

SECTION E: INTERNATIONAL CONVENTIONS, TREATIES, STANDARDS, AND REGULATIONS**CHAPTER 1: MARPOL 73/78 VESSEL REQUIREMENTS****A. INTRODUCTION**

In 1973, the International Maritime Organization (IMO) adopted the International Convention for the Prevention of Pollution by Ships and subsequently modified it by Protocol in 1978. The Convention is known as MARPOL 73/78. Its objective is to limit shipborne pollution by restricting operational pollution and reducing the possibility of accidental pollution. Acceptance of the convention by national government obliges them to make the requirements part of domestic law.

MARPOL 73/78 consists of five separate annexes, each of which is designed to combat a particular class of pollutants. The five annexes are:

Regulations for the Prevention of Pollution from Ships, MARPOL 73/78	
Annex	Title
I	Regulations for the Prevention of Pollution by Oil
II	Regulations for the Control of Pollution by Noxious Liquid Substances (chemicals) in bulk
III	Regulations for the Prevention of Pollution by Harmful Substances in Packaged Form
IV	Regulations for the Prevention of Pollution by Sewage from Ships
V	Regulations for the Prevention of Pollution by Garbage from Ships
NOTE: Ship-generated garbage includes what we normally call trash.	

The United States has ratified Annexes I and II (both mandatory for nations party to the convention and already in force internationally), III, and V. Annexes III, IV, and V are the optional annexes, which require separate ratification by nations signatory to MARPOL 73/78. Each optional annex enters into force one year from the date on which at least fifteen nations, representing fifty percent of the world's shipping tonnage, have ratified them. Annex V entered into force on December 31, 1988, and Annex III on July 1, 1992. Annex IV has not met the tonnage requirement and is not yet scheduled to enter into force.

Information on MARPOL 73/78 or any other international maritime treaties, as well as country codes and signatory status, can be found in the MSIS International Maritime Entry Index product set (IMEI).

The guidance and instructions contained in this chapter describe the procedures to be followed by boarding officers for MARPOL 73/78. The enforcement guidance for MARPOL 73/78 Annex I discrepancies discovered during boardings is provided in Volume I, Chapter 4 of the Marine Safety Manual.

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In-port inspections and examinations are the primary enforcement tool for detecting violations and ensuring MARPOL 73/78 compliance. Ships with MARPOL 73/78 discrepancies may be boarded a second time to ensure correction of the deficiency. Ships suspected of discharge violations shall be designated for high priority boarding at their first U.S. port of call.

A strong, fair, and consistent enforcement program is essential if MARPOL 73/78 is to achieve its goal of significantly reducing marine pollution from ships. To encourage ships to comply with MARPOL 73/78 requirements, the United States has set forth in the Act to Prevent Pollution from Ships (APPS) (33 U.S.C. 1901 et seq.) a civil penalty of not more than \$25,000 for each violation. MARPOL 73/78 deficiencies discovered during a boarding shall be immediately reported to the ship's master or owner's representative. Additionally, for foreign flag ships immediately notify the consul or diplomatic representative of the flag country if the ship is to be denied further entry to port, if the ship is detained in port for twelve (12) hours or more, or if the ship does not have a valid IMO certificate or equivalent. A record of the notification should be maintained and the notification should state the specific offense, the corrective actions necessary, and the anticipated enforcement actions. See MSM II.D.2 for detailed guidance on how to exercise control of foreign vessels.

Each Marine Safety Office (MSO) should designate one person whose first and foremost responsibility will be to coordinate all MARPOL 73/78 activities. This MARPOL coordinator will oversee enforcement for Annexes I, II, III, and V and carry out the following functions:

1. Liaison

Maintain liaison with the following groups and ensure each is aware of its responsibilities with respect to MARPOL 73/78:

- U.S. Department of Agriculture Animal and Plant Health Inspection Service (APHIS) and Plant Protection and Quarantine (PPQ) personnel;
- Facility Managers;
- Port Authorities;
- Shipping Agents;
- Reception Facilities;
- Marina Owners/Operators;
- Reservists;
- Auxiliaries;
- Local CG Group and Station personnel; and
- National Marine Fisheries Service personnel.

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2. **Unit Activity** Keep apprised of all MARPOL 73/78 activity for the unit including inspections, investigations and port operations activities.

3. **Compliance** Ensure that boarding officers are, during the normal course of their vessel inspections, checking for compliance with MARPOL and that this is noted in their inspection books. No less than quarterly, accompany personnel on boardings and facility inspections to ensure appropriate actions are being taken to measure compliance.

4. **Violations** Ensure that all MARPOL violations are properly entered into MSIS, and that any possible violation is thoroughly and accurately investigated and documented. Information on suspected violators for which insufficient evidence to support a violation is obtained should also be entered so that suspected violators can be flagged by other ports as possible sources of noncompliance.

5. **Interaction** Maintain positive and proactive interaction with APHIS and PPQ inspectors. When resources allow, these inspectors board every vessel arriving from a foreign port and are an extremely valuable resource to the MARPOL enforcement program. Conduct periodic MARPOL training at local APHIS offices. Ensure that inspectors are aware of the Coast Guard's interest in MARPOL V compliance and the importance of notifying the Coast Guard of possible violations and sending any evidence of noncompliance to the Coast Guard unit as soon as possible. Every four to six months, spend a day conducting vessel boardings with local inspectors to observe their procedures.

6. **Facility Certificates of Adequacy (COA)** Reexamine all waterfront facilities within the area and determine which are required to have a Certificate of Adequacy (COA) for each annex and whether the facility holds a valid COA. Maintain an updated list of those facilities holding COAs. Keep on file the most current Federal Register which lists reception facilities for reference.

7. **Frequency of Inspections** Ensure that all facilities holding a valid COA are inspected biannually to verify that the conditions claimed in the COA application are still valid. Problem facilities should be visited more frequently. All visit results should be recorded within MSIS with violations linked to the facility and the involved parties.

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- 8. Facility Disposal Methods** Know each facility in the port - its waste disposal capability, shoreside disposal capability, methods for handling APHIS regulated waste, COA requirements, etc. Be responsive to reports of inadequacy by vessels. Thoroughly investigate the circumstances and take corrective action. Be aware of facility fees and overcharging for disposal services. Incidents of overcharging should be documented and reported to Headquarters via the district.
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- 9. Unit Training** Conduct periodic unit training on MARPOL requirements, enforcement procedures, compliance and effective civil penalty case preparation. Invite APHIS inspectors to speak. Maintain good working relationship with your APHIS district representative, who is a good source of information regarding developing cases and providing sufficient evidence to support a violation.
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- 10. Education / Training** Establish communication with and provide education/training for boating groups, fishing associations, Coast Guard Auxiliarists, National Marine Fisheries Service personnel and state enforcement agencies. Training should also be provided for the local Coast Guard group, small boat stations and cutters so that personnel will be able to recognize MARPOL violations, collect case evidence and educate mariners on discharge restrictions.
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Annexes I, II and V have been incorporated into U.S. law by the Act to Prevent Pollution From Ships. This Act requires the Coast Guard to draft regulations and enforce the provisions of these MARPOL 73/78 Annexes. The regulations are contained in 33 CFR 151 for inspected vessels and 46 CFR for uninspected vessels. The regulations spell out specific ship-generated discharge restrictions for all vessels operating on all waters subject to U.S. jurisdiction. For U.S. vessels, the regulations apply wherever the vessel is operating. Regulations for reception facilities are contained in 33 CFR 158. Annex III was implemented by The Hazardous Materials Transportation Act (HMTA). The regulations are contained in 49 CFR 171, 172, 173, 174, and 176 for Harmful Substances Carried by Sea in Packaged Form or in Freight Containers, Portable Tanks or Road and Rail Tank Wagons. The regulations list the criteria for the designation, description, and classification of those hazardous materials.

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C. DEFINITIONS

The following definitions are provided to assist in understanding the terminology associated with the regulatory requirements for enforcing the provisions of MARPOL 73/78. Where the words being defined are enclosed by quotation marks ("..."), the definitions are quoted directly from applicable statutes, international conventions, or regulations. The appropriate citation is provided in brackets []. Headings without quotation marks do not have a referenced citation. "CFR" stands for Code of Federal Regulations, and "U.S.C." stands for United States Code.

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|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Adequate Reception Facility | "Adequate reception facility" means each facility certified as adequate under 33 CFR 158.160 and each facility provided by an administration signatory to MARPOL 73/78 under Regulation 7 of Annex II. [46 CFR 153.2] |
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| 2. Administration | "Administration" means the Government of the state under whose authority the ship is operating. For fixed or floating platforms engaged in exploration and exploitation of the coastal seabed and subsoil, the Administration is the Government of the coastal state exercising sovereign rights for the purpose of exploration and exploitation of their natural resources. [Art. 2(5) MARPOL 73/78] |
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| 3. Animal and Plant Health Inspection Service (APHIS) | Animal and Plant Health Inspection Service (APHIS) operates under the Department of Agriculture. Its local officers board U.S. and foreign vessels upon arrival at U.S. ports to enforce the sanitation and health regulations with regard to foreign food and plants. These officers are known as Plant Protection and Quarantine (PPQ) officers. |
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| 4. Ash and Clinkers Handling | Ash and clinkers are the by-product of shipboard incinerators and coal-burning boilers and are considered operational wastes. The term clinker can also be used to refer to plastic residue or pieces which have not been fully reduced to ash by incineration or barrel burning. Plastic clinkers shall be treated as plastic and retained aboard ship for discharge at port reception facilities. |
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5. **Built** "Built" means that a ship's construction has reached any of the following stages:
 - a. The keel is laid.
 - b. The mass of the partially assembled ship is 50,000 kg.
 - c. The mass of the partially assembled ship is one percent of the estimated mass of the completed ship. [46 CFR 153.2]

6. **Cargo Associated Wastes** "Cargo associated wastes" means all materials which have become wastes as a result of use on board ship for cargo stowage and handling. Cargo associated wastes include, but are not limited to dunnage, shoring, pallets, lining and packing materials, plywood, paper, cardboard, wire, and steel strapping. [33 CFR 151.05]

7. **Cargo Residue and Sweepings** Cargo residues or sweepings are defined as the remnants of any cargo material on board that cannot be placed in proper cargo holds (loading excess or spillage) or which remain in cargo holds and elsewhere after unloading procedures are completed (unloading residual and spillage). However, cargo residues are expected to be in small quantities. They are to be treated as garbage under Annex V and subject to the same restrictions, except when those residues or sweepings are substances defined or listed under the other annexes to the MARPOL convention.

8. **Certificate of Adequacy (COA)** "Certificate of Adequacy (COA)" means a document issued by the Coast Guard or other authorized agency that certifies a port or terminal meets the requirements of this part with respect to reception facilities under the Act (to Prevent Pollution from Ships (33 U.S.C. 1901 et seq.)) and MARPOL 73/78, and has Form A, Form B, or Form C attached. [33 CFR 158.120]

9. **Commercial Fishing Facility** "Commercial fishing facility" means docks, piers, processing houses or other facilities which receive commercial fishery products from ships. [33 CFR 158.120]

10. **Daily Vessel Average** "Daily vessel average" means the total number of oceangoing tankers, or any other oceangoing ships of 400 gross tons or more, carrying residues and mixtures containing oil, serviced over a typical continuous 12 month period, divided by 365. [33 CFR 158.120]

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- 11. Discharge** "Discharge" as defined by MARPOL 73/78 in relation the harmful substances or effluent containing such substances, means any release, however caused from a ship, and includes any escape, disposal, spilling, leaking, pumping, emitting or emptying. It does not include:
- a. Dumping within the meaning of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter, done at London on November 13, 1972; or
 - b. Release directly arising from the exploration, exploitation, and associated offshore processing of seabed mineral resources; or
 - c. Release for purposes of legitimate scientific research into pollution abatement or control. [33 CFR 151.05]
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- 12. Dishwater** "Dishwater" means the liquid residue from the manual or automatic washing of dishes and cooking utensils which have been pre-cleaned to the extent that any food particles adhering to them would not normally interfere with the operation of automatic dishwashers. [33 CFR 151.05]
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- 13. Equivalent** Equivalent means an alternative for a fitting, material, appliance or apparatus allowed by the Administration which at a minimum is as effective as the MARPOL 73/78 requirement. An equivalent shall not include the substitution of an operational method to effect the control of discharge of oil for design and construction features required by MARPOL 73/78.
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- 14. Existing Ship** "Existing ship" means any ship which is not a "new ship." [33 CFR 151.05]
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- 15. Form A** "Form A" means the application for a reception facility Certificate of Adequacy for Oil, as approved by OMB, Coast Guard Form USCG-CG-5401(A)(9-85). [33 CFR 158.120] (OMB Approval No. 2415-D543) Form A is also an IOPP supplement.
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- 16. Form B** "Form B" means the application for a reception facility Certificate of Adequacy for NLS, Coast Guard Form USCG-CG-5401(B)(2-87). [E1 CFR 158.120] (as approved by OMB). Form B is also an IOPP supplement.
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- 17. Form C** "Form C" means the application for a Certificate of Adequacy for a Reception Facility for Garbage, Coast Guard Form USCG-CG-5401(C). [33 CFR 158.120]
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- 18. Garbage** "Garbage" means all kinds of victual, domestic and operational waste, excluding fresh fish and parts thereof, generated during the normal operation of the ship and liable to be disposed of continuously or periodically, except dishwater, graywater, and those substances that are defined or listed in other annexes to MARPOL 73/78. [33 CFR 151.05]
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- 19. Graywater** "Graywater" means drainage from dishwasher, shower, laundry, bath, and wash basin drains and does not include drainage from toilets, urinals, hospitals, and cargo spaces. [33 CFR 151.05]
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- 20. Harmful Substance** "Harmful substance" means any substance which, if introduced into the sea, is liable to create hazards to human health, harm living resources and marine life, damage amenities or interfere with other legitimate uses of the sea, and includes any substance subject to control by MARPOL 73/78. [33 CFR 158.120 and 151.05]
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- 21. Hazardous Material** Hazardous material means a liquid material or substance that is:
- Flammable or combustible;
 - Designated a hazardous substance under section 311(b) of the Federal Water Pollution Control Act (E1 U.S.C. 1321); or
 - Designated a hazardous material under section 104 of the Hazardous Material Transportation Act (HMTA) (49 U.S.C. app. 1803). [46 U.S.C. 2101(14)]

NOTE: The Environmental Protection Agency designates hazardous substances in 40 CFR, Table 116-4.a. The Coast Guard designates hazardous materials that are transported as bulk liquids by water in 46 CFR 153.

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- 22. High Viscosity NLS** "High viscosity NLS" includes Category A NLSs having a viscosity of at least 25 mPa.s at 20oC and at least 25 mPa.s at the time they are unloaded, high viscosity Category B NLSs and high viscosity Category C NLSs. [33 CFR 158.120]
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- 23. High Viscosity Category B NLS** "High viscosity Category B NLS" means any Category B NLS having a viscosity of at least 25 mPa.s at 20oC and at least 25 mPa.s at the time it is unloaded. [33 CFR 158.120]
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- 24. High Viscosity Category C NLS** "High viscosity Category C NLS" means any Category C NLS having a viscosity of at least 60 mPa.s at 20oC and at least 60 mPa.s at the time it is unloaded. [33 CFR 158.120]
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- 25. IMO Bulk Chemical Code** IMO Bulk Chemical Code includes the IMO International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk, Resolution MEPC 19(22), 1985 and the IMO Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk, Resolution MEPC 20(22), 1985.
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- 26. IMO Certificates** IMO certificates includes a Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk issued under the IMO Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk, Resolution MEPC 20(22), 1985 and an International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk issued under the IMO International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk, Resolution MEPC 19(22), 1985.
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- 27. International Oil Pollution Prevention (IOPP) Certificate** International Oil Pollution Prevention (IOPP) Certificate means a Certificate issued to a ship by an Administration party to MARPOL 73/78 after successful completion of a survey to insure compliance with MARPOL 73/78 requirements. An IOPP Certificate is only issued to ships whose flag state is a party to MARPOL 73/78.
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- 28. IOPP Certificate Equivalency** IOPP certificate equivalency means valid documentation showing that a non-Party ship has been surveyed in accordance with and complies with the requirements of MARPOL 73/78. Evidence of compliance may be issued by either the government of a country or a recognized classification society. The evidence of compliance must contain all of the information in and have substantially the same format as the IOPP Certificate, Form A or Form B as appropriate.
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- 29. Liquid** "Liquid" means each substance having a vapor pressure of 172 kPa or less at 37.8°C. [46 CFR 153.2]
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- 30. MARPOL 73/78** "MARPOL 73/78" means the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto. [33 CFR 151.05]
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- 31. Maintenance Waste** "Maintenance waste" means materials collected while maintaining and operating the ship, including, but not limited to, soot, machinery deposits, scraped paint, deck sweepings, wiping wastes, and rags. [33 CFR 151.05]
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- 32. Medical Waste** "Medical waste" means isolation wastes, infectious agents, human blood and blood products, pathological wastes, sharps, body parts, contaminated bedding, surgical wastes and potentially contaminated laboratory wastes, dialysis wastes, and such additional medical items as prescribed by the Administrator of the EPA by regulation. [33 CFR 151.05]
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- E1. Mineral and Oil Industry Shorebase** "Mineral and oil industry shorebase" means a place or onshore structure or facility which is a base of operations for ships serving the mineral and oil industry. [E1 CFR 158.120]
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- 34. Nearest Land** "Nearest land" has the same meaning as in 33 CFR 151.05.
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35. New Ship

"New ship" means a ship:

- a. For which the building contract is placed after 31 December 1975;
- b. In the absence of a building contract, the keel of which is laid or which is at a similar stage of construction after 30 June 1976;
- c. The delivery of which is after 31 December 1979; or
- d. Which has undergone a major conversion:
 - (1) For which the contract is placed after 31 December 1975;
 - (2) In the absence of a contract, the construction work of which is begun after 30 June 1976; or
 - (3) That is completed after 31 December 1979. [33 CFR 151.05]

36. Non-Party

Non-Party means a country which has not ratified MARPOL 73/78 or Annex V of MARPOL 73/78.

