



**MEDITERRANEAN ACTION PLAN (MAP)
REGIONAL MARINE POLLUTION EMERGENCY RESPONSE CENTRE FOR THE
MEDITERRANEAN SEA (REMPEC)**

Meeting on the Establishment of a Network of
Law Enforcement Officials relating to MARPOL
in the Mediterranean Sea (MENELAS)

REMPEC/WG.33/INF.4
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Agenda Item 6

**EXTRACTS FROM THE DRAFT REVISED VERSION OF THE
IMO PUBLICATION “MARPOL - HOW TO DO IT”**

Note by the Secretariat

SUMMARY

Executive Summary: This document contains extracts from the draft revised version of the IMO publication “MARPOL – How to do it”.

Action to be taken: *For information only.*

Related documents: REMPEC/WG.33/INF.3.

1. The IMO publication entitled “MARPOL – How to do it” (Manual on the practical implications of ratifying and implementing MARPOL) was first published by IMO in 1993 to provide advice on the process of ratification, implementation and enforcement of MARPOL and its Annexes. This publication was revised in 2002 and a new version is expected to be published by IMO before the end of this year.

2. The publication provides useful practical information to Governments on the technical, economic and legal implications of ratifying, implementing and enforcing MARPOL.

3. The Annex to this document contains extracts from the draft revised version of the “MARPOL – How to do it” publication expected to be published by IMO before the end of this year. The extracts reproduce parts of the publication regarding jurisdiction and enforcement of the MARPOL Convention.

ANNEX

EXTRACTS FROM THE DRAFT REVISED VERSION OF THE
IMO PUBLICATION "MARPOL - HOW TO DO IT"

4 JURISDICTION

4.1 Overview

4.1.1 *MARPOL and the International Law of the Sea*

MARPOL, article 9(3) requires that jurisdiction be construed in light of international law in force at the time of application or interpretation of MARPOL. Such international law, as set forth in the 1982 United Nations Convention on the Law of the Sea (UNCLOS), describes the circumstances, safeguards, and geographical zones of coastal, flag and port State jurisdiction, among other things. Thus, for many Parties to MARPOL, international law affects how MARPOL will be enforced. For ease of reference, MARPOL provisions which are complementary to, or require interpretation in light of, the provisions of UNCLOS are cross-referenced in the overview below:

MARPOL/UNCLOS CROSS REFERENCE

MARPOL SECTION	UNCLOS SECTION
1(1)	94, 217(1)
4(2)	21(1), 56(1)(B), 211, 220, 228, 231
4(3)	217(7)
5	217(3)
5(2)	217(2)
6	218
7	226(1), 232
9(3)	91, 217, 220, 218
10	287

4.1.2 *Forms of jurisdiction*

In discussing jurisdiction it is essential to distinguish between a State's competence to prescribe legislation for individual ships (legislative jurisdiction), and its competence to enforce legislation thus prescribed (enforcement jurisdiction). Secondly, the legislative or enforcement jurisdiction that a State has in respect of a particular ship varies depending on whether it is a flag, coastal or port State.

The legislative and enforcement jurisdiction and responsibilities of flag, coastal and port States are more fully described in the sections below. However, all States, in implementing MARPOL, are required to apply its requirements so that ships of non-Parties to MARPOL receive no more favourable treatment than ships of Parties. See MARPOL, article 5(4).

4.2 Flag State jurisdiction

4.2.1 *Legislative jurisdiction and obligations of the flag State*

The primary responsibility for the implementation of international standards and regulations relating to ships is held under the jurisdiction of the flag State. These international standards include MARPOL. MARPOL, article 1(1) requires Parties to give effect to the Convention including all Annexes by which they are bound. In taking these measures, flag States are required to conform to generally accepted international regulations, procedures and practices. For MARPOL, these regulations, procedures and practices can be found in the articles, Protocols, Annexes, unified interpretations of the Annexes, and IMO circulars and publications relating to MARPOL.

The flag State has two main responsibilities in ensuring that its ships comply with the technical standards set by MARPOL. First, it must survey and inspect ships at periodic intervals. Second, it must issue relevant certificates showing that, according to their size and type, its ships are in compliance with the Annexes they are Party to.

Administrations are required to conduct surveys of certain ships to determine the existence of certain equipment and procedures mandated by MARPOL, to approve the equipment and procedures, and to ensure that the condition of the ship as stated on any certificate issued conforms with the actual condition of the ship. The survey requirement under flag State control is the most detailed. Surveys are required under Annexes I, II, IV and VI of the Convention. Ships and equipment are subject to mandatory initial, annual, intermediate, renewal and periodical surveys (see MARPOL, Annex I, regulation 6; Annex II, regulation 8; Annex IV, regulation 4 and Annex VI, regulation 5). Unscheduled inspections for compliance with Annex I are also authorized, as are surveys after an accident occurs or a defect is discovered that could affect compliance with Annexes I, II, IV or VI. It should be noted that under Annex IV no annual and no intermediate surveys are required.

After a survey, Administrations are required to ensure that ships under whose authority they are operating, carry and are issued certificates demonstrating compliance with various MARPOL, Annexes (see Annex I, regulations 7-10; Annex II, regulations 9-10; Annex IV, regulations 5-8 and Annex VI, regulations 6-9). Where a flag State authority finds non-compliance with Annex I, II, IV or VI, the authority withholds issuing the applicable certificates or shall withdraw any certificates previously issued until compliance with the terms of the certificate (and thus the substantive terms of the Convention) is achieved. See MARPOL, Annex I, regulation 6.3.4, Annex II, regulation 8.2.6, Annex IV, regulation 4.6 and Annex VI, regulation 5.3.3. Further, flag States must prohibit non-compliant ships from sailing until they can proceed to sea in compliance with MARPOL, or can proceed to the nearest repair yard without presenting an unreasonable threat to harm the marine environment (see MARPOL, article 5(2), Annex I, regulation 6.4.1, Annex II, regulation 8.3.1, Annex IV, regulation 4.7 and Annex VI, regulation 5.3.4). Certificates provide prima-facie evidence that the ship complies with the requirements of MARPOL: each "shall be accepted by other Parties and regarded for all purposes covered by the present Convention as having the same validity as a certificate issued by them". See MARPOL, article 5(1).

4.2.2 *Enforcement jurisdiction of the flag State*

MARPOL obliges Administrations to prohibit violations of the Convention. Further, Administrations are required to investigate reports of violations, and if sufficient evidence is available, institute proceedings in accordance with its law (see MARPOL, articles 4(1) and 6(4)). If the alleged violation occurs in the jurisdiction of another coastal or port State, the

flag State shall receive evidence from the affected Party, and may ask for further or better evidence to enable proceedings to be brought.

Administrations are further required by MARPOL, article 4(1) to establish appropriate sanctions for violations.

In some instances, allegations of a violation are reported by a State other than the flag State. After receiving these reports, the flag State must inform the reporting State and IMO of the action taken by it in response to the allegation. See MARPOL, article 4(3).

