new re-examination date marked on the container in accordance with § 452.1(b) of this subchapter.

(b) The owner or the owner's agent shall notify the District Commander or Captain of the Port who issue the order, in writing, that the container has been brought into compliance. Upon giving such notice, the owner, or his agent, may return the container to service.

[45 FR 37217, June 2, 1980]

§ 453.7 Appeal provisions.

(a) The owner, his agent, or the custodian of a container subject to a detention order or other order, may petition the Chief, Office of Operating and Environmental Standards (CG-OES), U.S. Coast Guard to review that order.

(b) The Chief, Office of Operating and Environmental Standards (CG-OES), U.S. Coast Guard requires independent surveys to determine the extent of deficiencies, if necessary. Upon completion of his review, including review of the results of any required independent surveys, the Chief, Office of Operating and Environmental Standards (CG-OES), U.S. Coast Guard affirms, sets aside, or modifies the order.

(c) The owner of a container is liable for any costs incident to a petition for review including any independent surveys, and for any other costs incident to or resulting from detention or other control of a container.

(d) Unless otherwise determined by the Chief, Office of Operating and Environmental Standards (CG-OES), U.S. Coast Guard, a detention order or other order remains in effect pending the outcome of any petition or appeal of that order.

(e) The Chief, Office of Operating and Environmental Standards (CG-OES), U.S. Coast