**37. Noxious
Liquid
Substance
(NLS)**

Noxious Liquid Substance (NLS) means:

- a. Each substance listed in 33 CFR 151.47 or 33 CFR 151.49;
- b. Each substance having an "A", "B", "C" or "D" beside its name in the column headed "Pollution Category" in Table 1 of 46 CFR 153; and
- c. Each substance that is identified as an NLS in a written permission issued under 46 CFR 153.900(d). [33 CFR 158.120]

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38. Oceangoing Ship "Oceangoing ship" means a ship that:

- a. Is operated under the authority of the United States and engages in international voyages;
- b. Is operated under the authority of the United States and is certificated for ocean service;
- c. Is operated under the authority of the United States and is certificated for coastwise service beyond 4.8 kilometers (3 miles) from land;

NOTE: A Canadian or U.S. ship being operated exclusively on the Great Lakes of North America or their connecting and tributary waters, or exclusively on the internal waters of the United States and Canada, is not an "oceangoing" ship. [33 CFR 151.05]

- d. Is operated under the authority of the United States and operates at any time seaward of the outermost boundary of the territorial sea of the United States as defined in 33 CFR 2.05; or
- e. Is operated under the authority of a country other than the United States.

39. Oil Oil means petroleum in any form including crude oil, fuel oil, sludge, oil refuse, and refined products. "Oil" does not include animal or vegetable based oil nor does it include noxious liquid substances designated under Annex II of MARPOL 73/78.

40. Oily Mixture "Oily mixture" means an oily mixture with any oil content, including bilge slops, oily wastes, oil residues (sludge), oily ballast water, and washings from cargo oil tanks.

41. Operational Waste "Operational waste" means all cargo associated waste, maintenance waste, cargo residues, and ashes and clinkers from shipboard incinerators and coal burning boilers. [33 CFR 151.05]

42. Owner "Owner" means any person holding title to, or in the absence of title, any other indicia of ownership of, a ship or terminal, but does not include a person who, without participating in the management or operation of a ship or terminal, holds indicia of ownership primarily to protect a security interest in the ship or terminal. [33 U.S.C. 1901(2)(8)]

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43. Party "Party" means a ratifying country to MARPOL 73/78 and Annex V of MARPOL 73/78.

44. Person "Person" means an individual, firm, public or private corporation, partnership, association, State, municipality, commission, political subdivision of a State, or any interstate body. [33 CFR 151.05]

45. Person in Charge " Person-in-Charge (PIC)" means an owner, operator, or person authorized to act on behalf of a port or terminal. [33 CFR 158.120]

NOTE: The "person in charge" in this part is not necessarily the same person as the "person in charge" referred to in 33 CFR Parts 151, 154, 155, and 156 (as defined in 33 CFR 154.105).

46. Plastic "Plastic" means any garbage that is solid material that contains as an essential ingredient one or more synthetic organic high polymers and is formed or shaped during either manufacture of the polymer or fabrication into a finished product by heat or pressure or both. "Degradable" plastics, which are composed of combinations of degradable starches and are either (a) synthetically produced or (b) naturally produced but harvested and adapted for use, are plastics under this part. [33 CFR 151.05] Degradable plastic products on the commercial market are considered plastic within the context of MARPOL enforcement.

47. Port "Port" means:

- a. A group of terminals that combine to act as a unit and be considered a port for the purposes of this part;
- b. A port authority or other organization that chooses to be considered a port for the purposes of this part; or
- c. A place or facility that has been specifically designated as a port by the Captain of the Port (COTP). [33 CFR 158.120]

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- 48. Public Vessel** Public vessel means any warship, naval auxiliary or other ship owned or operated by a country and engaged in non-commercial service.
- 49. Reception Facility** "Reception facility" means anything capable of receiving shipboard residues and mixtures containing oil or NLS residue, or receiving garbage, including, but not limited to:
- a. Fixed piping that conveys residues and mixtures from the ship to a storage or treatment system;
 - b. Tank barges, railroad cars, tank trucks, or other mobile facilities;
 - c. Containers or other receptacles that are used as temporary storage for garbage; or
 - d. Any combination of fixed and mobile facilities. [33 CFR 158.120]
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- 50. Recreational Boating Facility** "Recreational boating facility" means a facility that is capable of providing wharfage or other services for 10 or more recreational vessels. It includes, but is not limited to, marinas, boatyards, and yacht clubs, but does not include a place or facility containing only an unattended launching ramp. [33 CFR 158.120]
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- 51. Regulated NLS Cargo** "Regulated NLS cargo" includes each Category A or high viscosity or solidifying Category B or C NLS cargo listed in Table 1 of 46 CFR Part 153 that contains a reference to 153.908(a) or 153.908(b) in the "Special Requirements" column of that table and is unloaded at the port or terminal within a typical continuous 12 month period either before or after application is made for a Certificate of Adequacy. [33 CFR 158.120]
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52. Residues and Mixtures

"Residues and mixtures containing NLSs (NLS residue)" means:

- a. Any Category A, B, C, or D NLS cargo retained on the ship because it fails to meet consignee specifications;
- b. Any part of a Category A, B, C, or D NLS cargo remaining on the ship after the NLS is discharged to the consignee, including but not limited to puddles on the tank bottom and in sumps, clingage in the tanks, and substance remaining in the pipes; or
- c. Any material contaminated with Category A, B, C, or D NLS cargo, including but not limited to bilge slops, ballast, hose drip pan contents, and tanks wash water. [33 CFR 151.05]

53. Ship

"Ship" means a vessel of any type whatsoever, operating in the marine environment. This includes hydrofoils, air-cushion vehicles, submersibles, floating craft whether self-propelled or not, and fixed or floating drilling rigs and other platforms. [33 CFR 151.05]

54. Slop Tank

"Slop tank" includes slop tanks and cargo tanks used as slop tanks. [46 CFR 153.2]

55. Solidifying NLS

"Solidifying NLS" means a Category A, B, or C NLS that has a melting point:

- a. Greater than 0°C but less than 15°C and a temperature, measured under the procedure in 46 CFR 153.908(d), that is less than 5°C above its melting point at the time it is unloaded; or
- b. 15°C or greater and has a temperature, measured under the procedure in 46 CFR 153.908(d), that is less than 10°C above its melting point at the time it is unloaded. [33 CFR 158.120]

56. Special Area

"Special area" means a sea area where, for recognized technical reasons in relation to its oceanographical and ecological condition and to the particular character of its traffic, the adoption of special mandatory methods for the prevention of sea pollution by oil, NLS or garbage is required. Special areas for the purposes of Annex I of MARPOL 73/78 include those listed in 33 CFR 151.13 and for the purposes of Annex V of MARPOL 73/78 include those listed in 33 CFR 151.53. [33 CFR 151.05]

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57. Tank Barge "Tank barge" means a tank vessel not equipped with a means of self-propulsion. [33 CFR 157.03(u)]

58. Terminal "Terminal" means an onshore facility or an offshore structure located in the navigable waters of the United States or subject to the jurisdiction of the United States and used, or intended to be used, as a port or facility for the transfer or other handling of a harmful substance. [33 CFR 158.120]

NOTE: A ship repair yard is a terminal by definition. A fixed or floating drilling rig or other platform is not a terminal because it is by definition, a "ship" under 33 CFR 151.05(q). The Coast Guard interprets commercial fishing facilities, and mineral and oil industry shorebases to be terminals for the purposes of Annex V of MARPOL 73/78, since these facilities normally provide wharfage and other services, including garbage handling, for ships.

59. The Act "The Act" means the Act to Prevent Pollution from Ships (94 Stat. 2297, 33 U.S.C. 1901 et seq.). [33 CFR 158.120]

60. Victual Waste "Victual waste" means any spoiled or unspoiled food waste. [33 CFR 151.05]

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MSOs and COTPs will check oil tankers of 150 GT or more and other ships of 400 GT or more for Annex I compliance by reviewing the ship's International Oil Pollution Prevention (IOPP) Certificate or equivalency, Oil Record Book(s), oil discharge monitor records, and subdivision and stability documents and calculations. Boarding officers may use the Annex I Boarding Checklist provided in Figure E1-1 to aid them in an Annex I compliance check. Enforcement guidance for Annex I violations is provided in chapter 4 of volume I of the Marine Safety Manual.

**1. IOPP
Certification
Review**

The first step in checking a ship engaged in oceangoing trade for Annex I compliance is to review the ship's IOPP certification. The IOPP Certificate for Parties and the IOPP Certificate equivalency for non-Parties provides a means to easily determine if a ship has all of the required Annex I equipment on board and functioning. A ship having valid IOPP certification is not exempt from other port and environmental safety boardings, but having valid IOPP certification will limit the Annex I segment of the boarding to review of the IOPP certification, the Oil Record Book, the monitor continuous recordings, and stability information (MARPOL 73/78 Annex I Article 5(2)), unless there is clear evidence that the ship is not in compliance with the IOPP certification.

The IOPP Certificate for Parties is composed of two parts. The one page Certificate shows the expiration date and the dates, places, and persons completing required surveys. The second part is either the Form A Supplement, Record of Construction and Equipment for Ships Other than Oil Tankers, or the Form B Supplement, Record of Construction and Equipment for Oil Tankers. The Form A and B Supplements provide specific information on the ship and its pollution prevention equipment. Copies of the IOPP Certificate and the Form A and Form B Supplements are provided as Figures E1-2, E1-3 and E1-4.

- a. Ship Requirements For IOPP Certification. Coast Guard Marine Inspectors using the guidance in NVIC 7-83 conduct the MARPOL 73/78 Annex I surveys and issue the IOPP Certificates for U.S. ships. IOPP surveys of U.S. inspected ships will coincide with regularly scheduled inspections unless required earlier. IOPP Certificate surveys of U.S. uninspected ships are performed only upon request. Enforcement guidance for public vessels not carrying a valid IOPP Certificate is found in chapter 31 of Volume II of the Marine Safety Manual.

- (1) U.S. Ships.

- (a) Each U.S. oil tanker of 150 gross tons and above, and each other U.S. ship of 400 gross tons and above, that engages in voyages to ports or offshore terminals under the jurisdiction of other parties to MARPOL 73/78 must have a valid IOPP Certificate.

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- (b) Inspected ships engaged solely in coast wise trade are not required to have an IOPP Certificate since they are not making an international voyage, but must have the Form A or Form B Supplement, as appropriate. However, as required by 33 CFR 151, 155, and 157 and in accordance with the policy stated in NVIC 7-83, these ships are required to have MARPOL 73/78 pollution prevention equipment on board and functioning.
 - (c) Uninspected oceangoing ships not visiting foreign ports do not need an IOPP Certificate; however, as required by 33 CFR 151, 155, and 157 and in accordance with the policy stated in NVIC 7-83, these ships are required to have MARPOL 73/78 pollution prevention equipment on board and functioning.
- (2) Foreign Ships. All foreign ships within the gross tonnages designated are required without exception, to have on board an IOPP Certificate or IOPP Certificate equivalent.

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FIGURE E1-1: MARPOL ANNEX I BOARDING CHECKLIST

NOTE: *Intended as review only.*

1. Review IOPP Certificate.
 - Is certificate valid?
 - Does vessel name and registry match certificate?
 - Is equipment required in Form A or Form B on board and functioning?
 - Are there any outstanding Notices of Merchant Marine Inspection Requirements (CG-835) or deficiencies indicated in MSIS?
 - Are any "equivalents" listed in section 6 of Form A or section 10 of Form B acceptable to the U.S.?

2. Review Oil Record Book.
 - Does vessel maintain required Oil Record Books? (All ships Part I, Oil Tankers Parts and II)
 - Has each entry been signed by the officer in charge and each page signed by the master?
 - Are oil transfer entries in the proper format?
 - Verify location and concentration of last discharge entry.
 - Review for the last voyage all expected entries such as tank cleaning, ballasting and deballasting.

3. Monitor Continuous Record Review.
 - Does vessel have available on board the continuous records for: the past year for cargo records and the past three years for machinery bilge space records?
 - Were the date, time and concentration of discharges from the most recent voyage recorded in the continuous record (Oil Record Book)?
 - Verify that the location and concentration of the last discharge are authorized.
 - Compare the last discharge recorded with the companion entry in the Oil Record Book.
 - Did vessel arrive in ballast and deballast while in port? Do the deballasting entries in Oil Record Book correspond to monitor recording?
 - If monitor is inoperative, does Oil Record Book indicate the problem and any corrective actions?
 - Do entries match equipment listed on IOPP Certificate?

4. Damage Stability Information Review.
 - Record forward, midships and after drafts you observe when boarding the ship.
 - Ask the master to describe loading of the cargo tanks in terms of percent of tank full.
 - Review the vessel's Trim and Stability Booklet (Loading Manual). If there is no stability Information available, this is considered a major deficiency.
 - Compare the cargo tank levels given by the master and the observed drafts to those obtained from the Trim and Stability Booklet or Loading Booklet.
 - Ask the ship's officer to explain any discrepancies.

ANY DISCREPANCIES NOTED SHOULD INITIATE A MORE THOROUGH REVIEW AS DESCRIBED IN VOLUME II, SECTION E, CHAPTER 1.D.4.b, OF THE MARINE SAFETY MANUAL.

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- b. IOPP Certification Boarding Procedures. Review the ship's Certificate of Inspection or other documents when conducting the annual foreign oil tanker examination and during other boarding as required by Commandant Instruction 5010.A to determine if the ship should have IOPP certification based upon its trade, tonnage, age, and the other requirements. If the ship has IOPP certification review the following items to determine if the IOPP certification is valid (33 CFR 151.19(e)) and correct:
- (1) Compare the name and the registry of the ship on the front of the IOPP certification to the ship's name and flag.
 - (2) Check the certification date, and the signature of the issuing officer on the front of the IOPP certification.
 - (3) Check the back of the IOPP certification for the timely completion of required surveys and the proper recording of the entries.
 - (4) Check the Form A or Form B Supplements to ensure all equipment is on board and operational, the entries are properly completed and signed, and to determine if the ship has monitoring equipment which provides a continuous record of discharges.
 - (5) For U.S. ships check the Coast Guard Vessel Inspection Record (CG-2832), normally kept on the bridge, to see if there are any IOPP Certificate requirements outstanding as noted in a Notice of Merchant Marine Inspection Requirements (CG-835).
 - (6) Check to determine if "equivalents" in Section 6 of Form A or in section 10 of Form B are acceptable to the United States. This may require contacting Commandant (G-MOC-2) at (202) 267-0972 or the Headquarters Command Center during non-duty hours at (202) 267-2101.

SECTION E: INTERNATIONAL CONVENTIONS, TREATIES, STANDARDS, AND REGULATIONS**CHAPTER 1: MARPOL 73/78 VESSEL REQUIREMENTS****2. Oil Record Book (ORB) Review**

The purpose of the ORB is to record all shipboard oil transfer and discharge operations. An improperly kept ORB may be used as evidence against a ship suspected of an illegal oil discharge, while a correctly maintained record could establish a successful defense to an alleged violation.

The ORB follows an internationally accepted format which records transfer operations in chronological order by coded and numbered entries. The old ORB required under the 1954 Convention for the Prevention of Pollution of the Sea by Oil is discontinued and unacceptable for recording oil transfer activities. Information on the correct procedures and practices for making entries in the new ORB are contained in enclosure (3) to NVIC 8-83. This information was adapted from IMO Marine Environment Protection Committee Circular 111.

The ship's master is responsible for properly maintaining the ORB and for ensuring its availability on board the ship for review. An entry in the ORB must be completed after every tank-to-tank operation. The officer(s) in charge shall sign each completed operation and the ship's master shall countersign each completed page. Ships are to keep the ORB on board for a period of three years after the date of the final entry.

Figure E1-4 - To be Added later in Electronic Version

- a. Oil Record Book Requirements. Oceangoing oil tankers of 150 GT and above and all other oceangoing ships 400 GT and above, without regard to the ship's age, are required to maintain the ORB (33 CFR 151.25).
 - (1) U.S. Ships. U.S. ships are required to obtain the new U.S. version of the ORB (yellow cover) from MSO/COTP/MIO's. The U.S. version of the ORB contains both Part I for Machinery Space Operations and Part II for Cargo/Ballast Operations in a single volume. Because both parts are in the same book, oil tankers and ships with bulk oil cargo spaces having an aggregate capacity of 200 cubic meters or more must maintain one ORB solely dedicated to machinery space operations and another ORB solely dedicated to cargo/ballast operations. Other ships only have to maintain one ORB for machinery space operations.
 - (2) Foreign Party Ships. Foreign Party ships are required to use their country's version of the ORB. It is known that some Parties are publishing Part I and Part II of the ORB separately. The ORB is acceptable whether published together as a single volume or in two separate volumes.
 - (3) Non-Party Ships. Non-Party ships are required to have on board and maintain the ORB. Any equivalent format which provides the same information as the ORB is acceptable.