4.3 Jurisdiction of the coastal State

4.3.1 *Legislative jurisdiction of the coastal State*

MARPOL, article 4(2) requires that coastal States (Parties) prohibit violations and establish sanctions for any violation of the Convention that occurs in their jurisdiction. In the territorial sea, the coastal State enjoys sovereignty, and with it the power to apply national law, subject to conformity with generally accepted principles of international law.

Some coastal States claim an Exclusive Economic Zone (EEZ) in accordance with the principles described in UNCLOS Part V. In the EEZ, the coastal State has jurisdiction with regards to the protection and preservation of the marine environment. Thus, MARPOL may be applied consistent with this grant of jurisdiction.

4.3.2 *Enforcement jurisdiction of the coastal State*

MARPOL does not specifically address the enforcement jurisdiction of coastal States, other than the requirement contained in article 4(2) either to cause proceedings to be taken in accordance with coastal State law, or to furnish information and evidence regarding the violation to the flag State Administration of the ship involved.

If a foreign ship is voluntarily in a port of an affected coastal State, that State may institute proceedings for any violation of MARPOL that has occurred within the territorial sea or EEZ of the coastal State.

If a foreign ship is navigating in the territorial sea of a coastal State and there are clear grounds for believing that, during its passage in the territorial sea, the ship has committed a violation of the coastal State's laws implementing MARPOL, the coastal State may inspect the ship, and if the evidence so warrants, institute proceedings.

If a foreign ship is navigating in the territorial sea or EEZ of a coastal State and there are clear grounds for believing the ship has committed a violation of the coastal State's laws implementing MARPOL in the EEZ, the coastal State may require the ship to give *its identity, ports of call and other* relevant information to establish if a violation has occurred. If that violation results in a substantial discharge or threatens significant pollution to the marine environment in the EEZ, the coastal State may inspect the ship if the ship refuses to give the information requested, or the information requested is manifestly at variance with the evidence. When there is clear objective evidence that the violation has, in fact, resulted in a substantial discharge or threatens significant pollution to the marine environment in the EEZ, the coastal State may institute proceedings. However, for violations occurring in the EEZ, the coastal State must suspend proceedings and transfer them to the flag State if the flag State also institutes proceedings within specified time limits.

Coastal States instituting proceedings against a foreign ship must notify the flag State and IMO of any measures or proceedings taken for violations of MARPOL, except that for violations occurring in the territorial sea, only proceedings need be reported.

4.4 Jurisdiction of the port State

4.4.1 *Legislative jurisdiction of the port State*

MARPOL, article 4(2) requires Parties to prohibit violations of the Convention and provide for sanctions for violations within their jurisdiction, including in ports. If conditions for entry into port involve requirements for the prevention, reduction and control of pollution, however, the port State must give due publicity to such requirements to IMO.

4.4.2 *Enforcement jurisdiction of the port State*

MARPOL does not leave the question of compliance enforcement to the flag State alone. A port State can exercise enforcement jurisdiction against any ship visiting its ports to ensure compliance with, and to detect violations of MARPOL. The jurisdictional rights of port States include:

4.4.2.1 *Inspection of certificates*

Pursuant to MARPOL, article 5, ships required to hold certificates issued pursuant to the Annexes to MARPOL are subject to having those certificates ready for inspection by authorized port State control officers (PSCO). This certificate inspection is initially limited to verifying that a valid certificate is on board the ship. However, if there are clear grounds for believing the condition of the ship or its equipment is not substantially in compliance with the terms of the certificate, a more thorough inspection may be conducted.

Where non-compliance is revealed, port States must not allow such ships to sail unless they can do so without presenting an unreasonable threat of harm to the marine environment. Frequently, the port State's most effective sanction is therefore to detain the ship in port until it can be repaired to a suitable standard or directed to a repair yard. The flag State shall be informed immediately of the steps taken. Further, the ship may be reported to the flag State for appropriate action, or the port State may initiate proceedings under its own law for any violation, which arises from non-compliance with the Convention (see MARPOL, article 4(2)). However, the port State must not unduly delay ships (see MARPOL, article 7).

4.4.2.2 *Inspection to detect violations of the discharge standards*

Pursuant to MARPOL, article 6, a ship in any port may be subject to inspection for the purpose of verifying whether the ship has discharged any harmful substances in violation of the MARPOL regulations. A report must be made to the flag States when a discharge violation is indicated and flag States must then bring proceedings if satisfied that the evidence is sufficient. The requirement for flag States to bring proceedings, however, does not preempt the right of port States to bring their own proceedings for violations which occur in the territorial sea or internal waters of the port State, or which cause major damage to the port State. See MARPOL, article 4(2).

If a port State receives a request from any Party, it may inspect a ship to investigate whether the ship has discharged harmful substances or effluents containing harmful substances in excess of the quantity allowed in any place, provided the port State also receives sufficient evidence from the requesting Party that the discharge occurred. See MARPOL, article 6(5).

4.4.3 *Extended port State enforcement jurisdiction*

In addition to the power to investigate and initiate proceedings for violations occurring within the port State the port State has the power to investigate and take proceedings for discharge violations wherever they have taken place. This power covers violations within the internal waters, territorial seas and exclusive economic zone (EEZ) of another State. In these

instances, the port State may only take proceedings in response to a request from States damaged or threatened by the discharge violation, or in response to a request by the flag State concerned. However, the affected coastal State does enjoy a right of pre-emption, that is, it can request that any investigation, records or proceedings by the port State be suspended and transferred to the coastal State.

Except in cases of violations occurring inside the territorial sea of a coastal State, or a violation causing major damage to the coastal State, the flag State can insist on taking control of any proceedings for any violation which occurs outside the territorial sea of the coastal or port State. The flag State must continue the proceedings, and it loses the right of pre-emption if it repeatedly disregards its obligation of effective enforcement of international regulations.

4.5 No oppressive exercise of authority

In exercising any of these enforcement powers, coastal or port States must observe certain safeguards whose purpose is to prevent oppressive exercise of their authority. In particular, they must not act in a discriminatory fashion. These safeguards include:

4.5.1 *Prompt investigations*

States shall not delay a ship longer than is essential for purposes of investigation. Further, if an investigation or inspection reveals a violation, a ship must be released once a reasonable bond or other financial security is posted, unless releasing the ship would pose an unreasonable threat of damage to the environment. Failure to release a ship once it has posted a bond or acceptable financial security (assuming no threat of environmental damage) may result in implementation of dispute resolution proceedings held in accordance with MARPOL, article 10. States that unduly delay or detain ships shall be liable for compensating for loss or damage suffered. See MARPOL, article 7(2).

4.5.2 *Sanctions*

In imposing sanctions for violations, States may impose only monetary penalties, except in the case of a wilful and serious discharge in violation of MARPOL that occurs in the territorial sea of the affected State.

States Parties to MARPOL should take due care to reflect the above-mentioned provisions in enabling national legislation.

