

# MARPOL Annex 1

## – Get it right the first time, every time



**Rahul Sapra**  
**Marine Surveyor**  
+65 6506 1435  
rahul.sapra@ctplc.com

Preventing accidents resulting in pollution is important, but pollution caused by operational failure is a bigger risk.

Fines as a result of MARPOL Annex 1 violations are increasing.

A 'zero pollution' culture needs to be instilled from the top down.

### Introduction

Recently, the club has seen an increase in the number of incidents and fines relating to violations of the International Convention for the Prevention of Pollution from Ships (MARPOL) Annex 1. The club does cover certain fines which could, for example, be from breaches of immigration laws, contravention of customs regulations, incorrect cargo documentation and accidental pollution. However, accidental pollution does not include deliberate acts or negligent operational discharges. Shipowners and operators should be aware that environmental offences have a high profile and many authorities punish MARPOL violations with harsh penalties.

It must be clearly understood that the club will not normally support members in the case of deliberate or negligent MARPOL violations.

In this article we highlight the problems facing shipowners and seafarers regarding the MARPOL Annex 1 requirements and how zero violations can be achieved. There is a persistent increase in the number of fines and prosecutions under MARPOL. This is particularly significant in the USA, where the Act to Prevent Pollution from Ships (APPS) applies in parallel with the U.S. Clean Water Act (CWA). The CWA states that it is unlawful for any person to discharge any pollutant into navigable waters unless a permit is obtained under its provisions.

Not only have the number of fines increased for MARPOL violations but also the level of fines and, in some cases, perpetrators have been imprisoned. These not only include officers and crew directly responsible for the misdemeanour but also senior managers of the company. A major ship operator was recently fined over \$10m for deliberate violations of APPS and obstruction of justice. In another case, an operator and two engineers were convicted for conspiring not to maintain an oil record book (ORB) correctly and for falsification of records. Serious MARPOL convictions affect an organisation's reputation, resulting in it being 'blacklisted' and preventing it from pursuing commercial contracts.

Deliberately breaking the law should rightly be punished, but there can also be considerable consequential losses suffered by shipowners and crews who are *falsely* accused of illegal discharges. For example, lax record keeping can be construed as being fraudulent and can result in lengthy ship and crew detentions, mental trauma to the crew, damage to company reputation, off-hire claims and additional crew and legal costs. It is therefore vital that shipowners, operators and seafarers take steps to prevent such violations occurring in the first place. This means ensuring all crews and ships have the best equipment, training and procedures for handling and managing all environmentally impacting operations, expressly the treatment of oil and oily water waste on board.

MARPOL infringements can result in both company and seafarers being liable to criminal prosecution and imprisonment for deliberate violations or falsification of records in addition to large fines.

#### **Achieving zero violations**

To assist members to meet the operational requirements and to achieve the objective of 'no harm to the environment', we have set out the following guidelines:

#### **Company culture**

Nothing will reduce accidental and operational pollution unless the company CEO and senior management believe in 'zero pollution' and instil a culture of achieving this throughout the company. This should include providing effective resources and procedures, training and equipment. An effective, consistent and transparent approach to pollution prevention will stop the company and its staff being hit by fines and prosecutions.



### Using the ISM Code

One of the core tenets of the ISM Code is pollution prevention and using the ISM Code correctly is key to ensuring that accidental, deliberate and negligent pollution incidents do not occur.

The Standard Club carries out ship risk reviews on a range of member vessels and it is apparent that a small number of ships do not deal with pollution prevention thoroughly. This is evident because of poor housekeeping; such as engine room bilges containing significant amounts of oil and oily water from leaking machinery, inappropriate pumps being used for oil discharge and oily waste transfer, oily water separators incorrectly used or calibrated, hydraulic leaks and pipework in poor condition, dirty oil tank vents, savealls containing oily residue or water ballast tanks showing evidence of oil residues, together with poor record keeping. The list is extensive and highlights that some companies do not have the culture and practices in place to ensure a 'zero pollution' goal.

Good tanker operators have made great strides towards a 'zero tolerance' to pollution incidents. This has been pushed not only by legislation but also by commercial desire to avoid fines and preserve company reputation. It is not the purpose of this article to produce guidance for tanker operators in cargo carriage operations, but the following guidance is applicable to all ships.