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- b. Oil Record Book Boarding Procedures. The ship's ORB shall be reviewed as part of the standard boarding procedures to ensure the ship's personnel are properly recording all oil transfers and discharges. Review of the following items will assure the ORB is properly kept and may assist in detecting whether any unauthorized discharge has occurred.
 - (1) Check whether the ship is using the ORB or equivalent.
 - (2) Check whether the ship is maintaining the ORB Parts required (All ships Part I; Oil tankers Parts I and II).
 - (3) Check entries in the ORB for the signature of the master on each page and the signature of the officer in charge for each entry.
 - (4) Check transfer entries for correct recording (proper format).
 - (5) Check the last discharge entry recorded to verify the location and the concentration of the discharge.
 - (6) Review, as appropriate, entries for the last voyage to determine if all of the expected entries have been made, especially with regard to tank cleaning, ballasting and deballasting.

3. Monitor Continuous Record Review

Monitors producing a continuous record showing the date and concentration of oil discharges are an important enforcement tool for ensuring ships comply with MARPOL 73/78 discharge restrictions. For ships equipped with monitors, the continuous recordings should be reviewed each time the ship is boarded to verify proper functioning of the device and that oil discharges are in accordance with MARPOL 73/78.

- a. Monitor Requirements. The following paragraph describes the MARPOL 73/78 requirements for monitors with automatic recording devices.
 - (1) Machinery Space Bilge And Fuel Oil Tank Monitors. Oceangoing new ships of 400 GT and above may have monitoring devices installed for discharging machinery space bilge and fuel oil tank wastes (see E1 CFR 155.370). The ship's IOPP certification should be checked to determine whether the ship must have an automatic recording device installed and functioning for MARPOL 73/78 compliance. If the ship has a monitor with an automatic recording device, the continuous records are to be kept on board for three years from the date of the last entry.

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- (2) Cargo Area and Pumproom Monitors. All oil tankers of 150 GT or more or other ships with bulk cargo spaces having an aggregate capacity of 200 cubic meters or more are required to have oil discharge monitors with automatic recording devices on board and operating. The ship's IOPP certification should be checked to determine if the ship has an automatic device installed and functioning. The monitor continuous records are to be kept on board for one year from the date of the last entry and be available for review for three years from the date of the last entry.
- b. Monitor Continuous Record Boarding Procedures. The ship's monitor continuous recordings should be reviewed as part of the standard boarding procedures. Review the following items to ensure that the equipment is properly functioning and that discharges are within MARPOL 73/78 limits. If an unauthorized discharge is indicated by the monitor records, additional evidence of the discharge must be obtained to support submission of a discharge violation for civil penalty proceeding or for referral to another flag state.
- (1) Check if the ship has available on board the continuous records for the periods required i.e., one year for cargo records and three years for machinery bilge space records.
 - (2) Check the monitor continuous record from the most recent voyage for the date, time and concentration of discharges entered on the automatic printout or chart paper (should be machine recorded).
 - (3) Check the last discharge on the continuous record to determine if the concentration discharged and the location of the discharge is authorized.
 - (4) Compare the last discharge recorded on the monitor continuous recording to the companion entry in the Oil Record Book.
 - (5) Check whether the ship arrived in ballast and whether the ORB deballasting entries correspond to the monitor recording, including the time and taking into account the monitor's capacity.
 - (6) If the monitor is inoperative or indicates a discharge in excess of MARPOL 73/78 limits, check the Oil Record Book to determine whether there have been any problems with the monitor and what action the ship has taken to correct the problems.
 - (7) If an unauthorized discharge is indicated by the monitor continuous records, conduct a more thorough review as described in section E1.D.4.b.

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- 4. Alleged Discharge Violation Investigation** Discharge boardings conducted as a result of an oil sighting report by Coast Guard units or other individuals or countries require a thorough review of the ORB, monitor continuous recordings, pollution prevention equipment operation, and ship spaces together with interviewing the ship's personnel to determine whether the suspected ship discharged in violation of MARPOL 73/78. Enforcement guidance for Annex I discharge violations is provided in chapter 4 of volume I of the Marine Safety Manual.
- a. Discharge Requirements. ALL SHIPS must comply with the discharge limitations as described in the following sections. A summary of the discharge requirements for MARPOL 73/78 is provided as Figures E1-5 and E1-6. All unauthorized discharges shall be reported without delay as stated in 33 CFR 153.203 and 33 CFR 151.15.
- (1) U.S. Territorial Sea. The FWPCA prohibits the discharge of oil in a "quantity which may be harmful" into the navigable waters of the United States, which includes the territorial sea (0 to 3 nautical miles (nm) offshore). Under the FWPCA, the EPA has defined a "quantity which may be harmful" as one which forms a sheen, sludge, film or emulsion (40 CFR 110). Therefore, any discharge in the territorial sea which creates a sheen, even if allowed by MARPOL 73/78, is a violation of the FWPCA. If the discharge is greater than 15 parts per million (ppm), it is also a violation of MARPOL 73/78.
- (2) U.S. Contiguous Zone. The U.S. contiguous zone is the area between 3 and 12 nautical miles offshore as measured from the baseline from which the territorial sea is measured. In the contiguous zone oil discharges are restricted by the FWPCA and MARPOL 73/78. The FWPCA prohibits any discharge of oil in a quantity which may be harmful as defined in 40 CFR 110 (one which forms a sheen, sludge, film or emulsion), but excludes discharges permitted by MARPOL 73/78. MARPOL 73/78 permits discharges from machinery space bilges and oil fuel tanks in concentrations of less than 15 ppm when the ship has in operation an approved oily-water separator (33 CFR 151.10), and monitor or alarm system (33 CFR 155). Thus, discharges in the contiguous zone in compliance with MARPOL 73/78 restrictions are not a violation of the FWPCA, even if a sheen results. Discharges of 15 ppm should not produce a sheen, under most conditions.

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- (3) Discharges Beyond The Contiguous Zone. Beyond the contiguous zone, discharges of oil are presently limited only by MARPOL 73/78 except for discharges associated with Outer Continental Shelf drilling operations which are governed by National Pollution Discharge Elimination System (NPDES) permits issued by the EPA (40 CFR 435).
 - (a) Discharges From Machinery Space Bilges And Fuel Tanks. MARPOL 73/78 permits discharges from machinery space bilges and oil fuel tanks in concentrations of less than 100 ppm when the ship is proceeding en route, not within a special area (see Figure E1-6), more than 12nm from the nearest land, and when the ship has in operation an approved oily-water separator and for ships of 10,000 GT and above an approved bilge monitor or alarm system (33 CFR 151.10 and MARPOL 73/78 Annex I, Regulations 9 and 10).
 - (b) Discharges From Tanker Cargo Tanks And Cargo Pump Room Bilges. 33 CFR 157.37 permits discharges of oil from cargo tanks and cargo pump room bilges only when all of the following conditions are met:
 - (i) The tanker is not within a special area;
 - (ii) The tanker is more than 50 nm from the nearest land;
 - (iii) The tanker is proceeding en route;
 - (iv) The instantaneous rate of discharge of oil content does not exceed 60 litres per nautical mile;
 - (v) The total quantity of oil discharged into the sea does not exceed for existing tankers 1/15,000 of the total quantity of the particular cargo of which the residue formed a part, and for new tankers 1/30,000 of the total quantity of the particular cargo of which the residue formed a part; and
 - (vi) The tanker has in operation, except as allowed in 33 CFR 157.08(i), an approved oil discharge monitoring and control system.

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- (4) Fixed and Floating Drilling Rigs and Other Platforms. There are no additional equipment requirements or discharge limitations on fixed and floating drilling rigs and other platforms which are operating under a valid NPDES permit in accordance with section 402 of the FWPCA, as amended and with 40 CFR Chapter I. When not operating under a permit, the MARPOL 73/78 oil discharge limitations in 33 CFR 151.10 are fully applicable. Compliance with an NPDES permit is a fully satisfactory alternative to compliance with the requirements of MARPOL 73/78.
- b. Alleged Discharge Violation Investigation Procedures. The following procedures should be followed when boarding a ship to investigate an alleged discharge violation.
- (1) Inform the ship's master that his ship is suspected of discharging oil in violation of MARPOL 73/78 and/or the Act to Prevent Pollution from Ships.
 - (2) Review the IOPP certification for validity and to determine what pollution prevention equipment is on board.
 - (3) Review the discharge entries in the ORB for the period of the suspected unauthorized discharge to determine if the ship legally discharged at the time and in the location of the reported sighting.
 - (4) Review the continuous records from automatic recording devices, if the ship is equipped with these devices, for the period of the suspected unauthorized discharge to determine if the ship met the requirements for the concentration and the total amount of oil discharged.
 - (5) Compare the continuous records, as appropriate, to the ORB entries to see if they correspond.
 - (6) Check for the voyage whether sufficient time elapsed for the ship to have deballasted through the cargo monitor considering the monitor's capacity and the time period logged in the ORB.
 - (7) Check for missing ORB entries that should have been made during a particular voyage or in connection with other associated transfer operations.
 - (8) Check the operation of pollution prevention equipment i.e., oily-water separators, monitors, and alarms, if there is reason to suspect their malfunction.
 - (9) Check the sequence of oil transfers in the ORB for discrepancies.

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- (10) If pages of the ORB are required for evidence, make copies of the ORB pages and have the
- (11) Tour the ship's spaces looking for signs of oil discharge.
- (12) Interview ship personnel concerning the ship's operations on the date(s) in question.

5. Damage Stability Information Review

Proper loading of a ship is essential for safety and to prevent the possible occurrence of a major oil spill disaster. Regulation 25 of MARPOL 73/78 contains the requirements for damage stability. The review of damage stability requirements will be conducted during the annual foreign tanker examination and during other boardings, such as for monitoring transfer operations as described in Commandant Instruction 5010.8. The purpose of these boardings is to verify that the ship has the proper stability information on board and is loaded in accordance with the approved stability information.

Regulation 25 requires information that would enable the damage stability of a tanker to be assessed under conditions the same as or similar to those under which the tanker is expected to operate. For this purpose it was agreed at IMO that only the full load condition and a limited number of partial load conditions should be evaluated and made available to the master. Additional partial loading conditions should be evaluated depending upon the ship's operational needs. The United States does not accept this interpretation because the partial load conditions provided may be less severe than the ship's actual operating conditions while in U.S. waters. As a result, the United States requires new ships that are oil tankers to have stability information on board for the loading conditions under which they are operating while in U.S. waters.

FIGURE E1-5 To Be Added Later in Electronic Version

FIGURE E1-6 To Be Added Later in Electronic Version

- a. **Damage Stability Requirements.** All new ships that are oil tankers must have damage stability information on board to permit the master to load the ship in a manner to resist damage and minimize oil pollution in case of grounding or collision (Annex I, Regulation 25 of MARPOL 73/78). At the time of their construction, U.S. flag ships are provided with Coast Guard approved stability information to comply with E1 CFR 157. These requirements meet or exceed those in MARPOL 73/78. However, the need for damage stability information in the form required by MARPOL 73/78 will be a new requirement for many foreign ships. Damage stability information for U.S. ships is normally found in either the ship's "Trim and Stability Booklet" or the ship's "Loading Booklet," sometimes referred to as the Loading Manual. Foreign ships will have stability information in similar documents.

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(1) Trim and Stability Booklet. From the information in this booklet, the master or chief mate prepares a calculation for each loading condition of the ship. The booklet provides the master with sufficient information to calculate the stability of the ship for any full or partial loading condition. The Trim and Stability Booklet typically contains the following information:

- (a) General description and light-ship data;
- (b) Instructions for calculating draft, trim and the center of gravity (KG);
- (c) Tank capacity tables;
- (d) Table of hydrostatic properties for the range of operating drafts, which are used to develop the loading conditions;
- (e) Curve or table of allowable center of gravity (KG) or required metacentric height (GM) versus draft; and
- (f) Blank calculation forms.

(2) Loading Booklet (Loading Manual). The Loading Booklet provides the master with a limited number of pre-calculated full and partial loading conditions for departure and arrival. Each condition will be a separate page in the booklet and will show either the amount of cargo or the percentage (0%, 50%, 75%, 98%) of cargo in each tank for that loading condition.

b. Damage Stability Boarding Procedures. Determining whether a ship has proper damage stability information and whether it is properly loaded is difficult since stability information is highly technical, is provided in several acceptable forms, and is usually in the language of the ship's flag state. Boarding officers must use all of their skills in communication and observation, as well as common sense and judgement, in determining whether a ship's damage stability information is adequate and whether the ship is correctly loaded. To determine whether a ship complies with the MARPOL 73/78 damage stability requirements, the following procedures are provided:

(1) Record the forward, midships (if available), and after drafts you observe when boarding the ship. If a midship draft is not available, calculate the mean draft by averaging the forward and after drafts. The trim is the difference between the forward and after drafts.

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- (2) Ask the master to describe the loading of his cargo tanks upon port entry prior to commencing transfer operations in terms of percent of the tank full (e.g., fully loaded, #1 tanks full, #2 tanks at 60%, etc.). Record the fill percentages of each of the cargo tanks. It is particularly important to note which cargo tanks are partially full, especially cargo wing tanks, since they affect stability to a greater extent than other loaded tanks.
- (3) Ask the master or the cargo loading officer for the ship's Trim and Stability Booklet or the Loading Booklet (Loading Manual). If the ship has no stability information, this is a major design deficiency, and the enforcement actions in volume I, chapter 4 of the Marine Safety Manual for a major design deficiency are to be followed.
 - (a) If presented with the Trim and Stability Booklet, ask the ship's officer to show you the loading condition calculations. Record the forward, after, and mean drafts calculated and the percentage fill of each cargo tank for that loading condition.
 - (b) If presented with the Stability Booklet (Loading Manual), ask the ship's officer to show you the specific page that was followed for the ship's loading condition. Record from this page the forward, after, and mean drafts and the percentage fill of each cargo tank.
- (4) Compare the cargo tank levels given by the master and the observed drafts to the cargo tank levels and drafts obtained from the ship's Trim and Stability Booklet or the Loading Booklet. Record any cargo tank levels that do not agree within 5%, record if the mean draft observed does not agree with the calculated mean draft to within four (04) inches, and record if the trim observed does not agree with the calculated trim to within twelve (12) inches.
- (5) Ask the ship's officer to explain any differences greater than indicated in step (4). Boarding officers must understand that considerable differences between observed drafts and the ship's calculated drafts may occur when the ship is in the process of loading or unloading cargo as compared to the fully loaded or completely ballasted conditions. Other causes of differences between the drafts observed or given by a ship's officer and those calculated may be due to hog or sag conditions; fuel consumed; inaccuracies in reading the draft marks due to weather or the ship's position at the dock; water density; and the different reference points from which draft marks may be measured.

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- (6) If the explanation for differences noted in step (4) is unsatisfactory, ask the ship's officer to verify the present level in several of the cargo tanks and compare them to the cargo tank levels listed in the stability booklets for the loading condition. Partially loaded cargo tanks should be checked first. The tank levels may be obtained from soundings, reading ullages, or reading tank level indicators. There may be large variations in tank levels due to transfer operations. Unexplained variations of 5% or more between the present tank loading level and the tank level used for calculations or listed in the Trim and Stability Booklet or the Loading Booklet are an indication the ship has a major operational deficiency. The boarding officer then should contact the Commanding Officer of the MSO or OCMI for direction as to the enforcement actions to take as indicated in volume I, chapter 4 of the Marine Safety Manual for a major operational deficiency.

6. U.S. Requirements Exceeding Those of MARPOL 73/78

Where U.S. requirements exceed those of MARPOL 73/78, specific examination of these features shall be conducted by the boarding officers. The U.S. requirements exceeding those of MARPOL 73/78 include:

- a. Those for containment in 33 CFR 155.310;
- b. Those for the reduced optional period for the use of CBT in lieu of SBT or COW on certain crude oil tankers in 33 CFR 157.10a; and
- c. Those for SBT, CBT, and COW on existing tankers of 20,000 to 40,000 DWT that are 15 years old or more in 33 CFR 157. These requirements went into effect on 1 January 1986 under Section 5(7)(E) and (H) of the Port and Tanker Safety Act of 1978 (46 U.S.C. 3705 and 3706).

SECTION E: INTERNATIONAL CONVENTIONS, TREATIES, STANDARDS, AND REGULATIONS**CHAPTER 1: MARPOL 73/78 VESSEL REQUIREMENTS****E. MARPOL 73/78 ANNEX II BOARDING GUIDANCE AND PROCEDURES**

MSO's and COTP's, as part of the Standard Vessel Boarding Program, shall incorporate review of Annex II requirements when monitoring cargo operations aboard ships carrying Noxious Liquid Substances (NLS's) in bulk. Emphasis should be placed on cargo transfer and waste discharge related records and operational requirements as recorded in the Cargo Record Book (CRB) and described in the ship's Procedures and Arrangements Manual (P&A Manual). Certificates shall also be reviewed for validity.