4.6 Enforcement regime

MARPOL obligates Contracting Parties to enforce laws and regulations relating to the prevention, reduction and control of pollution of the marine environment from ships flying their flag and from foreign ships operating within their jurisdiction. Ensuring compliance takes many forms, the ultimate of which is prosecution. While States Parties are required to provide adequately for the prosecution of MARPOL violations, there does not appear to be any consensus internationally as to the characterization of MARPOL offences. Civil law jurisdictions usually treat such offences as “minor”, “serious” or “aggravated”, that is, according to the degree of the severity of the damage caused. Some common-law jurisdictions treat these as “strict” or “absolute” liability offences. Some jurisdictions adopt the so-called “half-way house” approach for MARPOL offences. In this characterization, the offence would be treated as one of “strict liability”, subject to affording the violator the defence of due diligence, i.e., the onus would be on him to show that he took all reasonable precautions and exercised all due diligence to avoid the commission of the offence.

4.7 Prosecuting offences

Prosecution strategy and tactics will depend largely on the applicable legal system under which a violation is prosecuted, the underlying national law implementing MARPOL, the provisions violated, and the nature of the violation. Nevertheless, there are some common concerns that should be considered regardless of these variables. These include jurisdiction, presentation of evidence, standards of proof of violation, the nature of sanctions imposed (administrative, civil and penal), and the rights of the accused. A Government seeking to proceed against a person accused of violating MARPOL must first establish jurisdiction over the accused or any property that may be subject to seizure and forfeiture.

Governments should be mindful of their own judicial, administrative and enforcement constraints when developing systems for prosecuting MARPOL offences. While severe sanctions can be effective deterrents, they can also require an expensive and burdensome proof process which is, in itself, a deterrence to the policing authorities. Governments should consider providing a range of options to the enforcement authorities for the prosecution of violations. This range could include warnings on the spot for minor violations; "tickets" on the spot for minor violations which would justify more than a warning; and citations to be handled at three levels: at magistrate level, higher civil court level, and at criminal court level.

Certain common law jurisdictions use administrative sanctions in lieu of criminal sanctions for environmentally related and regulatory offences such as are applicable under MARPOL. Two key factors have promoted this development. First, the cases can be disposed of quickly rather than going through a time-consuming court process and are also less costly. Second, the use of administrative sanctions obviates the need for the process of complex methods of proof that is required to establish guilt for criminal offences. Under a system of administrative sanctions, a Government may wish to provide the power to compound offences or provide for the increase of the stated fine, under certain instances.

Sanctions, be they administrative or penal in nature, would, by and large, consist of fines. It would be reasonable to provide for a range with a minimum and maximum level, with the exact amount of the fine being dependent on the severity of the offence.

4.8 The Administration

The primary responsibility for ensuring compliance with MARPOL rests with the Administration as defined in article 2(5). The Administration must have the necessary authority and resources to administer, enforce and ensure compliance with the provisions of the Convention. The Administration may, however, under the restraints imposed by the Convention, entrust certain tasks to surveyors nominated for the purpose or to organizations recognized by it. Nevertheless, the Administration shall fully guarantee the completeness and efficiency of the tasks so delegated and shall undertake to ensure the necessary arrangements to satisfy this obligation.

PART II: PREPARATIONS

5 MEANS OF MEETING OBLIGATIONS

5.1 Participation

Accession to MARPOL and its implementation require the participation of the following:

- .1 Government of the State (the political body having power to conclude international agreements)
- .2 Administration - Legal
- .3 Administration - Maritime
- .4 Shipowners
- .5 Port authorities

Each sector should know exactly what its institutional rights, obligation and responsibilities are, and the responsibilities of its staff and the requirements to be imposed on ships and ports.

5.2 Government of the State

The political desire of a State to accede to or ratify MARPOL is fundamental. Governments may wish to become Parties to MARPOL as a result of:

- .1 marine environmental concerns for waters under their jurisdiction;
- .2 concerns over air quality, which affects the populations, or land areas under their jurisdiction;
- .3 benefits to their shipowners (worldwide acceptance of ships);
- .4 benefits to their ports (means of control of pollution); or
- .5 concern for the worldwide environment.

Advice to Governments may come from the public at large, from their own maritime or environmental administration bodies and from their maritime industry.

It should be recognized that whereas Parties to MARPOL have obligations, they also have privileges. Parties accept the obligation not to discharge harmful substances into the sea or to control the discharge of pollutants to the atmosphere, in return for which they have the privilege of not being polluted by other Parties. (If they are, and the pollution occurs within their territorial waters, they can prosecute). A non-Party does not accept the obligations to place restrictions upon its ships and, therefore, its ships cannot be prosecuted for failing to comply (except in the territorial waters of a Party if apprehended and Parties shall apply the requirements of the present Convention as may be necessary to ensure that no more favourable treatment is given to such ships). It has to accept, however, that failure to accept such obligations means that when its own shoreline is polluted or air quality affected it does not have the privilege under MARPOL to insist upon the prosecution of the ship concerned.

5.3 Administration – Legal

Once the political desire has been established and a decision made to become a Party, it is necessary to consider the means of ratifying and implementing MARPOL. This aspect is covered in chapter 22.

5.4 Administration – Maritime

The marine administration will have by far the greatest administrative task in the implementation of MARPOL. It is likely that this body will provide advice to the legal branch and the Government of a State on one hand, and will advise the shipping industry and port authorities on the other. These aspects are covered in chapter 22.

5.5 Shipowners

Shipowners will need to design, construct and equip ships and train seafarers, especially their merchant marine officers, in order to meet the requirements of MARPOL. An outline of these requirements is given in part IV of this manual, implementing the regulations, chapters 9 to 14, under the heading of the respective Annexes of MARPOL.

5.6 Port authorities

The main concern of port authorities, next to enforcement in port, will be the provision of adequate reception facilities. The requirements are given under the heading of the respective Annexes of MARPOL in chapters 9 to 14 and chapter 15 of this manual.

5.7 Consultation

When a State is considering acceding to or ratifying MARPOL it is likely that many organizations that fall within the foregoing categories (paragraphs 5.2 to 5.6) will need to be consulted in order to be properly prepared to implement and enforce all of the obligations and requirements.

5.8 Impact of MARPOL

When considering the necessary means of meeting its obligations under MARPOL, a State should recognize that the impact will vary according to whether it is a flag State, a port State or a coastal State. Most States will be all three, but some may be very large flag States but have little in the way of port or coastal State responsibilities. The impact of MARPOL will also vary with the trade of a port State and the type of ship for a flag State. For example, a flag State may have a large fleet of chemical tankers and consequential responsibilities under MARPOL Annex II but little concern as a port State because it does not import or export noxious liquid substances in bulk (see further comments under chapters 9 to 14 of this manual).

5.9 Obligations

All sectors involved with MARPOL need to consider and meet their obligations with respect to:

- preparation of legislation, including regulations
- survey

- inspection
- design and constructional requirements
- equipment requirements
- operational requirements
- documentation
- procedures
- agreements with other Governments

5.10 Developing a compliance strategy for the Convention

5.10.1 *Why compliance?*

Article 1(1) of MARPOL requires all Parties to the Convention to "undertake to give effect to the provisions of the present Convention and those Annexes thereto by which they are bound, in order to prevent the pollution of the marine environment by the discharge of harmful substances or effluents containing such substances in contravention of the Convention". In accordance with this obligation, a Party to MARPOL will need to implement a range of monitoring, compliance and enforcement mechanisms to give force and effect to the Convention. Compliance with the Convention should primarily focus on preventing pollution, and not simply on apprehending and punishing violators. The extent to which education, incentives, monitoring and policing programmes are used by a State to ensure compliance with MARPOL depends upon the type of jurisdiction that the State enjoys over a ship (see chapter 4).

5.10.2 *Strategies for ensuring compliance*

An effective compliance programme should incorporate all of the following elements:

- .1 compliance monitoring through routine inspections, surveys, and/or examinations (see chapter 21);
- .2 detection and policing patrols (see chapters 20 and 21);
- .3 reporting procedures and incentives, including incentives for self-reporting (see paragraph 20.6);
- .4 adequate investigations of violations reported or otherwise detected (see chapter 20);
- .5 a system of adequate sanctions in respect of violations (see chapter 7);
- .6 education and public awareness programmes (see paragraph 5.10.3); and
- .7 co-operation and co-ordination with other Parties (see paragraphs 3.6 and 5.10.4).

A compliance programme should be adaptable enough to allow compliance priorities to respond to prevailing circumstances. One or more of its elements may be more salient for a State Party depending on key variables, including the state of the national fleet, the type of ships calling at ports of the State Party, the emergence of new equipment/procedural Convention standards, the availability of human and technological resources within the marine administration, and the familiarity of relevant stakeholders with the Convention.

In setting priorities for a compliance strategy, the marine administration would need to have an idea of which ships have the highest potential for being in violation, or where a violation would be most significant (see also chapter 21).

5.10.3 *Public participation*

Any compliance strategy should take into consideration that resources spent on education and prevention will save resources that might have been spent on prosecution. Education and prevention strategies are necessary to sensitize all potential "observers" and "witnesses" about how they can assist in protecting the marine environment. In this way, they may prove a cost-effective resource for States Parties with limited financial or policing resources. Public awareness and participation can also greatly facilitate the reporting of violations and may also prevent violations that would never have been detected or prosecuted. One means of encouraging reporting of potential MARPOL violations by the general public has proven successful, particularly for incidents involving oil or garbage that are easily observable in the water: bounties. It should be noted that some States' domestic laws do not permit bounties. For other States, bounties are inconsistent with their enforcement objectives. However, for those that wish to consider such incentives, States which utilize bounties have found them to be useful in the detection and prosecution of MARPOL violations.

Public awareness is likely to be most effective when the programmes are directed at site-specific targets, for example, marinas and fishing docks, and at their respective Administrations and users. Public education can also engender more positive behaviour from consumer-oriented operations such as the cruise lines. There should be specific information provided that pollution of the marine environment by oil, hazardous materials, sewage, garbage and air pollution is against the law. There should also be cautionary training that some pollution from these sources may be hazardous and that only officials should come into contact with the material to verify its nature. Because of the potential distribution of, and sensitivity to, air pollution communities and areas concerned may be remote from port activity or the coast, and therefore the spread of the necessary information needs to be that much wider. Included should be information as to how air pollution from shipping contributes to the overall air pollution encountered. Most importantly, the public should know how to contact the official authority responsible for initiating the appropriate response.

5.10.4 *Co-operation and co-ordination of port State control*

Articles 6 and 8 of MARPOL, as well as several important IMO resolutions, lay the ground work for the doctrine of co-operation and interchange as a mutual effort of enforcement among Parties to the Convention.

Such co-operation can be an effective tool in fostering clarity and harmony in implementation and compliance objectives, in collecting evidence, and in enforcement procedures. Co-operation may take several forms, such as joint investigations of violations, supplying information about a particular ship, gathering evidence of a violation, and prosecuting flag State ships within the jurisdiction of another country for provable MARPOL violations. Reciprocal arrangements in respect of investigations and compliance monitoring will be particularly valuable for Parties which are geographically proximate and/or which share common mechanisms for enforcement. Such arrangements can be formally achieved through Memoranda of Understanding (MoUs) on port State control, where participating countries undertake to inspect an agreed percentage of the estimated amount of individual foreign ships entering the ports of the participating States. Several MoUs have set inspection goals in the range of 15% to 30% of Convention ships. Nine MoUs (see figure 2 below) are in existence worldwide, including in Europe, Africa, Asia, Latin America, and the Caribbean. Proper regional co-operation and exchange of boarding results among participating Administrations are an effective enforcement tool and can also reduce the requirement for individual States to board all vessels.



Figure 2 – overview of the nine MoUs on port State control

PART V: TECHNICAL ASPECTS OF ENFORCEMENT

20 POLLUTION DETECTION AND RESPONSE

20.1 Overview

The purpose of this chapter is to provide guidelines to the investigating State on how to detect illegal discharges and secure evidence for the purpose of prosecuting violations of MARPOL. The Annexes I, II, IV, V and VI provide details on discharge requirements such as the minimum distance from the nearest land and the ship being *en route* maintaining course and a minimum speed. Reporting officials and other relevant individuals should pay close attention to these aspects of the discharge regulations. Violations can be broadly described as any acts which are in circumvention of pollution control and discharge provisions, except as expressly provided for (Exceptions) under the relevant regulations.

The key to effective enforcement of MARPOL is straightforward investigation work supported by laws that allow the basic collection and admissibility of legal evidence on all foreign and domestic ships within the State's jurisdiction. This evidence may include statements of witnesses, document (logs) review and analysis, photographs, and other related materials. Depending upon available resources, the investigator may have at his disposal evidence gathering techniques that run the gamut from simple to extremely complex. Since time is often the most serious limiting factor in pollution investigation cases, it is critical that a solid core of material evidence relating to the alleged violated discharge be established as quickly and accurately as possible. The simplest evidence gathering techniques (e.g., photography, interviewing witnesses, obtaining copies of documents, obtaining samples of the discharged material) are often the most expeditious ones, and should normally be employed before more sophisticated approaches are attempted.

Evidence gathering processes should include, where appropriate, standard procedures for: conducting searches; taking samples of material evidence; verifying the validity of certificates; interviewing witnesses; seizing and preserving physical evidence (including instructions for preserving the integrity of the chain of custody); training field investigators, and preparing investigative reports and forms.