During boardings of "high priority" vessels carrying NLS's, Boarding Officers shall ensure the ship has an approved P&A Manual, properly maintains a Cargo Record Book, carries NLS in approved tanks, has properly stripped cargo tanks and cleared transfer lines, has correctly discharged NLS waste to the sea, has correctly pre-washed tanks and discharged the NLS waste to an adequate reception facility, and has the required certificates. Boarding officers may use the Annex II Boarding Checklist provided in Figure E1-7 to aid them in an Annex II compliance check. Enforcement guidance for Annex II violations is provided in chapter 4- of volume I of the Marine Safety Manual.

1. Applicability

- a. Annex II of MARPOL 73/78 applies to oceangoing ships (see definition of oceangoing) carrying noxious liquid substances (NLS) in bulk. The regulations implementing Annex II requirements pertaining to the various types of ships are as follows:
 - (1) Tankships and tank barges carrying oil-like NLS under 33 CFR 151;
 - (2) Offshore supply vessels under 46 CFR 98;
 - (3) Chemical tank barges carrying certain Category D NLS under 46 CFR 151; and
 - (4) Chemical tankships and tank barges under 46 CFR 153.
- b. The regulations do not apply to:
 - (1) A tank barge on a limited short protected coastwise voyage whose COI is endorsed for such a route; and
 - (2) Fixed or floating drilling rigs or other offshore platforms, unless they carry NLS as bulk cargo. (If these ships were designed for carrying NLS cargo in bulk they would be treated as chemical tankers.)
- c. Where an oil cargo and NLS cargo are carried on the same ship, the provisions and appropriate requirements of MARPOL 73/78 Annex I and Annex II apply.

SECTION E: INTERNATIONAL CONVENTIONS, TREATIES, STANDARDS, AND REGULATIONS**CHAPTER 1: MARPOL 73/78 VESSEL REQUIREMENTS****2. Vessel Document Requirements**

There are several certificates and manuals which a ship must have and maintain to carry NLS in bulk. The documents required depend upon the vessel's service, the NLS and other cargoes it carries, where it operates, whether the ship's flag state is a Party to MARPOL 73/78, and whether the ship must meet the International Bulk Chemical Code or the Bulk Chemical Code. (See also NVIC 5-87).

A ship carrying NLS in bulk must have its certificates readily available for inspection. Photo copies are not acceptable. A certificate will show its expiration date and will be signed by an authorized issuing authority. A certificate which has been altered is not acceptable. If operating under an alternative or waiver, the document or endorsement indicating such must be on or attached to the certificate. For adding new cargoes a fax from Commandant (MSE) attached to the certificate is acceptable.

For several years two separate certificates have been issued by the Coast Guard to foreign tank vessels. The Letter of Compliance (LOC) is issued to a foreign tank vessel for the carriage of hazardous chemicals and must be accompanied by a Subchapter O Endorsement (Cargoes and Restrictions List) for tank vessels transporting natural gas cargo. The Subchapter O Endorsement (SOE) is an MSIS product which is prepared by the CG Marine Safety Center after acceptance of a vessel's IMO Certificate of Fitness or after special review of the vessel, if no IMO certificate is available.

The Tank Vessel Examination Letter (TVEL) is issued to foreign tank vessels which carry only flammable and/or combustible cargoes. Rather than issue a separate TVEL to a vessel with an LOC, standard practice is to include an endorsement for flammable and/or combustible liquids on the face of the LOC.

A new Certificate of Compliance (COC) form is being prepared as an MSIS product to replace both the LOC and the TVEL. Until the COC is implemented, the LOC and TVEL will continue to be issued and be found on board foreign tank vessels. Rather than refer to both the LOC and TVEL in this instruction the term COC is used throughout. U.S. ships, Party ships and non-Party ships calling on U.S. ports will be examined by marine inspection personnel. If the ship is found in compliance with Annex II, it will be issued or must maintain one or more of the following documents as indicated in Figure E1-8. The applicable documents must be available for inspection by boarding officers. The following paragraphs further describe these documents and the requirements. For a Party ship the Coast Guard endorsement of its COC is invalid if the ship's IMO Certificate expires or becomes invalid.

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FIGURE E1-7: MARPOL ANNEX II BOARDING CHECKLIST

NOTE: Intended as review only. For further guidance, refer to MSM II.E.1.

1. Review Vessel Documentation.
 - Does vessel have required documents? (Refer to Figure E1-8 of MSM II)
 - Does vessel name and registry match all documents?
 - Verify that the NLS cargoes on board are authorized by the certificate and are listed on the cargo manifest.

2. Review P&A Manual. (if required)
 - Is P&A Manual approved by vessel's flag state Administration or the Coast Guard for U.S. and non-Party vessels?
 - Is the P&A Manual in the format prescribed by the Standards for Procedures and Arrangements (USCG CITS-86-1-1)?

3. Review Cargo Record Book. (if required)
 - Is vessel using the correct version of the Cargo Record Book?
 - Has each entry been signed by the officer in charge and each completed page signed by the master?
 - Was the last cargo unloading operation in compliance with Annex II and U.S. regulations?
 - For potentially solidifying or high viscosity NLS, was a pre-wash required and carried out properly? If a pre-wash waiver was issued, was the Cargo Record Book signed by a surveyor or government official?
 - For the last voyage, did the vessel discharge any NLS residue? If so, did the vessel meet all discharge restrictions? (Refer to Figures E1-10 and E1-11 of MSM II.)

4. Review Monitoring Equipment. (if required)
 - Compare recorded discharges to the entries in the Cargo Record Book.
 - Is the record signed by the officer in charge?
 - If monitor is inoperative, does Cargo Record Book indicate the problem and any corrective action?

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5. If Possible, Monitor NLS Cargo Loading, Unloading, Stripping and Line Clearing Operations.
 - Determine name and category of the NLS cargo.
 - Determine if the cargo tank is approved for carriage of the NLS.
 - Review the Cargo Record Book to determine if there are any problems with any of the equipment. (i.e., stripping, temperature sensing systems, cargo pumps, etc.)
 - For potentially solidifying or high viscosity Category B or C NLS's, determine the temperature at which the cargo must be transferred so as not to require an in-port prewash.
 - Ensure that stripping operations are carried out according to the requirements in the vessel's P&A Manual.
 - If an in-port pre-wash is required, follow the procedures in the MSM II E1.E.7.
 - Verify that cargo transfer hoses are not drained back to the ship after unloading an NLS cargo.

ANY DISCREPANCIES NOTED SHOULD INITIATE A MORE THOROUGH REVIEW AS DESCRIBED IN VOLUME II, SECTION E, CHAPTER 1.E.6.b, OF THE MARINE SAFETY MANUAL.

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Certificate of
Inspection
(COI)(CG-841)

- a. Certificate of Inspection (COI)(CG-841). This certificate is issued under Subchapters D and O or I and O to U.S. ships and carries endorsements for the carriage of specific NLS cargoes for each cargo tank. The OCMI issues a COI after the ship has had a satisfactory inspection. The Coast Guard is responsible for issuing this certificate in accordance with 46 CFR 30-40 and 153. The specific endorsements and conditions for Annex II requirements found on the COI come from 33 CFR 151 & 157 and 46 CFR 98, 151, 153 & 172 and have the same force and effect as the regulations requiring them. Each COI is endorsed, according to individual tanks to show which NLS's can be carried and where they may be carried on the ship.

Certificate of
Compliance
(COC)(CG-3308A)

- b. Certificate of Compliance (COC)(CG-3308A). This certificate is issued to foreign ships and carries endorsements for the carriage of specific NLS cargoes for each cargo tank. The OCMI issues a COC, if a ship has a valid International Certificate of Fitness (ICF) or Certificate of Fitness (COF) issued by a Party signatory to Annex II of MARPOL 73/78. The ICF or COF must first be accepted by the Marine Safety Center who prepares the SOE. Non-Party ships may not have an ICF or COF but must be inspected for a COC under U.S. regulations. In most cases Commanding Officer, MSC reviews a vessel's "non-Party" ICF or COF and the vessel's P&A manual to verify compliance with the applicable requirements.

NOTE: If the vessel is a gas carrier found to be in compliance, Commanding Officer, MSC will prepare an SOE which can be issued by the OCMI as described above.

International
Certificate of
Fitness for the
Carriage of
Dangerous
Chemicals In Bulk
(ICF)

- c. International Certificate of Fitness for the Carriage of Dangerous Chemicals In Bulk (ICF). This certificate is issued by Party nations under the International Bulk Chemical Code (IBC), as adopted under Resolution MEPC 19(22), to their oceangoing ships which were built after 30 June 1986. Ships built prior to 1 July 1986, may elect to hold the ICF in lieu of the COF. The ICF is required on oceangoing chemical tankers on foreign voyages and on oceangoing tank barges when in the waters of a Party nation. A U.S. or foreign Party ship on an international voyage will have either an ICF or COF according to when the vessel was built. U.S. ships on domestic oceangoing voyages do not require an ICF.

Certificate of
Fitness for the
Carriage of
Dangerous
Chemicals In Bulk
(COF)(CG-5148A)

- d. Certificate of Fitness for the Carriage of Dangerous Chemicals In Bulk (COF)(CG-5148A). This certificate is issued by Party nations under the Bulk Chemical Code (BCH), as adopted under Resolution MEPC 20(22), to their oceangoing ships which were built before 1 July 1986. The COF is required for oceangoing chemical ships on foreign voyages and oceangoing tank barges when in the waters of a Party nation. A U.S. or foreign Party ship on an international voyage will have either an ICF or COF according to when the vessel was built. U.S. ships on domestic oceangoing voyages do not require a COF.

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International
Pollution Prevention
Certificate for the
Carriage of Noxious
Liquid Substances
in Bulk (NLS
Certificate)

- e. International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk (NLS Certificate). This certificate is issued to oceangoing ships carrying only certain Category D NLS in bulk which are listed in 33 CFR 151 and 46 CFR 151. Ships carrying oil-like Category D NLS cargoes in bulk may as an alternative be issued an International Oil Pollution Prevention Certificate by Party nations. Party oil tankers, offshore supply vessels and non-self-propelled vessels carrying Category D NLS cargoes in bulk, which do not have a COC and ICF or COF, are required to have an NLS Certificate when calling on U.S. ports. Non-Party ships which do not have an endorsed COC must have a letter issued by Commanding Officer, MSC indicating compliance with the relevant Annex II requirements.

International Oil
Pollution Prevention
Certificate with
Form B
Supplement
Attachment
(IOPP/ATTCH) (CG-
5352)

- f. International Oil Pollution Prevention Certificate with Form B Supplement Attachment (IOPP/ATTCH)(CG-5352). This attachment is issued to ships which want to carry oil-like Category C or D NLS as oil under the requirements of Annex I of MARPOL 73/78. U.S., Party and non-Party oil tankers which decide to carry oil-like Category C or D NLS as oils under Annex I of MARPOL 73/78 are required to have an IOPP Form B supplement endorsed for the NLS cargoes.

Procedures and
Arrangements
Manual (P&A
Manual)

- g. Procedures and Arrangements Manual (P&A Manual). This document is approved by the Administration of the flag state and describes in detail the procedures for NLS cargo carriage, tank-to-tank transfers, cargo loading, unloading, stripping operations, and tank pre-washing and ventilation procedures. U.S. and foreign ships shall have an approved P&A Manual available on board the ship for inspection by the boarding officer. The Coast Guard approves P&A Manuals for U.S. and non-Party ships. Party Administrations approve the P&A Manuals for their ships. The approval will be evident by a stamp and signature of the approving official of an authorized agency of the flag state's Administration on the cover of the P&A Manual.

NOTE: The P&A Manual is waived for ships carrying NLS cargo in dedicated tanks, OSV's which cannot discharge NLS to the sea and ships carrying oil-like Category C or D NLS as an oil under Annex I. For some U.S. vessels which discharge all residues to shore reception facilities the P&A Manual is not required and a statement on the COI would indicate this exception.

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Cargo Record Book
(CRB)
(CG-4602)

- h. Cargo Record Book (CRB)(CG-4602).
 - (1) Requirements. This document is required on board every ship carrying NLS in bulk. The form of the CRB is specified in Appendix IV of Annex II of MARPOL 73/78. The CRB is used to record internal and external transfers and discharges of NLS cargo or waste, information concerning inoperative cargo transfer, tank cleaning and pollution prevention equipment, actions by surveyors, and any other cargo or waste related activities. Specific requirements for U.S., Party and non-Party ships are as follows:
 - (a) U.S. Ships. U.S. ships are required to obtain and maintain the U.S. version of the Cargo Record Book from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402. (Sales stock number 050-012-00233-9)
 - (b) Party Ships. Party ships are required to use their country's version of the CRB, or have a CRB in the form specified in Appendix IV of Annex II of MARPOL 73/78.
 - (c) Non-Party Ships. Non-Party ships are required to have on board and maintain a CRB. These ships may use the U.S. version or another version which is in the form specified in Appendix IV of Annex II of MARPOL 73/78.
 - (2) Format. The CRB follows an internationally accepted format which records transfer operations in chronological order by coded and numbered entries. An improperly kept CRB may be used as evidence against a ship suspected of an illegal NLS discharge, while a correctly maintained record could establish a successful defense to an alleged violation.
 - (3) Maintenance. The ship's master is responsible for properly maintaining the CRB and for ensuring its availability on board the ship for review. The officer(s) in charge shall sign the log for each completed operation and the ship's master shall countersign each completed page. Ships are to keep the CRB on board for a period of three years after the date of the last entry.

MARPOL 73/78
Annex II Vessel
Document
Requirements
(Figure E1-8).

- i. MARPOL 73/78 Annex II Vessel Document Requirements (Figure E1-8). This figure contains a list of the various combinations of certificates and documents required by Annex II and U.S. law for U.S. ships in U.S. waters. If there is an "or" after the certificate code it means the ship may hold one or the other of the certificates, but not both.

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**3. Document
Review
Procedures**

- a. Certificates. Boarding Officers are to determine if the certificate is valid by:
 - (1) Comparing the name and the registry of the ship on the front of the certificate to the ship's name and flag;
 - (2) Checking the certification date, expiration date and signature of the issuing authority on the certificate or endorsement to determine if the certificate is valid. If the certificate appears to be invalid, the boarding officer should contact the OCMI, for further instructions. Additionally, for the ICF and COF check the following:
 - (a) The ICF is issued under Resolution MEPC 19(22);
 - (b) The COF is issued under Resolution MEPC 20(22); or
 - (c) The ICF or COF is the same certificate as is identified on the Subchapter O Endorsement to the vessel's COC for MARPOL non-signatory chemical tankships.

FIGURE E1-8 To Be Added Later in Electronic Version

- (3) Checking the certificate for the timely completion of required surveys and the proper recording of the entries, if appropriate; and
 - (4) Verifying that the NLS cargoes on board are authorized for carriage by the certificate and endorsement in the tanks where stowed and are listed on the cargo manifest for the current voyage.
- b. P&A Manual Boarding Procedures. The P&A Manual is an extremely important document since it gives the detailed procedures for the ship to perform all transfer and tank cleaning operations. Boarding officers are to:
 - (1) Check that the P&A Manual is on board and is approved by the ship's flag state Administration or the Coast Guard for U.S. and non-Party ships; and

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- (2) Check that the P&A Manual is in the format prescribed by the Standards for Procedures and Arrangements (see USCG CITS-86-1-1, Commandant's International Technical Series) and has procedures for the operations the ship has most recently performed, i.e., ventilating, pre-washing, etc. More specific review procedures are provided in other sections pertaining to cargo transfers and the pre-washing of cargo tanks.

Cargo Record Book

- c. Cargo Record Book. The ship's CRB shall be reviewed each time a ship is boarded to ensure the ship's personnel are properly recording NLS transfers and discharges, that the discharges to the sea of waste are correctly performed, that equipment failures are logged and that mandatory pre-wash activities are conducted and the pre-wash slops discharged to an adequate reception facility. Because of the chronological and numerical entries, boarding personnel should be able to determine if the CRB has been properly maintained and the necessary entries have been made. Boarding Officers are to:

- (1) Check whether the ship is using the correct version of the CRB.
- (2) Check entries in the CRB for the signature of the officer(s) in charge for each entry and that the master has signed each completed page.
- (3) Check the last cargo unloading operation for compliance with Annex II and U.S. regulations.
 - (a) Determine the name and category of the NLS unloaded.
 - (b) Determine whether the NLS unloaded is potentially solidifying and/or high viscosity (see Section E1.E.7, Annex II Pre-wash And Pre-wash Surveyor Guidance and Procedures).
 - (c) For non-solidifying or non-high viscosity NLS, determine if stripping was accomplished in accordance with the P&A Manual.
- (4) For potentially solidifying or high viscosity NLS, determine:
 - (a) The temperature of the cargo during unloading;
 - (b) Whether a pre-wash was required;
 - (c) If the pre-wash was properly conducted;
 - (d) If the pre-wash slops were discharged to an adequate reception facility;
 - (e) If a surveyor was present to witness the prewash;

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- (f) If a waiver was issued to backload a compatible cargo, and, if so, that the correct cargo was backloaded;
 - (g) If a waiver was issued to allow pre-washing in another port, and, if so, that the ship did not ballast or wash tanks while en route, that the pre-wash was conducted in the other port, and that the slops were discharged to an adequate reception facility; and
 - (h) For waivers, that a surveyor or government official signed the CRB to allow the waiver.
- (5) For the last voyage, check if the ship discharged at sea.
- (a) Check if the NLS residue discharged is allowed to be discharged.
 - (b) Check if the ship met the restrictions for the discharge of the category of NLS waste as outlined in figures E1-10 and E1-11 of this section.
 - (c) Check output from discharge recorder for ships operating under the interim standards and discharging Category B NLS waste. If a ship carries oil-like Category C or D NLS under its IOPP Certificate, the Oil Record Book must have an entry showing that the ship's monitors have been adjusted to measure the oil-like Category C or D NLS.

4. Recording Equipment

Requirements

- a. Requirements. Ships built before July 1, 1986, carrying Category B NLS and operating under the interim standards, are required to have recording equipment that is capable of automatically recording the time and date of the beginning and end of a discharge and the flow rate, where appropriate, of the discharge as prescribed in 46 CFR 153.481. Procedures to follow in the event of failure of this equipment are found in 46 CFR 153.1130.

Inspection Procedures

- b. Inspection Procedures. To ensure the proper operation of the required recording equipment, the boarding officer should check:
 - (1) The times discharges were recorded compared to the Cargo Record Book;
 - (2) The flow rate of the discharge, when required to be recorded;

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- (3) That the entries are correctly made;
- (4) That the record is signed by the person in charge; and
- (5) That failures of recording device are logged in Cargo Record Book.

5. NLS Cargo Monitoring Procedures

Depending upon the operations in progress when the Coast Guard boarding officer arrives, the boarding officer should monitor part or all of the cargo loading, unloading, stripping and line clearing operations using the information contained in the ship's P&A Manual. The boarding officer should also observe pre-wash operations if these are being conducted, and observe third-party pre-wash surveyors if they are verifying the pre-wash operations. The requirements for surveyor duties during prewashes are provided in section E1.E.7. Figure E1-9 outlines the stripping requirements for certain types of vessels handling certain types of cargoes. Additional information on the testing of stripping systems is provided in NVIC 5-87. For ships carrying oil-like Category C or D NLS as oils there is a requirement under 33 CFR 151.37 and 151.41 for a cargo discharge monitor that is designed to measure and record the NLS content of the oil-like cargo residues. The review procedures and enforcement guidance for this monitor are found in volume I, chapter 4 of the Marine Safety Manual.

NLS Cargo Loading Monitor Procedures

- a. NLS Cargo Loading Monitor Procedures. The following items should be reviewed when loading NLS cargo:
 - (1) Determine the name and category of the NLS being loaded by reviewing the bill of lading or shipping papers.
 - (2) Determine the tank the NLS will be loaded into from the ship's person in charge of the loading.
 - (3) Determine if the NLS can be carried in the tank by examining the P&A Manual and the appropriate certificates.
 - (4) Verify other specific loading requirements are correctly performed as outlined in the P&A Manual.

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Monitoring
Procedures

- b. Unloading Monitoring Procedures. NLS unloading procedures must be correctly performed; otherwise, NLS residues in excess of the amounts permitted may be discharged at sea and cause harm to the marine environment. Boarding officers should give special attention to stripping and line clearing operations in accordance with the procedures and requirements specified in sections 2 and 3 of the P&A Manual as well as ensuring prewashes are conducted for Category A and solidifying or high viscosity Category B and C NLS's. The P&A Manual should indicate the method and sequence for operation of the cargo and/or stripping pumps and associated equipment. The below items, as appropriate, should be reviewed during NLS unloading operations. If complete information is not contained in the P&A Manual, copy the procedures that are given in the P&A Manual and forward them to Commandant (G-MOC) together with the identity of the ship, and any other problems encountered. The information in section E1.E.5.b.(8) will normally be obtained during the ship's initial "efficient stripping test." Failure to conduct subsequent stripping and line clearing operations in accordance with the procedures specified in the ship's P&A Manual is likely to leave a greater amount of cargo in the tank than is otherwise indicated in the ship's P&A Manual. It may also result in exceeding the quantities permitted by the regulations. In such circumstances the ship may be required to conduct mandatory pre-wash operations and make arrangements to discharge the resulting pre-wash residue to an adequate reception facility, unless it can be established that the appropriate tank(s) and piping contain less NLS residue than by following the P&A Manual procedures. See section E1.E.7.c.(1)(c).
- (1) Determine the name and category of the NLS being unloaded by reviewing and comparing the cargo manifest, bill of lading, and Cargo Record Book.
 - (2) Determine the tank to be unloaded by referring to the cargo manifest and bill of lading.
 - (3) Determine if the cargo tank is approved for carriage of the NLS by reviewing the P&A Manual and appropriate certificates.
 - (4) Review the Cargo Record Book to determine if there are any problems with unloading equipment, i.e., stripping, temperature sensing systems, cargo pumps, etc.
 - (5) For potentially solidifying or high viscosity Category B or C NLS's, determine from the bill of lading or shipping papers the temperature at which the NLS cargo must be transferred so as not to require an in port pre-wash.

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- (6) Determine from the P&A Manual how and where to read the cargo unloading temperature.
- (7) For potentially solidifying and high viscosity Category B or C NLS, verify the cargo unloading temperature and determine whether based upon the unloading temperature a pre-wash will be required.

FIGURE E1-9 To Be Added later in Electronic Version

- (8) Review stripping operations by verifying that the following requirements as specified in the ship's P&A Manual are met:
 - (a) List and trim.
 - (b) Time required for stripping.
 - (c) Minimum pump speed (or hydraulic supply pressure for hydraulically driven pumps).
 - (d) Minimum purge gas pressure and time required for purging (for hydraulically driven pumps utilizing column purging or purge pipe arrangements).
 - (e) Minimum eductor supply pressure and time required for stripping (for ship utilizing stripping eductors).
 - (f) Minimum gas pressure and time needed to clear lines.
- (9) If an in-port pre-wash is required, follow the procedures in section E1.E.7 for verifying that the pre-wash is properly conducted and the slops are transferred to an adequate reception facility.
- (10) Verify cargo transfer hoses are not drained back to the ship.

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- 6. Cargo Discharge Enforcement** Investigation of alleged NLS discharge violations may result from reviewing the ship's CRB; from reports of discharge violations from individuals, companies, or other nations; or from aerial surveillance, if the NLS produces a sheen or discoloration of the water. Discharge investigations require a thorough review of the ship's documents, logs and certificates, with special attention given to the ship's CRB and P&A Manual; inspection of the ship's spaces, and interviewing ship's personnel to determine if the ship's discharges are to be reported without delay as required by 46 CFR 153.1132.

- a. Discharge Requirements. The discharge requirements for oceangoing ships carrying NLS in bulk are found in Regulation 5 of Annex II and in 46 CFR 153.1102, 1122, 1124, 1126, and 1128. Additionally, ships must comply with the stripping, prewashing, surveyor requirements and associated waivers and exemptions, since a violation or non-compliance with these requirements may result in NLS residues in excess of authorized amounts being discharged. Figures E1-10 and E1-11 summarize the discharge requirements for NLS by category outside and inside Special Areas. All authorized discharges of Category A, B, C, and D NLS and ballast water, tank washings, and other residues or mixtures containing NLS must occur beyond the contiguous zone, i.e., greater than 12 nautical miles offshore and must be made through a suitably sized and approved discharge opening located on the bottom of the ship's hull near the keel.

Oil-like Category C and D NLS when carried as oils under 33CFR 151 have the same discharge requirements as oils, which are contained in section E1.D of this chapter.

- (1) Category A NLS OUTSIDE Of Special Areas. Discharges of Category A NLS and ballast water, tank washings and other residues or mixtures containing Category A NLS are prohibited (Reg 5(1) of Annex II and 46 CFR 1128). The only exception to this rule is after an in-port pre-wash is satisfactorily completed on a tank which held Category A cargo, water added to the tank may be discharged to the sea under the conditions in figure E1-10.
- (2) Category B NLS Outside of Special Areas.
 - (a) Category B Discharges. Discharges of Category B NLS and ballast water, tank washings and other residues or mixtures containing Category B NLS are prohibited, except when discharged in compliance with the restrictions in figure E1-10.
- (3) Category C NLS Outside of Special Areas. Discharges of Category C NLS and ballast water, tank washings and other residues or mixtures containing Category C NLS are prohibited, except when discharged in compliance with the restrictions in figure E1-10.

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- (4) Category D NLS Outside of Special Areas. Discharges of Category D NLS and ballast water, tank washings and other residues or mixtures containing Category D NLS are prohibited except when diluted with water 10 to 1 and discharged in compliance with the restrictions in figure E1-10 or discharged through an underwater discharge outlet. Water added subsequent to dilution and discharged to the sea may be discharged without restriction.
- (5) Category A NLS Inside of Special Areas. The discharge requirements are the same as in section E1.E.6.a.(1), except that the discharge restrictions in figure E1-11 apply.
- (6) Category B NLS Inside of Special Areas. Discharges of Category B NLS and ballast water, tank washings and other residues or mixtures containing Category B NLS are prohibited. The only exception is after a pre-wash has been satisfactorily completed and these washings transferred ashore, the water added to the tank may be discharged to the sea under the conditions listed in figure E1-11.
- (7) Category C NLS Inside of Special Areas. The discharge requirements are the same as in section E1.E.6.a.(3), except that the discharge restrictions in figure E1-11 apply.
- (8) Category D NLS Inside of Special Areas. The discharge requirements are the same as in section E1.E.6.a.(4), except that the discharge restrictions in figure E1-11 apply.
- (9) Uncategorized Substances. Substances which have not been categorized or assigned a provisional category are prohibited from being carried in bulk and the discharge of these substances and ballast water, tank washings and other residues or mixtures containing these substances are prohibited.
- (10) Non-Harmful Substances. Substances and ballast water, tank washings and other residues or mixtures containing substances evaluated as non-harmful, may be discharged without restriction. Non-harmful substances are indicated in 46 CFR 153, Table 1 by a III in column one entitled "IMO Annex II pollution category."
- (11) Fixed and Floating Drilling Rigs and Other Platforms. If the rig or platform carries NLS cargo in bulk, it must comply with the discharge requirements in 46 CFR 153. For rigs and platforms that do not carry NLS in bulk as cargo, the discharge of NLS is prohibited, except when the fixed or floating drilling rig or other platform is operating under a valid NPDES permit in accordance with section 402 of the Clean Water Act, as amended and in accordance with 40 CFR Chapter I.

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**FIGURE E1-10: NLS DISCHARGE RESTRICTIONS OUTSIDE OF
SPECIAL AREA DISCHARGE CRITERIA**

Cat A is prohibited except—

- (1) Ship proceeding en route subsequent after a tank
- (2) Self-propelled ship's speed 7 kts or pre-washing satisfactorily greater; non-self-propelled ship's completed IAW 46 CFR 153 or speed 4 kts or greater Reg I of Annex II of MARPOL
- (3) Discharge is below the waterline 73/78 is conducted
- (4) Discharge is greater than 12 nm from nearest land
- (5) Depth of water is 25 meters or more

Category B*—

- (1) Ship Proceeding en route
- (2) Self-propelled ship's speed 7 kts or greater; non-self-propelled ship's speed 4 kts or greater
- (3) Discharge is below the waterline
- (4) Discharge procedures are approved in P&A Manual
- (5) Discharge is greater than 12 nm from nearest land
- (6) Depth of water is 25 meters or more
- (7) Quantity of NLS discharged per tank is less than 1 m³ or 1/3000 of the tank's capacity

Category C*—

- (1) Ship proceeding en route
- (2) Self-propelled ship's speed 7 kts or greater; non-self-propelled ship's speed 4 kts or greater
- (3) Discharge is below the waterline
- (4) Discharge procedures are approved in P&A Manual
- (5) Discharge is greater than 12 nm from nearest land
- (6) Depth of water is 25 meters or more
- (7) Quantity of NLS discharged per tank is less than 3 m³ or 1/1000 of the tank's capacity

Category D—

- (1) Ship proceeding en route
- (2) Self-propelled ship's speed 7 kts or greater; non-self-propelled ship's speed 4 kts or greater
- (3) Discharge is greater than 12 nm from nearest land
- (4) Discharge concentration from the tank is less than 1 part in 10 or discharged below the waterline

Provisionally Assessed NLS*—

- (1) Discharge in accordance with restrictions for provisional category

Uncategorized Substances*—

- (1) Prohibited

Non-harmful Substances—

- (1) No restrictions on discharges

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*Includes ballast water, tank washings or other residues or mixtures containing such NLS

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FIGURE E1-11: NLS DISCHARGE RESTRICTIONS INSIDE OF SPECIAL AREA

Category A prohibited

- (1) Self-propelled ship's speed 7 kts or except subsequent water greater;
- (2) non-self-propelled ship's added to tank after tank speed 4 kts or greater pre-washing satisfactorily
- (3) Discharge is below the waterline completed IAW 46 CFR 153 or
- (4) Discharge is greater than 12 nm from Reg 8 of Annex II of MARPOL nearest land 73/78
- (5) Depth of water is 25 meters or more

Category B prohibited

- (1) Ship proceeding en route except subsequent water
- (2) Self-propelled ship's speed 7 kts or added to tank after tank greater; non-self-propelled ship's pre-washing satisfactorily speed 4 kts or greater completed IAW 46 CFR 153 or
- (3) Discharge is below the waterline Reg 8 of Annex II of MARPOL
- (4) Discharge procedures are approved in P&A Manual
- (5) Discharge is greater than 12 nm from nearest land
- (6) Depth of water is 25 meters or more
- (7) Quantity of NLS discharged per tank is less than 1 m3 or 1/3000 of the tank's capacity

Category C*

- (1) Ship proceeding en route
- (2) Self-propelled ship's speed 7 kts or greater; non-self-propelled ship's speed 4 kts or greater
- (3) Discharge is below the waterline
- (4) Discharge procedures are approved in P&A Manual
- (5) Discharge is greater than 12 nm from nearest land
- (6) Depth of water is 25 meters or more
- (7) Quantity of NLS discharged per tank is less than 3 m3 or 1/1000 of the tank's capacity

Category D

- (1) Ship proceeding en route
- (2) Self-propelled ship's speed 7 kts or greater; non-self-propelled ship's speed 4 kts or greater
- (3) Discharge is greater than 12 nm from nearest land
- (4) Discharge concentration from the tank is less than 1 part in 10 or discharged below the waterline

Provisionally Assessed NLS*

- (1) Discharge in accordance with restrictions for provisional category

Uncategorized Substances

- (1) Prohibited

Non-Harmful Substances

- (1) No restrictions on discharges

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*Includes ballast water, tank washings or other residues or mixtures containing such NLS

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**Alleged Discharge
Investigation
Procedures**

- b. **Alleged Discharge Investigation Procedures.** The following procedures should be followed when investigating an alleged discharge violation. Figure E1-12 may be of help in determining the type of information to gather when investigating a possible violation. Enforcement guidance for Annex II discharge violations is provided in Chapter 4 of Volume I of the Marine Safety Manual.
 - (1) Prior to boarding, obtain a vessel history from the MSIS or, if the investigation results from directly receiving a report of an alleged discharge violation or from an MSIS Vessels of Particular Interest notice, review the discharge sighting report or contact Commandant (G-MOR) to obtain additional information.
 - (2) Upon boarding the ship inform the master that his ship is suspected of discharging NLS in violation of Annex II of MARPOL 73/78 and/or the Act to Prevent Pollution from Ships.
 - (3) Review the ship's COI, COC, COF, NLS Certificate or IOPP Certificate, as appropriate, for validity and to determine if the ship's equipment and operations comply with Annex II and 46 CFR 153.
 - (4) Review the ship's P&A Manual to determine if it is approved, NLS's permitted to be carried, and what the specific procedures are for discharging NLS.
 - (5) Review the discharge entries in the Cargo Record Book and other ship's logs for the period of the suspected unauthorized discharge. Compare this information to the requirements in Figure E1-10 or E1-11 to determine if the ship meets the restrictions for location speed, depth of water, etc. at the time and in the location of the reported sighting. If no discharge is recorded for the time of the sighting, check the Cargo Record Book for the last discharge and if the ship was in the area of the reported sighting. Question the master, chief mate, and engineer separately as to what could have been sighted being discharged from the ship, e.g., oil, bilge waste, garbage, gray water, etc.
 - (6) For ships using the interim pumping and piping arrangements for tanks carrying Category B NLS, review the outputs of the recording devices to determine the time the discharge started and stopped and to determine, if applicable, if the flow rate requirements stated in the P&A Manual were met.
 - (7) Compare the continuous records (section E1.E.6.b.(6) above), if applicable, to the Cargo Record Book entries to see if they correspond.

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- (8) Compare the discharge information in the Cargo Record Book to the authorized procedure in the P&A Manual to determine if the discharge quantity was correct and if the P&A Manual procedures were followed correctly.
- (9) Check for missing Cargo Record Book entries that should have been made during a particular voyage or in connection with associated transfer operations.
- (10) Check the sequence of NLS transfers in the Cargo Record Book for discrepancies.
- (11) If the pages of the Cargo Record Book or other documents are required for evidence, make copies and have the master certify the accuracy of the reproductions.
- (12) Interview ship's personnel concerning the ship's operations on the date(s) in question.