20.1.1 *Recording evidence: photographs*

Evidentiary requirements are different in individual States and under different legal systems. Despite these differences, photographs are universally accepted as an excellent way of recording evidence because they document what was actually observed. Colour photographs are generally considered more persuasive than black and white photographs as they provide greater contrast between a pollutant discharge (e.g., an oil slick) and the background. Records of photographs should document the photographer's name, date, time, place, (i.e. geographical co-ordinates), direction of shot, settings, and related information in order to assist enforcement efforts. Lighting may be a constraint in taking colour photographs. One should always be careful when using flash bulbs, electric lighting, or electronic equipment, as they can be a source of ignition around certain flammable atmospheres. If possible, when taking aerial photographs of a vessel trailing a suspected oil slick, care should be taken to ensure some photographs clearly show both the ship (preferably from an angle that "captures" the ship's name on the stern) and the slick in the same frame and a picture ahead of the ship with the ship's bow to prove that the ship is not sailing through an oil trace originating from a ship ahead.

20.1.2 *Recording evidence: Taking samples*

Pollutant discharge sampling is another investigation technique that yields high quality and widely accepted material evidence. Often, a comparison of the physical and chemical attributes of a sample taken from a discharge with samples taken from the fuel and cargo tanks of nearby ships will pinpoint or, at a minimum, help identify the source of the discharge.

As pollutant sampling is a valuable evidence-gathering tool, serious consideration should be given to developing small portable sample kits for use by field personnel during investigations. Such kits should include, at a minimum, several solvent-washed sample jars with screw-capped teflon lids, small glass or pyrex funnels and adhesive labels to ensure security and protect the chain of custody. The addition of several fine mesh teflon screen segments and tweezers to the basic sampling kit will allow field investigators to collect "swish" samples of waterborne oil slicks that are too thin to collect with conventional grab sample techniques. Simple instructions covering the amount of oil to collect, sealing and security of samples, chain of custody procedures, and the delivery process to an analysis lab of samples should also be included.

The key to an effective sampling regime during any pollution investigation lies in a common sense assessment of the most likely sources of the discharge. Potential sources up-wind and up-current of the discharge should be given the highest priority. For oil discharges, the prioritization of ships for sampling should also be based on the type of oil discharged. For example, discharges of diesel oil should lead investigators to concentrate sampling efforts on nearby ships that use marine diesel oil as fuel or on tank ships that are carrying diesel oil as cargo. Conversely, discharges of bunker C oil should lead investigators to concentrate sampling efforts on ships that use heavy fuel oil or on tank ships that are carrying bunker C oil. Discharges that appear to be mixtures of used or "dirty" oils should lead the investigator to concentrate on the sampling of waste oils in the bilges of nearby ships. As waste oil mixtures in bilges are seldom homogeneous, investigators should concentrate their source sampling efforts on those locations closest to overboard discharge points in the bilge. In all cases, investigators assigned to discharge sampling duties should be well versed in the potential personnel hazards posed by pollutants and should take all reasonable precautions to guard against exposure to the substances involved.

20.2 Discharge, observation and investigation

Adequate knowledge of the behaviour of substances discharged into the water is critical to the successful detection and investigation of pollution incidents. Depending upon their specific gravity, chemical composition, and physical state, discharged substances will evaporate, float upon the water (positive buoyancy), mix and disperse into the water column (neutral buoyancy), or sink to the bottom (negative buoyancy). NLS may be miscible (dissolvable) in water – a characteristic that makes their illegal discharge difficult to detect. However, most oils discharged into the water will spread on the surface and float in an easily observable slick.

Oil slicks have several characteristics that simplify the investigator's task of determining the source of the discharge. For example, prevailing water currents and winds generally determine oil slick movement away from a discharge source. Under windless conditions, oil travels in the same direction and at the same speed as the surface current. Oil slicks are also affected by the wind and will travel downwind at approximately 3% of the wind speed. Thus, through vector analysis, field personnel can forecast the movement of oil slicks for response actions, as well as back-track the path of oil slicks to determine the most likely source of the discharge.

While these general wind and current rules apply to oil slick movement on open waters, they are not always the controlling factors in slick movement on confined waters. For example, slick movement in harbours may be strongly influenced by tidal eddies, the wakes of transiting deep draft ships, piers and other manmade obstructions to current flow, and water discharges from shore-side facilities. These complicating factors make the backtracking of an oil slick's movement in a port extremely difficult. Moreover, investigators should realize that some ship berths act as natural collection points for oil slicks in many harbours. At these berths, investigators must avoid the tendency to automatically assume that the oil slick around the ship came from the ship in that berth. In these cases, an investigation of the ship's material condition (e.g., is there evidence of a recent oil spill on the ship's decks or oil staining on the hull?) and a review of the ship's recent operations (e.g., did the ship take on bunkers while at that berth?) may help determine if the discharge came from that ship. Investigators should sample the ship in the berth, as well as surrounding ships in the harbour, as potential sources of the discharge.

As mentioned above, tracing an oil slick's movement in an enclosed harbour or port is often a difficult and inexact process. In such cases, the investigator may find that the oil slick's characteristic collar and door provide a better clue to a discharge's source. For example, a discharge of diesel oil will usually form an amber or straw-coloured slick with a characteristic diesel odour. The logical source of such a discharge would be ships in the vicinity of the slick that carry diesel oil (as either cargo or fuel). Another common example involves discharges of gasoline, which forms a thin, rainbow coloured slick (or sheen) with an unmistakable odour. Investigators in this case should, of course, focus their evidence gathering efforts on nearby recreational ships that use gasoline as fuel or on oil tankers that carry it as cargo. Other types of oil exhibit unique colours, consistencies, and odours. Investigators should use these properties as clues in matching "fresh" discharges to their most probable sources. Investigators should note that oil characteristics will change with prolonged exposure to environmental factors (wind, sunshine, wave action).

Many noxious liquid substance, sewage, and garbage discharges lack distinguishing characteristics that could help link the alleged illegal discharge to the ship. Slicks of noxious liquid substances are usually colourless (though still visible), while garbage or sewage

discharges from ship sources are often indistinguishable from garbage and sewage discharges from shore-side sources. For these pollutants, the proximity of the discharge to a certain ship is a good initial lead as to the potential source. However, a case of this type can only be successfully prosecuted if this lead is reinforced with solid material evidence (photographs, discharge samples, crew statements) that conclusively link the ship to the discharge. The revision of Annex V facilitates collecting evidence as in principle, all discharges are prohibited. There is for instance no longer a need to prove that the distance to the shore was violated.

20.3 Chemical analysis

Chemical analysis of oil and noxious liquid substance (NLS) discharge samples is a sophisticated technique for gathering/confirming evidence in a pollution investigation. Chemical analysis of pollutant samples can sometimes "fingerprint" the discharged oil or NLS and match it exactly with a source. However, in most cases, chemical analysis alone cannot conclusively prove that an oil discharge came from a particular ship. In most cases, the analysis results will only show whether or not the discharged oil is similar to the oil found on board one (or more) of the ships sampled. Sample analysis results of this "similar to the oil found on the ship" nature can be critical supporting evidence in cases where there is additional physical evidence (such as an oil stain on the hull of a ship outlining a path of discharge) that links the ship to the discharge.