7. Annex II Pre-wash And Pre-wash Surveyor Guidance and Procedures

- a. General Requirements. The U.S., in accordance with Regulation 8 of Annex II of MARPOL 73/78 and 46 CFR 153.1108 and .1112, requires ships to conduct mandatory in-port prewashes after unloading Category A and solidifying or high viscosity Category B and C NLS's. Prewashes are also required for other special circumstances such as not following P&A Manual procedures for unloading. Additionally, a "pre-wash surveyor" is required by 46 CFR 153.1120 to witness that mandatory prewashes are correctly performed after unloading Category A NLS's. The primary responsibility of the pre-wash surveyor is to ensure that pre-wash operations are conducted in accordance with the pre-wash procedures specified in the ship's P&A Manual. To assist the Coast Guard surveyor in performing his duties, a check-off list was developed (see figure E1-13). The check-off list ensures that the surveyor performs all the actions dictated by regulation and by the guidance presented here. Upon completion a copy of the check-off list will be forwarded to Commandant (G-MOC). The check-off list shall be copied directly from this section for local use. As outlined below, cargo tanks containing Category A NLS, as well as those containing Category B or C NLS considered to be either "solidifying" and/or "high viscosity," require prewashing, unless waived by one of the conditions described in Section E1.E.7.e, Pre-wash Waivers. It is important to note that Category A prewashes are the only prewashes which require witnessing by a pre-wash surveyor. In addition to witnessing pre-wash operations which occur at the unloading port, pre-wash surveyors will be required to witness those Category A prewashes which might occur at either a tank cleaning facility or at a ship repair yard.

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Unloading
Operations
Requiring a Pre-
Wash and
Discharge

- b. Unloading Operations Requiring a Pre-Wash and Discharge of the Pre-Wash Residue to an Adequate Reception Facility Provided by the Terminal.
 - (1) Category A NLS. After unloading a cargo tank containing a Category A NLS, the tank must be pre-washed in accordance with the procedures specified in the ship's P&A Manual and in 46 CFR 153.1120. This pre-wash operation must be witnessed by a pre-wash surveyor. Furthermore, the pre-wash residue must be discharged to a reception facility listed on a Certificate of Adequacy for NLS's prior to the ship leaving the unloading port.

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**FIGURE E1-12: ITEMIZED LIST OF POSSIBLE EVIDENCE ON ALLEGED CONTRAVENTION OF
MARPOL 73/78 ANNEX II DISCHARGE PROVISIONS**

1. ACTION ON SIGHTING POLLUTION

- 1.1 Particulars of ship or ships suspected of contravention
 - 1.1.1 Name of ship
 - 1.1.2 Reasons for suspecting the ship
 - 1.1.3 Date and time (UTC) of observation or identification
 - 1.1.4 Position of ship
 - 1.1.5 Flag and port of registry
 - 1.1.6 Type (e.g., tanker, cargo ship, passenger ship, fishing vessel), size (estimated tonnage) and other descriptive data (e.g., superstructure color and funnel mark)
 - 1.1.7 Draught condition (loaded or in ballast)
 - 1.1.8 Approximate course and speed
 - 1.1.9 Position of slick in relating to ship (e.g., astern, port, starboard)
 - 1.1.10 Part of the ship from which discharge was seen emanating
 - 1.1.11 Whether discharge ceased when ship was observed or contacted by radio
- 1.2 Particulars of slick
 - 1.2.1 Date and time (UTC) of observation if different from 1.1.3
 - 1.2.2 Position of slick in longitude and latitude if different from 1.1.4
 - 1.2.3 Approximate distance in nautical miles from the nearest land
 - 1.2.4 Depth of water according to sea chart
 - 1.2.5 Approximate overall dimension of slick (length, width and percentage thereof covered)
 - 1.2.6 Physical description of slick (direction and form, e.g., continuous, in patches or in windows)
 - 1.2.7 Color of slick
 - 1.2.8 Sky conditions (bright sunshine, overcast, etc.), lightfall and visibility (kms) at the time of observation
 - 1.2.9 Sea state
 - 1.2.10 Direction and speed of surface wind
 - 1.2.11 Direction and speed of current
- 1.3 Identification of the observer(s)
 - 1.3.1 Name of the observer
 - 1.3.2 Organization with which observer is affiliated (if any)
 - 1.3.3 Observer's status within the organization
 - 1.3.4 Observation made from aircraft, ship, shore or otherwise
 - 1.3.5 Name or identity of ship or aircraft from which the observation was made
 - 1.3.6 Specific location of ship, aircraft, place on shore or otherwise from which observation was made
 - 1.3.7 Activity engaged in by observer when observation was made, for example: patrol, voyage (flight en route from ... to ...), etc.

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FIGURE E1-12—Continued

- 1.4 Method of observation and documentation
 - 1.4.1 Visual
 - 1.4.2 Conventional photographs
 - 1.4.3 Remote sensing records and/or remote sensing photographs
 - 1.4.4 Samples taken from slick
 - 1.4.5 Any other form of observation (specify)

NOTE: A photograph of the discharge should preferably be in color. The best results may be obtained with the following three photographs:

- (1) details of the slick taken almost vertically down from an altitude of less than 300 meters with the sun behind the photographer;
- (2) an overall view of the ship and "slick" showing a substance emanating from particular ship; and
- (3) details of the ship for the purposes of identification.

- 1.5 Other information if radio contact can be established
 - 1.5.1 Master informed of pollution
 - 1.5.2 Explanation from master
 - 1.5.3 Ship's last port of call
 - 1.5.4 Ship's next port of call
 - 1.5.5 Name of ship's master and owner
 - 1.5.6 Ship's call sign

2. INVESTIGATION ON BOARD

- 2.1 Inspection of the Certificate (COF or NLS Certificate)
 - 2.1.1 Name of ship
 - 2.1.2 Distinctive number or letters
 - 2.1.3 Port of registry
 - 2.1.4 Type of ship
 - 2.1.5 Date and place of issue
 - 2.1.6 Date and place of endorsement
- 2.2 Inspection of P&A Manual
 - 2.2.1 List of Annex II substances the ship is permitted to carry
 - 2.2.2 Limitations as to tanks in which these substances may be carried
 - 2.2.3 Ship equipped with an efficient stripping system
 - 2.2.4 Residue quantities established at survey
- 2.3 Inspection of Cargo Record Book (CRB)
 - 2.3.1 Copy sufficient pages of the CRB to cover a full loading/unloading/ballasting and tank cleaning cycle of the ship; Also copy the tank diagram

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- 2.4 Inspection of log book
 - 2.4.1 Last port, date of departure, draught forward and aft
 - 2.4.2 Current port, date of arrival, draught forward and aft
 - 2.4.3 Ship's position at or near the time the incident was reported
 - 2.4.4 Spot check if times entered in the cargo record book in respect to discharges correspond with sufficient distance from the nearest land, the required ship's speed and with sufficient water depth
- 2.5 Inspection of other documentation on board
 - 2.5.1 Other documentation relevant for evidence (if necessary make copies) such as:
 - 2.5.1.1 cargo documents of cargo presently or recently carried, together with relevant information on required unloading temperature, viscosity and/or melting point
 - 2.5.1.2 records of temperature of substances during unloading
 - 2.5.1.3 records of monitoring equipment if fitted
- 2.6 Inspection of ship
 - 2.6.1 Ship's equipment in accordance with the P&A Manual
 - 2.6.2 Samples taken; state location on board
 - 2.6.3 Sources of considerable leakage
 - 2.6.4 Cargo residues on surface of segregated or dedicated clean ballast
 - 2.6.5 Condition of pumproom bilges
 - 2.6.6 Slop tank contents (estimate quantity of water and residues)
- 2.7 Statements of persons concerned If the CRB has not been properly completed, information on the following questions may be pertinent:
 - 2.7.1 Was there a discharge (accidental or intentional) at the time indicated on the incident report?
 - 2.7.2 Which tanks are going to be loaded in the port?
 - 2.7.3 Which tanks needed cleaning at sea? Had the tanks been pre-washed?
 - 2.7.4 When and where were these cleaned?
 - 2.7.5 Residues of which substances were involved?
 - 2.7.6 What was done with the tank washing slops?
 - 2.7.7 Was the slop tank, or cargo tank used as a slop tank, discharged at sea?
 - 2.7.8 When and where was the discharge effected?
 - 2.7.9 What are the contents of the slop tank or cargo tank used as slop tank?
 - 2.7.10 Which tanks contained the dirty ballast during the ballast voyage (if ship arrived in ballast)?
 - 2.7.11 Which tanks contained the clean ballast during the ballast voyage (if ship arrived in ballast)?
 - 2.7.12 Details of the present voyage of the ship (previous ports, next ports, trade)
 - 2.7.13 Difficulties experienced with discharge to shore reception facilities
 - 2.7.14 Difficulties experienced with efficient stripping operations
 - 2.7.15 Which tanks are clean or dirty on arrival?
 - 2.7.16 Repairs carried out or envisaged in cargo tanks

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FIGURE E1-12—Continued

2.8 Miscellaneous information

2.8.1 Comments in respect of condition of ship's equipment

2.8.2 Comments in respect of pollution report

2.8.3 Other comments

3. INVESTIGATION ASHORE

3.1 Analyses of samples

3.1.1 Indicate method and results of the samples' analyses

3.2 Further information

3.2.1 Additional information on the ship, obtained from terminal staff, tank cleaning contractors or shore reception facilities may be pertinent

NOTE: Any information under this heading is, if practicable, to be corroborated by documentation such as signed statements, invoices, receipts, etc.

3.3 Information from previous unloading port terminal

3.3.1 Confirmation that the ship unloaded, stripped or pre-washed in accordance with its P&A Manual

3.3.2 The nature of difficulties, if any

3.3.3 Restrictions by authorities under which the ship was permitted to sail

3.3.4 Restrictions in respect of shore reception facilities

4. INFORMATION NOT COVERED BY THE FOREGOING

5. CONCLUSION

5.1 Summing up of the investigator's conclusions

5.2 Indication of applicable provisions of Annex II to MARPOL 73/78 which the ship is suspected of having contravened

5.3 Did the results of the investigation warrant the filing of a deficiency report?

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*Category B and C -
Potentially
Solidifying or High
Viscosity*

- (2) Category B and C - Potentially Solidifying or High Viscosity. A cargo is determined to be a solidifying or a high viscosity substance only at the time of offloading. Those cargoes which have the "potential" for being high viscosity substances contain a reference to "908(a)" in the "Special Requirements" column of Table 1 of 46 CFR 153. Those that are potentially solidifying substances contain a reference to "908(b)" in the Table. A pre-wash of the cargo tanks and transfer of the NLS residue/water mixture ashore in accordance with 46 CFR 153 is required for these cargoes under the following conditions:
- (a) Category B high viscosity NLS, if unloaded at a temperature where the viscosity is greater than 25 mPa.s;
 - (b) Category C high viscosity NLS, if unloaded OUTSIDE of a Special Area at a temperature where the viscosity is greater than 60 mPa.s;
 - (c) Category C high viscosity NLS, if unloaded INSIDE of a Special Area at a temperature where the viscosity is greater than 25 mPa.s;
 - (d) Category B and C solidifying NLS with melting point greater than 0° but less than 15°C, if the temperature of the cargo at the time of transfer is less than 5°C above the melting point of the NLS cargo;
or
 - (e) Category B and C Solidifying NLS with a melting point greater than 15°C, if the temperature of the cargo at the time of transfer is less than 10°C above the melting point of the NLS cargo.

Cargo melting point and viscosity information may be obtained from the master. Under requirements in 46 CFR 153.908 the shipper is required to supply this information to the master.

For the purpose of establishing whether a potentially solidifying or high viscosity Category B or C NLS is unloaded at its proper temperature so as to avoid a mandatory prewash, the temperature of the NLS cargo may be measured by:

- a temperature sensor in the bottom of the tank in accordance with 46 CFR 153.440(a)(3);
- a portable temperature sensor in accordance with 46 CFR 153.440(c); or
- a system which measures the temperature of all interior cargo tank surfaces throughout unloading in accordance with 46 CFR 153.1108(c).

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(FIGURE E1-13 To Be Added Later In Electronic Version)

- (3) Procedures For Determining Whether An NLS Is A Potentially Solidifying and/or High Viscosity NLS And Whether These NLS Require A Pre-wash.
- (a) To determine whether an NLS is a potentially solidifying and/or high viscosity NLS, find the name of the NLS in Table 1 of 46 CFR 153. Potentially high viscosity NLS's will have a reference to .908(a) in the Special Requirements column. Potentially solidifying NLS's will have a reference to .908(b) in the Special Requirements column. Some NLS's will have reference to both .908(a) and .908(b), indicating that they are both potentially solidifying and high viscosity.
 - (b) Record the IMO Annex II pollution category (A, B, C, D or III) from the first column of Table 1 in 46 CFR 153.
 - (c) Determining whether a potentially solidifying NLS needs a prewash.
 - (i) From the Bill of Lading or shipping papers find the melting point of the NLS.
 - (ii) If the melting point of the NLS is greater than 0°C (32°F) and less than 15°C (59°F), the NLS must be unloaded at a temperature that is 5°C (9°F) or more above its melting point to NOT require a prewash.
 - (iii) If the melting point of the NLS is greater than 15°C, (59°F) the NLS must be unloaded at a temperature that is 10°C (18°F) or more above its melting point to NOT require a prewash.
 - (iv) Compare the actual NLS unloading temperature to the above requirements to determine if a pre-wash is required.
 - (v) For example, Cyclohexane, in Table 1 in 46 CFR 153, has a reference to .908(b) in the Special Requirements column. From the shipping papers, the melting point is 6.6°C. The unloading temperature is 20°C, which is more than 5°C above the NLS's melting point; therefore, a pre-wash is not required.

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- (d) Determining whether a potentially high viscosity NLS needs a prewash.
 - (i) From the Bill of Lading or shipping papers, find:
 - For Category B NLS, the temperature at which it has a viscosity of 25 mPa.s
 - For Category C NLS, the temperature at which it has a viscosity of 60 mPa.s
 - (ii) If the actual unloading temperature is greater than the temperature recorded in (a) above, then the NLS does not need a prewash.
 - (iii) For example, Cyclohexanol, in Table 1 in 46 CFR 153, is a Category C NLS and has a reference to .908(a) in the Special Requirements column. From the shipping papers the temperature at which Cyclohexanol has a viscosity of 25 mPa.s is 40°C. The unloading temperature is 45°C, which is greater than 40°C; therefore, the NLS does not require a prewash.

NOTE: The higher the temperature the less viscous a material and the smaller the value of mPa.s.

Other Situations
Requiring a Pre-
Wash

- c. Other Situations Requiring a Pre-Wash.
 - (1) Category B and C Non High Viscosity or Non-Solidifying. Cargo tanks containing Category B or C non-solidifying or non-high viscosity NLS require pre-washing as described below:
 - (a) Category B. A ship operating under either the interim standards in 46 CFR 153.481(b) or under a "restricted voyage" waiver granted under 46 CFR 153.483 must pre-wash the appropriate tanks in accordance with the procedures specified in the ship's P&A Manual.
 - (i) Under the interim standards, the ship may discharge the NLS waste to either an adequate reception facility or to a slop tank for discharge at sea.
 - (ii) When operating under the "restricted voyage" waiver, the ship must discharge the pre-wash residue from these operations to an adequate reception facility. See section E1.E.7.e.(1) on "restricted voyage" waivers.

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- (b) Category C. A ship operating under a "restricted voyage" waiver granted under 46 CFR 153.483 must pre-wash the appropriate tanks in accordance with the procedures specified in the ship's P&A Manual. See section E1.E.7.e.(1) on "restricted voyage" waivers. The ship must discharge the pre-wash residue to an adequate reception facility prior to leaving the unloading port.
- (c) Category B And C. In situations where more Category B or C cargo residue remains in a cargo tank and transfer piping because the tank(s) and piping were not capable of being unloaded in accordance with the unloading procedures specified in the ship's P&A Manual, the tank(s) must be pre-washed following the procedures specified in 46 CFR 153.1120, except as follows:
 - (i) The next cargo is one that can be loaded without the need to wash the tank and a waiver can be issued under 46 CFR 153.1114(a)(see section E1.E.7.e.(1)); or
 - (ii) Alternative unloading procedures have been used and it can be established that the appropriate tank(s) and piping contain less cargo residue than they would had they been unloaded in accordance with the unloading procedures specified in the ship's P&A Manual. See 46 CFR 153.1116(b).

Ventilation Tank
Cleaning

- d. Ventilation Tank Cleaning. As an alternative to prewashing, ships may clean tanks by ventilation when unloading Category A, B, or C cargoes whose vapor pressure exceeds 5 kPa (50 mbar) at 20°C (68°F). To clean tanks by ventilation, a ship must have an approved procedure in its P&A Manual. The ventilation procedure may be conducted at sea and does not have to be witnessed by the pre-wash surveyor. (Ventilation may be prohibited in port by state and local authorities.) The ship's P&A Manual will indicate for which cargoes and cargo tanks ventilation is permitted. The manual will also provide a general description of the ship's ventilation system and a description of how the ventilation equipment must be used for tank cleaning. This will include the following
 - (1) Number and type of fans required;
 - (2) Fan location;
 - (3) Minimum air flow or fan speed;
 - (4) Minimum time required for ventilation;

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(5) Procedures and equipment for ensuring that the tanks are dry at the completion for ventilation; and

(6) Any special safety procedures to be followed during ventilating.