Sample analysis relies on gas chromatography (GC) and mass spectroscopy (MS) techniques. Gas chromatography is less precise than mass spectroscopy in determining fine distinctions between similar chemicals. GC is also less expensive than MS and should therefore be used as an initial screening analysis to determine if any of the samples collected from various potential sources are "significant similar to" the discharged pollutant. If there is little or no similarity between the discharged oil and all the samples collected from the suspected source ships, then the sample evidence indicates that none of these ships is the source. Discharge samples demonstrating similarity to one or more of the suspected source ship samples during GC analysis should be further analyzed with the more definitive MS technique.

As discussed above, sample analysis results of the GC and MS techniques usually state that the sample from the suspect source sample is "significant similar to" (with varying degrees of certainty) the discharge sample. Since sample analysis rarely provides a conclusive match between the illegal discharged pollutant and discharge source, it usually must be supported by other types of evidence gathered during the investigation. Moreover, chemical analysis technology is complex and its value in persuading a judge, jury or other adjudicative body that a violation occurred depends upon the ability of a scientist or other technician to explain the process used and its reliability. For this reason, it is recommended that enforcement agencies develop internal expertise or contract only with a limited number of businesses capable of providing the necessary analytical (and expert witness) services.

20.4 Remote sensing techniques

Remote sensing technologies provide another relatively sophisticated means of detecting and investigating pollutant discharges. Sensors can be used to detect floating oil or NLS slicks in cases where such slicks are not observable by the human eye due to darkness, cloudy weather, fog, and other visibility restrictions.

Most remote sensing devices used in pollution response operations are based either on radar or infrared sensor technologies. Radars provide oil and NLS slick imagery (radar returns) by

measuring, comparing, and then displaying the differences in energy wave reflectivity exhibited by an oil or NLS slick and the surrounding waters. Infrared (IR) sensors provide images of oil and floating chemical slicks by differentiating between the temperature of the slick and the temperature of the surrounding waters. Additional remote sensing technologies include ultraviolet sensors and microwave radiometers. While these technologies can locate a potential oil or NLS/chemical slick, they cannot positively identify the type of substance floating on the water. In almost all cases, follow-up visual observations are needed to verify that the floating substance is indeed a pollutant (versus organic matter) and to determine what kind of pollution (i.e., type of oil or NLS) is involved. Thus, the true value of sensor systems lies in their ability to expedite both spill response and investigation operations by locating the pollutant discharge at night or in poor visibility conditions.

All of the sensor technologies described above can be integrated with aircraft navigation systems. Such airborne sensor systems are invaluable in displaying and "mapping" the position of potential oil/NLS slicks and suspect sources. However, it bears repeating that while all of these techniques may be used to detect floating substances, they are not capable of identifying the type or the quantity of the substances comprising the slick. As is the case with chemical analysis, remote sensing information gathered for a pollution investigation generally needs to be supported by other material evidence, including witness reports, photographs, and samples from the discharge and suspect sources.

20.5 Detection of air pollution incidents

Unlike with oil, noxious liquid substances, garbage or sewage related incidents, cases of non-compliance with the various requirements of Annex VI will not generally be detected by means of observing or assessing the particular discharge from the ship. The potential exception to this could be the remote sensing of the emitted exhaust gas plume for SO_x (SO_2) concentration – the higher the sulphur content of the fuel oil the higher the SO_x (SO_2) concentration in the exhaust gas stream – however, while technically possible, there would be the complicating factor of whether, in the overall plume, diesel engine and boiler exhaust gases (with different excess air ratios) had been mixed and it would still be necessary to establish which combustion devices, since it may not be all, had been using non-compliant fuel oil and the particular composition, in terms of sulphur content, of that fuel.

Instead, compliance verification (or in this case the detection of non-compliance) will, in almost all instances, be undertaken by examining the actions taken, or not taken, and procedures followed by the ship's crew together with the actual condition of relevant equipment or aspects such as fuel oil composition. It is the outcome of these investigations which will be the basis for assessing whether or not an air pollution incident has occurred. This inspection based approach is covered in detail in section 21.7 in respect of the various aspects covered by Annex VI.

Aspects such as the controls on NO_x emissions impact on the manner in which diesel engines have previously been operated and serviced while the SO_x and particulate matter controls affect established fuel purchase and/or chartering arrangements. These considerations highlight the need for enforcement to be backed by education and recognition that business-as-usual is not the way forward.

20.6 Reporting

Under article 8 and Protocol I of MARPOL, the master or other person in charge of a ship is required to report any incident involving a pollution discharge or threat of a discharge. MARPOL requires Parties to make arrangements to receive and process reports of these pollution incidents. States receiving reports are required to notify the Administration of the

involved (or suspected) ship, as well as inform any other State which may be impacted by the pollution. This reporting requirement extends to other agencies of a Party that observe pollution incidents. In addition to the Parties required to report pollution by law, other members of the maritime community and the general public may use an established reporting system to report discharges of oil, noxious liquid substances or garbage.

An Administration's competent pollution authority should create and promulgate a standard reporting form to capture reported data on pollution incidents. The report form should be designed so that it includes questions that elicit basic pollution discharge information from a non-professional (a member of the general public), as well as questions that solicit detailed data of the type that might be provided by a professional responder. This form should provide space for a summary of the observation report and space for a listing of suspect sources of the discharge. The reporting network should include procedures to gather data from other ports or States.

The Administration should clearly identify the main point of contact(s) for receiving and responding to pollution reports. The Administration should proactively notify the maritime community and the general public of this point of contact(s) and of the responsibilities delegated to it. Ideally, the official contact point for pollution reports should also have the necessary equipment and facilities to initiate a response. Moreover, the point of contact for pollution reports should also be the source of historical records of incidents. These historical records can be used to assess the probability and relative risk of pollution incidents occurring at various coastal locations. These records can also be used to allocate and deploy pollution detection and investigation resources in a manner that most effectively deters illegal oil and noxious liquid substances discharges or air pollution. For easy reference, an itemized list of possible evidence of contravention of the MARPOL Annex I discharge provisions is given in appendix 18 of this manual.

In addition to those reporting sources noted above, reports of pollution may also be received from sources outside the Administration. For example, another ship, agency, or State may provide information of a ship discharging harmful substances. Such information should be corroborated with covert, remote observations while the ship is underway or at anchor or by targeting it through thorough examination of its papers and equipment. In other instances, a confidential source may have reported the alleged illegal discharge, or may have information that leads to the identification of a ship responsible for one or more discharges. Such a confidant may be a crew member or passenger from the suspected ship. In such cases, steps must be taken to protect the confidentiality of the information source during and after the reporting and investigation phases. Since confidential sources often report discharges at the possible risk of losing their livelihoods, it is imperative that trained investigators commence response and investigation activities immediately. This immediate response helps maintain the confidentiality of the informant, while improving the quality of the evidence gathered for the violation case.

While many alleged illegal discharges are detected as a result of reports, pollution may also be discovered through routine or targeted patrols or on board inspections. Patrols are most effective when the area and timing of patrols is scheduled based on analysis of historical pollution sightings or incidents. This type of comparative risk analysis for patrol deployment or inspection purposes should also include provisions for high risk factors such as known ship bunkering activity, known location of "repeat offender" ships, and known location of ships preparing to depart port.