Pre-Wash Waivers

e. Pre-Wash Waivers. The requirement for pre-washing cargo tanks from which Category A, B, or C NLS was unloaded as outlined in section E1.E.2 above may be waived or otherwise be omitted under any one of the following conditions:

(1) For Category B and C NLS only (including potentially solidifying and high viscosity), Commanding Officer, G-MSC grants the ship a "restricted voyage waiver" which allows for the appropriate cargo tank(s) to be pre-washed only at those ports or terminals specified in the waiver (46 CFR 153.483 and 46 CFR 153.10).

(2) Commanding Officer, Marine Safety Center grants the ship a "dedicated cargo tank waiver" which eliminates pre-washing provided that the tank only carries the specific cargo listed on the vessel's Certificate of Inspection or Certificate of Compliance. If the tank is washed or ballasted, the wash water residue or ballast must be discharged to an adequate reception facility (46 CFR 153.491(a) and 46 CFR 153.10).

(3) A surveyor signs a statement in the Cargo Record Book that the next cargo has been determined to be one that may be loaded without washing the cargo tank(s) and the cargo tank(s) will not be washed or ballasted before it is reloaded (46 CFR 153.1114(a)).

(4) The cargo tank(s) will be cleaned by ventilation (46 CFR 153.1114(b)).

(5) The Coast Guard issues written authorization allowing the appropriate tank(s) to be pre-washed in another port. If the pre-wash port is a foreign port, authorization is granted by Commandant (G-MTH); if the pre-wash port is a U.S. port, authorization is granted by the COTP having jurisdiction over the unloading port. In both cases the procedures and criteria which need to be complied with before granting authorization are outlined in 46 CFR 1119(c).

(6) A schematic diagram outlining the relationship between cargo unloading, waivers, and pre-wash operations is provided as figure E1-14.

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Pre-Wash Surveyor
Duties and
Procedures

f. Pre-Wash Surveyor Duties and Procedures.

(1) Notification. As required by 33 CFR 151.43 the ship must contact the COTP at least 24 hours before a pre-wash surveyor is needed. Items (a) through (e) listed below are required in the notification. Additionally, other information which will assist in coordinating pre-wash operations is listed.

- (a) Ship's name;
- (b) Expected time the pre-washing operations will commence (Pre-wash surveyors must arrive by this time, unless the pre-wash time is postponed by the ship);
- (c) NLS (by name and category) to be unloaded from the tanks to be pre-washed;
- (d) Estimated volume of pre-wash residue to be discharged;
- (e) Name and amount of any tank cleaning agent(s) to be used;
- (f) Name and location of the unloading terminal;
- (g) Ship's expected time of arrival (ETA) at the unloading terminal;
- (h) Cargo tank(s) to be pre-washed;

NOTE: Pre-wash surveyors should also check to ascertain that the cargo tank(s) to be pre-washed are loaded with Category A substances – only Category A pre-washes are required to be witnessed by a pre-wash surveyor.

- (i) Intended disposition of residues, i.e., reception facility at visiting terminal or a reception facility at another port; and
- (j) Name and location of the reception facility (if other than the unloading terminal).

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*Preliminary
Preparations*

(2) Preliminary Preparations.

- (a) Upon receipt of the above information, and as a preliminary safety measure, pre-wash surveyors should familiarize themselves with the characteristics of the NLS to be pre-washed, particularly those related to toxicity. Such information can be found in the USCG Chemical Data Guide (CIM 16616.6), the CHRIS Manual (COMDTINST 16465.11 and .12 and the chemical data sheets found in Volumes 2 and 3 of the International Chamber of Shipping (ICS) Tanker Safety Guide (Chemicals). It is anticipated that many of the pre-wash operations will be conducted with portable tank washing equipment lowered into position through open "butterworth" holes in the deck. The use of portable tank washing machines can pose particularly acute hazards when tank covers must be removed and the possibility of splash hazard in the area of the tank opening is increased. Consequently, particular attention should be given to the health hazard information contained in the above documents as well as any recommendations they may contain for protective clothing needed for working in the vicinity of these cargoes. Pre-wash surveyors should be prepared to use this personal safety equipment. When equipment is not available to match the level of threat of the chemical involved and/or method of pre-wash involved, surveyors should view the operation at a safe distance. When viewing the operation at a distance, verify compliance with the P&A Manual as much as practical. The start of portable tank cleaning machines can be determined by witnessing the motion of the portable hoses. Often, the pump gauges are located in cargo control rooms at a safe distance from the pre-wash operations. These methods and others should be employed to maximize the surveyor's personal safety and verify compliance with the pre-wash requirements.
- (b) Review the vessel's history from the MSIS and confirm the time the pre-wash is expected to commence.

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- (3) Arrival at the Terminal. Operating expenses for oceangoing chemical carriers typically run in the thousands of dollars per hour. Surveyors should ensure pre-wash operations are not delayed due to their late arrival. The pre-wash surveyor, upon arrival at the terminal, should make introductions, advise the reason for visit, examine the terminal's Certificate of Adequacy (COA) to ensure that it is valid and that the reception facility is approved for the NLS to be unloaded. The pre-wash surveyor should also obtain from the appropriate personnel any information which might impact on the ability to conduct cargo discharge and/or pre-wash operations in accordance with the procedures specified in the ship's P&A Manual, e.g., terminal or reception facility pipeline temporarily out of service, etc.
- (4) Arrival Aboard The Vessel. Upon boarding the ship, the pre-wash surveyor should introduce himself to the master or chief officer, and request the following documents:
 - (a) U.S. Flag Ships:
 - (i) An endorsed Certificate of Inspection (COI) to carry MARPOL Annex II NLS;

(FIGURE E1-14 To Be Added Later In Electronic Version)

- (ii) Cargo Plan and Bill of Lading (shipping papers);
 - (iii) P&A Manual; and
 - (iv) Cargo Record Book.
 - (b) Foreign Flag Ships:
 - (i) A Certificate of Compliance (COC) with Subchapter O Endorsement (SOE) to carry MARPOL Annex II NLS and the vessels's COF when appropriate. [NOTE: Foreign flag ships calling at U.S. ports for the first time will not possess the endorsed COC. Prior to arrival such ships must have submitted their COF to Commanding Officer, Marine Safety Center and received acceptance and arranged with the OCMI for an examination for issuance of the COC.];
 - (ii) Cargo Plan and Bill of Lading (shipping papers);
 - (iii) P&A Manual; and

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(iv) Cargo Record Book.

(c) Using the above documents the pre-wash surveyor should then confirm the following:

(i) The NLS's to be unloaded at the terminal, their categories, and cargo tank location (refer to the ship's cargo plan, Bill of Lading, P&A Manual and Cargo Record Book);

(ii) The cargo tanks from which Category A NLS's will be unloaded (refer to the ship's cargo plan, Bill of Lading, P&A Manual);

(iii) The pre-wash procedures to be used in each cargo tank (refer to the ship's P&A Manual); and

(iv) The required disposition of the pre-wash residue (refer to previous sections E1.E.1-E1.E.3 and E1.E.5).

Pre-wash
Operations

g. Pre-wash Operations.

(1) Ships will normally be ready to begin pre-wash operations when the cargo tank(s) is empty and as soon as possible after stripping. However, pre-wash operations may not begin until the pre-wash surveyor is aboard the ship for Category A NLS's, and they must be conducted in accordance with the pre-wash procedures described in the ship's P&A Manual. In addition to providing a general description of the ship's tank cleaning system, the P&A Manual will describe how the tank cleaning must be conducted. This will include the following:

(a) Number and type of washing machines to be used;

(b) Machine location;

(c) Minimum washing pressure;

(d) Minimum number of washing machine cycles (or the minimum time required for each pre-washing operation);

(e) Minimum water temperature (where applicable);

(f) Tank cleaning agents which may be used (where applicable); and

(g) In instances where the tank(s) cannot be washed with water, the tank cleaning agents or washing medium to be used including an indication of when the actual "pre-wash" commences.

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- (2) During pre-wash operations, the pre-wash surveyor should determine that the fluid pressure, temperature, etc. are as specified in the ship's P&A Manual. The appropriate gauges and thermometers will normally be found in the ship's cargo control room or pump room. Pre-wash surveyors should also determine that the washing machines are operating. This can be accomplished by listening as the washing machine washes the tank. During the washing operation the washing machine will normally generate an audible sound as the fluid stream passes across the tank top. The sound is particularly noticeable for fixed in-place tank cleaning machines. For fixed in-place machines utilizing portable drives, pre-wash surveyors should also visually determine that the machines are washing the tank throughout the "washing cycle" specified in the ship's P&A Manual. Portable drives are generally outfitted with indicators for this purpose.
- (3) Pre-wash surveyors should accomplish the above tasks on a "spot check" basis standing upwind of the appropriate cargo tank(s) whenever possible.
- (4) For Category A cargoes, it may also be necessary to measure the concentration of the pre-wash residue to ensure that it is less than the maximum permitted by the regulations, i.e., 0.1% (by weight). See 46 CFR 153.1120(a). The ship's P&A Manual will identify which Category A cargoes require this measurement and it will list the equipment and procedures necessary to accomplish this procedure.
- (5) When enough pre-wash residue has been collected in the tank bottom for the pump to gain suction, the cargo or stripping pump must be started and the pre-wash residue pumped out. Where a measurement of the pre-wash concentration for some Category "A" is required, this is to be accomplished and/or arranged for by the ship. The pre-wash surveyor should witness the chemical analysis and ensure that the discharge concentration meets the criteria for the specific Category A NLS.

Cargo Record Book
Entries for Pre-
Wash Operations

- h. Cargo Record Book Entries for Pre-Wash Operations. The pre-wash surveyor must make the appropriate entries in Section J to the ship's Cargo Record Book (CRB) at the completion of any mandatory pre-wash operation. The ship's officer will complete section D, items 12-14 of the CRB.

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F. MARPOL 73/78 ANNEX V GUIDANCE AND PROCEDURES

- 1. Applicability** The U.S. regulations to implement Annex V apply to all inspected or uninspected marine craft, regardless of flag, on the navigable waters and within the 200 mile Exclusive Economic Zone (EEZ) and to U.S. ships wherever they are located. Vessels exempt from Annex V include foreign flag warships, naval auxiliaries, or other ships owned and operated by a country when engaged in non-commercial service and, until December 31, 1993, U.S. public vessels. Ships subject to Annex V are prohibited from discharging plastics into the sea and are limited in discharging floating dunnage, lining and packing materials, paper, rags, glass, metal, bottles, crockery and similar refuse, and food waste. The Annex requires Party nations to ensure ports and terminals provide adequate reception facilities to receive ship-generated garbage. General enforcement guidance is in chapter 4 of volume I of the Marine Safety Manual.

2. Discharge Restrictions

- a. No person on board any ship may discharge garbage into the navigable waters of the U.S.
- b. Further restrictions based on garbage type:

Garbage Type	Disposal
Plastics - includes synthetic ropes, fishing nets, plastic bags and biodegradable plastics	<ul style="list-style-type: none"> Prohibited in all areas
Floating dunnage , lining and packing materials	<ul style="list-style-type: none"> Prohibited less than 40 kilometers (25 miles) from nearest land
Food waste or paper, rags, glass, metal , bottles, crockery and similar refuse	<ul style="list-style-type: none"> Prohibited less than 19.2 kilometers (12 miles) from nearest land
Comminuted or ground food	<ul style="list-style-type: none"> Prohibited waste, paper, rags, glass, etc. less than 4.8 kilometers (3 miles) from nearest land

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- 3. Incinerated Plastic** The IMO's "Guidelines for the Implementation of Annex V" states that "plastic garbage must be retained on board ship unless ...reduced to ash by incineration." Therefore, if plastic has been incinerated so that only ash remains, the ash may be discharged. However, "clinkers" or any hard residue that remains from the incineration of plastic shall be treated as plastic under Annex V and cannot be discharged at sea. Vessel crew should be educated on this issue and advised to retain receipts from shore disposal of plastic clinkers. Plastic is most effectively reduced to ash by high intensity incinerators.
-
- 4. Operational Requirements for Ships** There are several ways to discharge ship-generated garbage in accordance with the rules. If plastics are separated from other garbage on board ship, the remaining garbage may be incinerated, retained on board for later shore disposal, or discharged at sea where allowed. If plastics are not separated from other garbage on board ship, garbage containing mixtures of plastic and other garbage must be incinerated on board ship or retained on board for later shoreside disposal. If the master, operator or person in charge of a ship operates with plastics aboard the ship which require disposal and cannot show compliance with the regulations (bags of garbage being held for shore disposal or reception facility receipts), these factors may be used as evidence that Annex V of MARPOL 73/78 has been violated. 33 CFR 151.63 contains a listing of some means by which a ship's master could show that the ship is in compliance with the regulations and Annex V.
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- 5. Operational Requirements for Fixed or Floating Platforms and Associated Vessels** Discharge restrictions for offshore platforms, rigs, and associated vessels not only prohibit the disposal of plastics, but prohibit the disposal of all types of garbage less than 19.2 kilometers (12 miles) from nearest land. Food waste, which is comminuted or ground so that it passes through a screen with openings no greater than 25 millimeters (one inch), may be discharged from fixed or floating platforms or from a ship within 500 meters of a platform, if the platform is beyond 12 nautical miles (21.6 kilometers) from nearest land. Boarding officers and inspectors should take note that after 31 December 1988, an oil rig or platform operator could be in compliance with a valid EPA National Pollution Discharge Elimination System (NPDES) permit issued pursuant to regulations authorized under the Clean Water Act and not be in compliance with Annex V provisions, because the Annex V implementing regulations go beyond the requirements of the NPDES permitting system. The EPA's NPDES permits issued to oil rigs and platforms prohibit the discharge of floating solid wastes and garbage, but allow sinkable wastes to be discharged unless specifically prohibited. Under Annex V, a higher standard is required for oil rigs and platforms, since no discharge of garbage (except comminuted food wastes beyond 12 nautical miles (21.6 kilometers)) is allowed. Because of this disparity between the NPDES process and Annex V requirements, the EPA has indicated that it is considering in future NPDES permits to require oil rigs and platforms to comply with Annex V.
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6. APHIS Vessel Monitoring Program

The Animal and Plant Health Inspection Service (APHIS) of the U.S. Department of Agriculture (USDA) is a primary source of possible Annex V violation information for all vessels arriving in the U.S. from foreign ports. USDA regulations prohibit vessels which have called at foreign ports (except Canada) from bringing ashore for disposal food, food wastes or waste which has been in contact with food unless certain requirements are met. Special handling and incineration or sterilization by APHIS approved disposal companies are required if vessels wish to dispose of this type of waste while in port. These requirements are intended to prevent the introduction of bacteria and insects into the U.S. which could be harmful to plants or animals. The goal of APHIS is to inspect all vessels which have called at foreign ports to verify compliance with these requirements. (In some regions, APHIS does not have the resources to board 100% of foreign arrivals.) During the course of their normal boardings, APHIS inspectors will determine compliance with ANNEX V requirements and will report any suspected violation to the local Captain of the Port (COTP) on PPQ Form 288, Figure E1-15. If resources permit, vessels suspected of violations by APHIS officers should be boarded by Coast Guard personnel to verify that the vessel is not in compliance with MARPOL V requirements and collect additional evidence.

NOTE: Even if the Coast Guard is unable to board a vessel suspected by APHIS of an Annex V violation, the report may still provide sufficient evidence for a civil penalty case, or referral to the vessel's flag state if U.S. jurisdiction cannot be proven.

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FIGURE E1-16: MARPOL ANNEX V BOARDING CHECKLIST

NOTE: Intended as review only. For further guidance, refer to volume II, chapter E1, section F of the Marine Safety Manual.

1. Review APHIS Boarding Report, if available, and determine whether it indicates a MARPOL V violation.
 - Verify vessel name, flag, registration number, call sign?
2. Review Shipboard Garbage Handling Practices.
 - Is the crew familiar with the requirements of MARPOL Annex V?
 - How is ship-generated garbage disposed of?
 - Are plastics used on board? Is there plastic in the ship's stores?
 - Are plastics segregated from other garbage for disposal ashore?
 - Is there garbage/plastics to be disposed of ashore?
 - Are there shipboard spaces used for collecting and storing shipboard garbage?
 - Is there a functioning incinerator on board? Is it used for incinerating plastics and other garbage? Are the residual plastic "clinkers" retained for disposal ashore?
 - Is there a grinder or comminuter on board used for discharge of garbage between 3 and 12 nautical miles (5.4 and 21.6 kilometers)?
 - Are there receipts available from garbage discharges at port reception facilities?
 - Are there log entries indicating garbage disposal at sea?
 - Although not yet required, does the vessel keep a garbage discharge log indicating dates, locations, amounts, types and methods of garbage discharge?
 - Are there ongoing educational programs to train shipboard personnel in garbage handling procedures?
 - Although not required for foreign vessels, is there a written shipboard waste management plan and are garbage disposal placards displayed?
3. Check for MARPOL Annex V Placards and Waste Management Plans. (U.S. VESSELS ONLY)
 - For vessels 12 m (40 ft) and greater in length, is there a waste management plan on board? Is there a designated crew member responsible for carrying out the plan?
 - For vessels 7.92 m (26 ft) and greater in length, are there Annex V placards placed in prominent locations on board?

FOR GENERAL ENFORCEMENT GUIDANCE, SEE THE MARINE SAFETY MANUAL VOLUME I, CHAPTER 4.