20.7 Prosecuting offences

In all cases leading to possible prosecution, investigators should follow a standard procedure and chain of custody policy to ensure the evidence is preserved correctly. All evidence obtained during the investigation, such as the remote sensing data, the witness report, the sample analysis, on board condition of relevant equipment, fuel oil sulphur content and other additional information, results in an official statement. This statement, according to article 8 of MARPOL, must be relayed to the Administration of the ship involved whenever violations are suspected, including when the alleged violation is observed outside the jurisdiction of the observing country.

States should also attempt to create and maintain an accurate and current database of all violations. It is helpful to categorize the violations based on:

- .1 violator's identity;
- .2 type of violations; and
- .3 geographic location of the violation.

Such a database facilitates resource allocation decisions by identifying repeat offenders, frequent discharge locations, and the most common types of violations. This database could also be used to identify those ship operators for whom administrative sanctions, such as civil penalties, are not an effective deterrent. Sharing of this database information with neighbouring States will greatly facilitate and enhance regional enforcement efforts.

In prosecuting MARPOL violation cases, it may be necessary to present physical evidence, witness statements, and testimony from experts. In many cases, field investigators themselves will be called upon to present testimony. Therefore, it is important to develop field procedures that ensure the sound collection and preservation of physical and testimonial evidence. Full documentation of observations, witness responses, and field investigator comments is crucial to the successful processing of an alleged violation. In some cases, Administrations will need to identify experts on the various detection techniques. These experts must be available to testify at hearings or trials leading to sanctions for violations of MARPOL.

21 STRATEGIES FOR INSPECTION

21.1 General

21.1.1 A major part of port State control involves verifying that the ship's Convention certificates are in order and accurately represent existing conditions. An inspection under port State control is a spot check on the quality assurance of the flag State and the owner. Port State control should be seen as a "safety net". Routine inspections under port State control might vary widely depending on the type, age and maintenance standard of the ship and the experience of the surveyor or port State control officer (PSCO). Up to one hour may be needed just to check the ship's certificates. If there is a need for further inspections, based on clear grounds, additional time in relation to the severity of the deficiencies and discrepancies may be needed.

21.1.2 The qualification requirements for PSCOs for the conduct of inspections are detailed in Assembly resolution A.1052(27). Where fully qualified surveyors are not available, other suitably trained personnel may perform certain inspections on behalf of the port State party to the Convention. Junior members with specific training may conduct many aspects of the inspection under the guidance of a fully qualified PSCO. Under MARPOL, licensed engineers can check to ensure that equipment required under the various Annexes are properly in place and functional, such as the marine sanitation device, incinerators, the oily water separators, and the oil discharge monitoring equipment and that diesel engines are retained in a compliant condition. Checks should verify that these devices have no obvious unauthorized modifications. Licensed deck officers can conduct safety inspections of the deck and cargo spaces, paying particular attention to indications of hull damage, leaks from cargo or fuel areas, and proper markings in accordance with the reviewed and approved dangerous goods manifest. When an officer detects any discrepancies, they should be brought to the attention of the qualified surveyor or investigator for resolution.

21.1.3 As there must be clear grounds for believing that a violation has been committed for port State control purposes, investigation should have specific focus. A team approach is often useful, with a qualified PSCO in charge of junior or other specialized personnel. For instance, a chief engineer may be able to detect subtle anomalies in the Oil Record Book, the Ozone-Depleting Record Book, the Record Book of Engine Parameters or the fuel oil change-over records but a person specifically trained in techniques of questioning witnesses might also be valuable on the team.

21.1.4 Port State control on operational requirements is different from the work of the PSCO on hardware as indicated above which is based on article 5 of the Convention (see paragraph 3.5). When a PSCO visits a ship and has clear grounds for believing that the master or crew are not familiar with essential operational procedures the PSCO may inspect the ship on these aspects like asking the crew to test equipment described in the garbage management plan. Where an Annex to MARPOL identifies an operational requirement that is mandatory to be carried out, a PSCO is allowed to witness any such mandatory operational requirement under that Annex. For instance the mandatory prewash under MARPOL Annex II. No clear ground is necessary in this respect. The rights and obligations for PSC on operational requirements are reflected in every Annex individually so there is no such requirement in the articles of the Convention like there is for PSC on hardware requirements (article 5).

21.2 Annex I

In setting priorities for a compliance strategy, the marine administration would need to have an idea of which ships have the highest potential for being in violation, or where a deficiency would be most significant. Some of the considerations for the marine administration are as follows:

21.2.1 *Ships with machinery for propulsion or other task-specific activities*

These have fuel and lubricating oils that may leak into the bilges of the machinery spaces. Leakage may originate for instance from oil changes, routine maintenance, and fittings loosening due to normal ship operations. A newer and/or well-maintained ship should have fewer leaks. A leak on “well-maintained” ships would more likely be cleaned up than allowed to stay in the bilge. Older ships and “poorly maintained” ships should be prime targets for inspections.

21.2.2 *Oil tankers*

Such ships may have to clean tanks during the ballast voyage if there is a change of cargo, or if ballast water had to be carried in cargo tanks. Between unloading one cargo and loading another on the ballast voyage, the ship will have to put the resulting tank washings somewhere. There may be the temptation to discharge these oily waters to sea, even in excess of allowances. Ships with SBT or on dedicated cargo runs are not likely candidates for illegal discharges. Therefore, older ships without SBT or CBT, and those which change cargo and need to clean tanks should be targeted.

An effective strategy of the standardized examination would be to inspect the bilges of the pump room, specifically during every ship inspection. The piping must be examined to verify that those ships required to have oil discharge monitoring equipments (ODME) do so, and that all ships equipped with ODME do not have piping which allows by-passing of this equipment. As piping is an expensive and "permanent" modification, it is more likely that the monitor might be electrically by-passed or disabled. This allows water from the ODME to be discharged overboard regardless of the oil content. An examination will usually reveal if someone has opened or tampered with the monitor, while legitimate maintenance will be recorded in the maintenance log. Inspectors should also carefully examine the Oil Record Book, Part II and the ODME to check for any instances where ships attempt to allow bilge water from the pump room, with or without oil, to be pumped overboard.

21.2.3 *Collecting evidence*

During an inspection, PSCOs may take photographs and samples if there is a significant presence of oil in the bilges of the engine room on any ship and/or cargo pump room on oil tankers. This would alert the crew to the seriousness of the inspection, and the likelihood of being caught should oily bilge water be pumped overboard. To reduce costs, the pictures need not be printed nor the samples analyzed unless there was a later alleged illegal discharge. It is relatively easy to tell if there is or was oil in the bilges from the oil staining. If the bilges are clean, but the rest of the engine room, machinery space or pump room is not well maintained, one may presume an illegal discharge. If there is excess oil in the bilges, the inspector should be empowered to require removal of the oil. This is especially necessary for small ships not equipped with oily water separators.