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7. General
Boarding
Guidance

- a. At Sea. Inspected and uninspected ships such as fishing vessels and recreational craft may be encountered by Coast Guard boarding officers during other routine activities; i.e., fisheries patrols, pollution investigations, marine casualty investigations or other law enforcement activities. Since there are no special equipment requirements, the Annex V portion of any boarding will consist of a review of the use of plastics on board and the crew's garbage handling and disposal practices for ship-generated waste. Virtually every vessel is subject to Annex V. Coast Guard units are not expected to conduct additional boardings exclusively for Annex V. Annex V compliance checks should be conducted as resources permit and in conjunction with other routine activities. Boarding officers may use the checklist provided in Figure E1-16 to aid them in an Annex V compliance check.
- b. In Port. No special or exclusive Coast Guard boarding will be required to monitor compliance with Annex V. However, COTP's shall include, as part of their vessel monitoring program, the review of Annex V requirements and continue to board only "high priority" vessels as defined in chapter 2 of volume I of the Marine Safety Manual, COMDTINST M16000.6. Boarding officers shall verify if an APHIS inspection has been done by observing the copy of the PPQ FORM 288 left on board. **Even if the form is aboard the vessel, the boarding officer shall conduct a follow-up Coast Guard check for compliance with Annex V.

Vessel operators will prioritize Annex V compliance based on the level of interest expressed by the Coast Guard. If an APHIS inspection has not been conducted, particular attention should be given to shipboard garbage handling practices, use of plastics and any evidence of possible illegal discharges. Boarding officers may use the checklist provided in Figure E1-16 to aid them in an Annex V compliance check.

Since U.S. flag vessels solely engaged in coastwise trade and other non-oceangoing vessels will not normally be boarded by APHIS inspectors, Coast Guard boarding officers should determine compliance with the requirements of Annex V when on board these vessels. If plastics are observed on board, there should be clear evidence of the crew's degree of compliance with Annex V provisions; e.g., use of an on board incinerator; or where an incinerator is not used, accumulated plastic waste being retained for disposal ashore; or receipts from shore disposal. The garbage-handling practices on board the ship should be reviewed, the crew educated on discharge restrictions, and any evidence of noncompliance noted on the boarding form. For U.S. vessels, the waste management plan should be reviewed.

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When conducting in-port boardings, the following procedure should be followed to determine compliance:

- (1) Verify that an APHIS boarding has been conducted for this port call by inspecting the APHIS form for name and flag of the ship, date of inspection, Plant Protection Quarantine (PPQ) officer's signature and any comments concerning Annex V discrepancies. This form is required to be left on board with the master or chief steward after an APHIS inspection.
- (2) In cases where there has not been an APHIS boarding, determine how the vessel is complying with the Annex V discharge restrictions, particularly how and where it is disposing of its plastic waste. Some of the factors to be considered and documented by the boarding officer in evaluating compliance are:
 - (a) Records, including receipts, of garbage discharges at port reception facilities;
 - (b) Log entries indicating discharge of garbage;
 - (c) The presence and operability of equipment to treat ship-generated garbage, including, but not limited to, incinerators, grinders, or comminuters;
 - (d) The presence of and adherence to a written shipboard waste management plan;
 - (e) The amount or absence of plastics in ship stores;
 - (f) Ongoing educational programs to train shipboard personnel of garbage handling procedures; and
 - (g) The presence of shipboard spaces used for collecting, processing, storing, and discharging ship-generated garbage.

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- (3) The most difficult aspect in establishing MARPOL V violations is proving U.S. jurisdiction. Even if a vessel master admits that all garbage, including plastics, is discharged at sea, it is sometimes impossible to prove that the discharge occurred within U.S. waters. If by witnesses' statements or by log entries of garbage discharge and ship position, jurisdiction can be established, enforcement actions should be taken in accordance with Chapter 4 of Volume I of the Marine Safety Manual and the case processed for civil penalty.

As of July 1992, the Coast Guard began taking enforcement action under U.S. law, including referral to the Department of Justice, for all suspected MARPOL Annex V violations occurring within the U.S. EEZ. Prior to July, Coast Guard policy had been to forward cases involving vessels of signatory nations (unless the violation occurred within three nm) to the flag State administration for investigation and enforcement. The policy shift expanding coverage out to the EEZ became necessary because flag States were not taking adequate action in the cases forwarded by the U.S. Countries often failed to acknowledge receipt of the cases and many took little if any legal action against suspected vessels.

- (4) Building A Case Under MARPOL 73 /78 ANNEX V. If circumstances discovered during a boarding indicate a possible MARPOL V violation or if an incriminating report is received from another agency, vessel passenger, or vessel crew member, the following information should be collected to establish a civil penalty case: (Figure E1-17)

Information Class	Information to Collect
Vessel Data	<ul style="list-style-type: none"> Vessel type; length of ship; last port of call/date; next port of call/date, distance of voyage; number of crew members.
Discharge Data	<ul style="list-style-type: none"> Type of suspected discharge (oil, chemical, garbage/plastics); date/time of discharge; quantity of discharge; cause of discharge; description of discharge.
Location Data	<ul style="list-style-type: none"> Location of ship when discharge occurred (Lat/Long, if known); body of water; miles from shore, if known.
Evidence	<ul style="list-style-type: none"> Ship master's explanation, statement from witnesses, crew members or passengers; photographs or video tapes; discharge samples taken.
Observer Data	<ul style="list-style-type: none"> Name/address of observer; phone; date/time of report; location of observer at time of observation.

SECTION E: INTERNATIONAL CONVENTIONS, TREATIES, STANDARDS, AND REGULATIONS**CHAPTER 1: MARPOL 73/78 VESSEL REQUIREMENTS**

While it is ideal to collect the information listed above, such details are often not available, especially during a Coast Guard or APHIS boarding. In most of these cases, there will be only prima facie evidence. However, these cases should be developed to the fullest, and, when jurisdiction can be established, forwarded for prosecution. A prima facie case that plastics have been discharged in violation of Annex V may be established if:

- (a) There are no plastics on board for disposal ashore;
- (b) It is evident from inspection that plastic materials are used on the vessel;
- (c) There is no functional incinerator on board or other reasonable explanation as to lawful disposal practices; and
- (d) There is no evidence of disposal to a reception facility since the vessel's arrival in port.

**An APHIS PPQ Form 288 (Figure E1-15) alone containing certain information can be the basis for a strong prima facie MARPOL V case. If the PPQ Form 288 indicates that the crew of a vessel uses plastic materials, but that the vessel has arrived in port after several days at sea with fl~ plastic trash on board, and if the vessel has no incinerator or receipts from shore disposal, there may be sufficient evidence to prove that the violation occurred in water subject to the jurisdiction of the U.S. To build such a case successfully, the COTP must consider several factors: where was the vessel's last port of call, the length of the vessel's voyage, the number of crew members, and the estimated amount of time the vessel traveled in water subject to the jurisdiction of the U.S. before entering port. It can be assumed that waste including plastic is generated during each shipboard meal. If a vessel has traveled the last leg of a journey in U.S. waters (often a distance of 200 nautical miles (360 kilometers) or more, over a time period of 12 hours or more) and arrives in port with no trash at all, it is likely that trash generated during that time period was discharged in water subject to the jurisdiction of the U.S. prior to entering port. (This determination of U.S. jurisdiction cannot be made when an area's EEZ does not extend out to 200 nautical miles (360 kilometers), such as around Miami.) To strengthen the case, the COTP should contact the vessel's previous and subsequent ports of call to determine and document whether the vessel off loaded waste in either port.

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If U.S. jurisdiction cannot be established, whether it be an APHIS-generated case or any case of suspected noncompliance with MARPOL, it is important that the case be forwarded to the vessel's flag State for enforcement action. In these cases, the evidence should be documented by using the MSIS PSAR/PSDR product set and the evidence (PPQ Form 288, CG boarding form, photos, etc.) forwarded to G-MOR for transmittal to the flag State. These cases should be sent to G-MOR within two weeks of the boarding or receipt from APHIS in order to forward the information to the flag state in a timely manner. Each unit should maintain copies of the case files forwarded for flag State enforcement.

**8. Class D
Felony Cases/
Referral to
Department of
Justice**

Cases in which MARPOL 73/78 Annex V is proven to have been "knowingly" violated are considered class D felony cases punishable by imprisonment of not more than 6 years (18 U.S.C. 3581(b)(4)1 and a fine of not more than \$250,000 for an individual (18 U.S.C. 3571(b)(3)) or not more than \$500,000 for an organization (18 U.S.C. 3571(c)(3)1. Class D felony MARPOL cases shall be developed for referral to the U.S. Attorney via D(l).

**9. Reports From
Private
Citizens**

All Coast Guard units should be prepared to receive reports of violation from the public, interested parties, environmental groups, state and local agencies, and other Federal agencies. Coast Guard personnel are directed to be responsive to callers and immediately record any such violation reports. Captain of the Port (COTP) offices, groups and small boat stations may use the Observer Marine Pollution Sighting Report (Figure E1-17) to record as much useful information as the caller can provide. Groups and stations shall send reports of MARPOL violations to the nearest COTP for action. COTPs shall send a letter acknowledging all citizen reports received and provide the reporting party with an explanation of the steps being taken to process the case.

**10. Placards,
Waste
Management
Plans, and
Refuse
Record-
Keeping for
Ships**

- a. Placards. All U.S. vessels 8 meters or more in length and floating platforms in transit must display MARPOL Annex V placards in prominent locations and in sufficient numbers so that they can be read by the crew and passengers. The placards must inform the reader of the discharge restrictions of Annex V. Specific requirements for the placards can be found in 33 CFR 151.59. Foreign flag vessels are not required to have placards.

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Waste
Management Plans

- b. Waste Management Plans. All oceangoing U.S. vessels of 12 m (40 ft) or more in length and all fixed or floating platforms are required to maintain a written waste management plan on board. Specific requirements for the placards can be found in 33 CFR 151.57. Foreign flag vessels are not required to have waste management plans. The plan should:
- (1) Provide for the discharge of garbage by means that meet Annex V requirements;
 - (2) Describe the procedures for collecting, processing, storing, and discharging garbage; and
 - (3) Designate the person who is in charge of carrying out the plan.

Refuse Record-
Keeping for Ships

- c. Refuse Record-Keeping for Ships. A notice of proposed rulemaking was published in the Federal Register May 20, 1993 requesting public comment on the proposal to require all manned oceangoing U.S. vessels 12 m (40 ft) or more in length, engaged in commerce and all fixed and floating platforms to keep records of garbage discharges and disposals. This requirement specifies only the content of information that should be recorded without specifying in what format or document it be kept. When the final rule is published and 33 CFR 151.55 has been amended, boarding officers will check the garbage discharge entries to determine waste handling practices and level of compliance. This requirement is mandated by the Marine Plastic Pollution Research and Control Act of 1987.

11. Violations and MARPOL Annex V cases shall be entered into MSIS in the Marine Casualty or Port Safety MSIS Entries product sets depending upon the circumstances of the case.

- a. MARPOL Annex V discharge violation in which U.S. Jurisdiction can be proved shall be entered into the Marine Casualty (MC) product set. You are required to file a Marine Casualty Description Details (MCDD) for each case as follows:
- (1) Under event: Fill in Type as "pollution"; Class as "minor"; State as "vessel's stores"; and leave Prec. Events blank.
 - (2) Under Causal/Enabling Factor: fill in CAT as "EF"; SUBJ as 1 (unless more than one vessel); TYPE as "HA" (Habitation); MODIFIER 1 as "NEC."
 - (3) Mark "X" in the supplement slot to file an Marine Casualty Discrepancy Report (MCDR).

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- (4) Complete MCDR, using "discharge of plastic or garbage" as description for NEC. Mark "Y" in Legal Actions entering "SPEC" as 33 CFR 151.67.
- (5) Process a Marine Violation (MV) case identifying this (MC) case number as the detection case.

MARPOL Annex V
Discharge
Violations

- b. MARPOL Annex V discharge violations in which U.S. jurisdiction cannot be proved and the case will be forwarded to G-MOR for flag State referral shall be entered into the Port Safety Activity Report/Port Safety Discrepancy Report (PSAR/PSDR) using the following codes: system (HA); sub-system (NEC); description for "NEC" (DISCHARGE OF PLASTICS).

MARPOL Annex V
Prevention
Violations

- c. MARPOL Annex V prevention violations (placards, waste management plans, refuse record books) shall be entered into PSAR/PSDR using the following codes:

FOR PLACARD VIOLATIONS:	<i>System</i>	(DOCS, LIC, PMTS)
	<i>Sub-System</i>	(NEC)
	<i>Description for "NEC"</i>	(NO MARPOL PLACARD)
FOR WASTE MANAGEMENT PLAN VIOLATIONS:	<i>System</i>	DOCS, LIC, PMTS)
	<i>Sub-System</i>	(PLAN)
	<i>Specific Sub-System Item</i>	(NEC)
	<i>Description for "NEC"</i>	(NO MARPOL V MGMT PLAN)
FOR REFUSE RECORDKEEPING VIOLATIONS:	<i>System</i>	DOCS, LIC, PMTS)
	<i>Sub-System</i>	(RECORD BOOK)
	<i>Specific Sub-System Item</i>	(NEC)
	<i>Description for "NEC"</i>	(NO REFUSE RECORDS)

SECTION E: INTERNATIONAL CONVENTIONS, TREATIES, STANDARDS, AND REGULATIONS**CHAPTER 1: MARPOL 73/78 VESSEL REQUIREMENTS****G. MARPOL 73/78 REPORTING REQUIREMENTS AND INSTRUCTIONS**

Open, clear and timely communication both within the Coast Guard and among Parties to MARPOL 73/78 and the International Maritime Organization (IMO) is paramount to the effective and consistent implementation of MARPOL 73/78. As a Party, the U.S. is required to cooperate in the detection of violations and the enforcement of MARPOL 73/78, to use all appropriate and practical measures for detection and environmental monitoring, and to institute adequate procedures for reporting and accumulating evidence (Article 6). To comply with this provision of MARPOL 73/78, it is necessary for the Coast Guard to submit annual reports concerning alleged violations, spill response activities, enforcement actions and programmatic information to the IMO and to other Parties.

- 1. Notification** COTPs shall notify G-MOR in writing of all MARPOL cases being processed against foreign flagged vessels (both for flag State referral and U.S. penalty action). Under the Law of the Sea convention, the U.S. is required to notify flag State administrations of all MARPOL violations against foreign vessels.
- a. In MARPOL cases in which U.S. jurisdiction cannot be established, COTPs shall continue to send G-MOR all case evidence to be forwarded for flag State enforcement.
 - b. In MARPOL cases where the Coast Guard can prove U.S. jurisdiction and intends to process for penalty, COTPs need only send basic information (vessel name, vessel identification number and MSIS case number) to notify G-MOR that a case has been initiated. G-MOR will then notify the flag State administration of the pending case.
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SECTION E: INTERNATIONAL CONVENTIONS, TREATIES, STANDARDS, AND REGULATIONS

CHAPTER 1: MARPOL 73/78 VESSEL REQUIREMENTS

**2. Offshore
Sighting
Reports**

Commanding officers of oceangoing surface units and aircraft commanders shall report sightings of discharges (Oil, NLS or garbage) as follows:

Units shall report by PRIORITY message addressed to the Coast Guard's National Response Center with an information copy to Commandant (G-MOR) with the following sighting information:

P (Date Time Group)
FROM: (Name of unit)
TO: COGARD NATIONAL RESPONSE CENTER WASHINGTON DC
INFO: COMDT COGARD WASHINGTON DC//G-MOR//
Parent Area
Parent District
Districts in which patrol was conducted
Other addresses as appropriate
BT
UNCLAS //16450//
SUBJ: MARPOL ENFORCEMENT REPORT
1. Discharge Sighting Information:
A. Discharge Sighting #1
(1) Location of discharge
(2) Date and time of sighting
(3) Name and flag or home port of suspect ship
(4) Ship's position at time of sighting
(5) Ship's last port of call
(6) Ship's next port of call
(7) Discharge size and amount
(8) Name(s) of person(s) making report
(9) Additional information
B. Discharge Sighting #2, #3, etc...(Provide same information as above)

SECTION E: INTERNATIONAL CONVENTIONS, TREATIES, STANDARDS, AND REGULATIONS

CHAPTER 1: MARPOL 73/78 VESSEL REQUIREMENTS

- 3. Vessels of Particular Interest (VPI) Notices** Upon receipt of a report of violation, Commandant (G-MOR) will designate ships suspected of unauthorized discharges as Vessels of Particular Interest (VPI) in MSIS for high priority boarding at the next U.S. port of call. The Coast Guard will board suspected U.S. or foreign ships in ports under U.S. jurisdiction to investigate alleged MARPOL 73/78 violations. The VPI message will follow the standard format below.

MARPOL VPI (number) 14/V (ship name) IS
SUSPECTED OF VIOLATING MARPOL 73/78 (date) AT
(location). BOARD AT NEXT U.S. PORT AND
CONDUCT INVESTIGATION. NOTIFY COMDT (G-MOR)
BY ROUTINE MESSAGE OF INVESTIGATION RESULTS AND
ENFORCEMENT ACTIONS TAKEN • **

- 4. Observer Marine Pollution Sighting Report** Personnel observing discharges offshore or noting evidence of illegal discharge during an inspection may complete an Observer Marine Pollution Sighting Report (Figure E1-17) to document their observations. It should be included in an MSO/COTP investigation. This format may be used for reports from anyone for any type of discharge.