This attention to the condition of the bilges, especially after documentary evidence has already been collected, will act as a significant deterrent to an illegal discharge. If a discharge has occurred and a ship is a reasonable suspect, the bilges can be re-examined and the samples analyzed if there is a discrepancy. If the ship has left port before the bilges can be re-

inspected, the sample analyses may be sufficient to prove the case. The Bonn Agreement Guidelines for Sampling and Identification of Oil Spills should be considered when developing sampling plans or strategies. Having established a priority for choosing which ships to examine, the Administration may follow the general guidelines found at appendix 16 of this manual. If a ship is suspected of having discharged in contravention of Annex I, the investigators may follow the guidelines found at appendices 17 and 18 of this manual.

21.3 Annex II

Ships carrying Annex II cargoes in Category X or high viscosity or solidifying cargoes in Category Y are required to prewash those cargo tanks after unloading and prior to departure from the unloading port unless an exemption is given by the Government of the cargo receiving country. Essentially there should be less residue on board per tank and its associated piping than the quantity that is allowed to be discharged under Annex II. For Category X substances, there shall be mandatory washings, including disposal to a reception facility in the unloading port. For Category Y, unloading shall be done in accordance with the P&A Manual to ensure that the residual quantity in the tank and its associated piping is not in excess of the regulations. Where it is not possible to achieve the residual quantity by efficient stripping (in case the product falls under the definition of solidifying and high viscosity substances) a pre-wash is required. The ship should discharge the wash water with the effluent into a reception facility at the port of unloading. Where a mandatory prewash is required and the Regional Reception Facility Plan is applicable to the port of unloading (see paragraph 15.2.3), the prewash and subsequent discharge to a reception facility shall be carried out as prescribed in regulation 13 of Annex II or at a Regional Ship Waste Reception Centre specified in the applicable Regional Reception Facility Plan.

At the request of the master of the ship, an exemption may be granted for the prewash subject to the following conditions:

1. the tank will be reloaded with the same or a compatible cargo;
2. the tank will not be washed or ballasted at sea and a written confirmation is given to the effect that the prewash shall take place at another port and the consequent washings shall be discharged to a suitable shore reception facility in that port; or
3. cargo residues will be removed by ventilation in accordance with a procedure approved by the Administration.

The successful completion of the prewash of a product in Category X shall be witnessed and endorsed in the cargo record book (CRB) by a surveyor appointed or authorized by the Administration. For a prewash of a product in Category Y there is no requirement for mandatory witnessing the operation by a surveyor. However, any operation that is witnessed, prewash or efficient stripping, as a consequence of a regular visit by a surveyor appointed or authorized by the Administration shall be endorsed in the CRB. Unlawful discharge, which may be the result of mechanical failure, human error or an intentional act, can be detected following an examination of the cargo inventory (paper trail afforded by the Cargo Record Book).

Ships certified to carry noxious liquid substances may find the need to wash the tanks in between the carriage of different cargoes for a commercial reason. The mandatory prewash shall take place in the unloading port and subsequent washings shall be discharged to a shore reception facility. Tanks that are unloaded from substances that do not require a mandatory

prewash shall be unloaded in accordance with the P&A Manual. This operational procedure is called “efficient stripping”. It is of major importance that the operational requirements, prewash or efficient stripping, carried out in port are monitored so that the ship can proceed to sea with an amount of residues per tank and associated piping which is not in excess of the quantities permitted under the Annex. Any water added to the tank after a prewash or efficient stripping with the aim to ballast the tank or commercially clean the tank may be discharged into the marine environment when the ship is *en route* with a speed of at least 7 knots, at a distance of not less than 12 miles off the coast in a depth of water (charted depth) of at least 25 metres. The discharge shall be made below the water line. These elements are important to control by the PSCO via the CRB, the ship’s log and the nautical chart if the ship is suspect towards an alleged violation.

When inspecting ships carrying noxious liquid substances, such inspection might follow the general guidelines at appendix 16 of this manual. Surveyors should take all necessary safety precautions when entering potentially dangerous locations on ships. In the event that a ship is suspected of having discharged in contravention of Annex II of MARPOL, the investigators are advised to follow the guidelines found at appendix 17 of this manual.

21.4 Annex III

In the absence of any requirement for surveys and certification under this Annex, there are three elements for verifying the requirements of Annex III via the IMDG Code. These are:

- .1 a detailed inspection of the required documentation;
- .2 an on board verification that the paperwork matches the marking and stowage on board and that the labelling is correct; and
- .3 whether the stowage is in accordance with the requirements of Annex III.

It is important to note that the vehicle for the implementation of MARPOL Annex III is the IMDG Code. This means that an inspection can never be only for Annex III (pollution hazard) or only for the IMDG Code (safety hazard). These two instruments go hand in hand and in the text below a logic mix is made.

A thorough review of the dangerous goods manifest can be a painstaking and protracted process. A novice could take hours verifying each entry with the Code without checking the general cargo manifest to ensure that none of the cargo listed there, should have been listed on the dangerous goods manifest. The task can be lengthy even for an experienced inspector who is familiar with the Code and with the transit pattern of routine cargo within the port. To conduct this inspection while the ship is in port may seriously delay the ship's departure. In general, it is a good practice to require advance copies of the dangerous goods manifest. This facilitates the agency's work and also minimizes delays to the ship. Customs or other officials who are involved, as a matter of course, in detailed reviews of goods entering and/or departing the country may be also required to check for the detailed requirements under the IMDG Code.

The other aspect of the enforcement is ensuring that the dangerous goods manifest correctly represents what is being carried on board. It generally does not take a long time to inspect the ship itself with dangerous goods manifest in hand to verify that dangerous goods on the manifest are stowed in the locations indicated, are properly marked, are packaged in good

condition, and there are no marked dangerous goods are on board which are not listed on the manifest.

A critical element of safety for the ship and for the port is the proper segregation of dangerous goods. While stowage locations may be listed on the dangerous goods manifest, the average Customs official who is reviewing the documents may not sufficiently appreciate the requirements for segregation. Therefore, it might be useful for the on board inspection to verify that the stowage plan complies with the IMDG Code. Wherever a Customs official conducts the initial review of the advance documents, the reviewed documents should be submitted to the Administration for more informed review of the stowage plan.

As a specific element of enforcement of Annex III, the on-board inspector should be on the continuous look out for any indicators that there may have been an incident involving dangerous goods or harmful substances. During the on board inspection, key alarm indicators would include, but not be limited to, damp, crushed, or otherwise flawed packages; evidence of clean-up, such as an area being unusually clean or damp; a large pile of rags or other material which might have been used to clean up a spill; members of the crew wearing unusual protective clothing; or evidence of burns or rashes. If the inspector has sufficient reason to suspect a spill, the master or person in charge may be asked specifically if there were any incidents. Crew members may also provide further details. The log should be also reviewed for any reports of incidents. In the event of a positive response, the inspector should ensure that all the required reports were made. Appropriate action as provided for in the Convention should be initiated if a violation is detected, whether or not it was reported.