- Ensure that the Safety Management System is effective by conducting meaningful internal audits on environmental compliance and act upon the findings. Produce effective written audit reports and conduct transparent post-audit meetings.
- Auditors and superintendents should interview and talk to crew members, promoting the philosophy of 'zero pollution' wherever possible. Use shipboard management meetings to address environmental compliance issues.
- Actively promote a culture to minimise waste and leakage through good housekeeping and maintenance. The environmental management standard ISO 14001 may not be applicable for all companies, but it does provide a template for good environmental practices.
- Actively promote an open culture of reporting pollution incidents and near misses through the incident reporting systems. An open culture recording how a company is actively reducing pollution through learning and training can mitigate the consequences of accidental infringements. Falsifying records, particularly the ORB, is considered an offence by authorities. Proper and accurate record keeping is vital.
- Set attainable pollution prevention goals and KPIs. Analyse waste streams to determine content, volume, means and capacity for storage, and estimate realistically the cost of treatment and disposal.
- Encourage masters to view pollution prevention as imperative and support their comments in ISM management reviews and shipboard management meetings.
- Audit and review the bunkering, oil transfer, incinerator and oil waste disposal procedures. Use risk assessments for all oil transfers.
- Consider using the master to carry out pollution prevention audits. He may have the experience and objectivity to see where the risks lie.

- Ensure the superintendent formally checks the oil filtering equipment, oil transfer and waste oil discharge arrangements and procedures.
- Promptly repair defective machinery or pipework likely to cause pollution.
- Fit numbered environmental tags on flanges, seals on overboard valves and cross-connections to prevent accidental use.
- Install surveillance cameras, use tamper-resistant systems to record alarms, printouts and to verify equipment operation. Fix locked boxes or cages over monitoring equipment.
- Produce formal guidance and training on how to fill in the ORB correctly.
- Many owners and crews have been prosecuted by the authorities after taking over a new ship. There have been cases where owners found that the oil discharge systems fitted were not compliant with MARPOL, including where previous owners or crew had fitted 'magic' pipes or other oil discharge bypass arrangements. When taking over a new ship, a thorough investigation of the oil discharge arrangements, including pipeline traces, should be conducted by a competent person.

It is also prudent to have Class attest that the system is compliant with MARPOL and confirm that the OWS overboard discharge pipes are clean. Consider having specific procedures and guidance available for pollution prevention procedures when taking over a new ship.

- Ensure ship familiarisation takes accidental pollution into account when inducting new crew.
- Review company procedures for abnormal oil disposal. If, for example, a ship is trading in an area where there are no shore oil disposal facilities, does the ship have sufficient holding tank capacity? If a situation arises where a holding tank is not listed on the IOPP certificate, there should be procedures in place for advising Class and/or Flag and getting their approval.
- Produce procedures and guidance for ships trading to and within sensitive areas and/or before arriving in ports where authorities are strict on MARPOL violations. These checks can often prevent minor violations becoming major incidents.



The cost from an error in a bunkering operation can be significant.  
Source: ITOFF

### Gravest infringements

The following examples have incurred maximum fines:

- **Oil filtering equipment** – the oily water separator (OWS) malfunctioning, including inoperative 15 ppm alarm and auto stop device, illegal bypass and the fitting of 'magic' pipes.
- **Oil record book** – inconsistent or false entries.
- **SOPEP** not properly maintained or approved by the flag state.
- **Retention of oil on board** – the quantity of oily water mixture retained on board does not tally with oil record book entries and/or IOPP record of construction and equipment. The quantity of oily water waste or sludge landed ashore or incinerated does not reconcile with the expected quantity to be produced from the machinery spaces.
- **Discharge violations** – the inside of OWS discharge pipes should be clean. Indications of an unauthorised discharge pipe or flexible pipe fitted, use of portable pumps and illegal openings on the holding tanks.

To ensure compliance with MARPOL Annex 1 requirements for all ships, refer to the revised guidelines and specifications for pollution prevention equipment for machinery space bilges of ships – Resolution MEPC.107(49) adopted on 18 July 2003.

A list of equipment approved by IMO is included in the pollution prevention equipment module in the Global Integrated Shipping Information System (GISIS), available at <http://gisis.imo.org>.

Members should review their environmental ISM procedures to ensure that the crew have proper guidance on all operations likely to pose an environmental risk. The club would also encourage a pollution prevention audit, either separate from or in conjunction with the internal ISM audits. The environmental audit should be an effective tool to improve the company environmental management system.

### Summary

The issue of pollution prevention is not always given the same priority as safety or ship operations and although companies will have procedures for the key pollution prevention activities, such as bunkering and sewage disposal, these are rarely audited to the same extent. A pollution prevention culture that follows the guidelines above will help shipowners and ship managers to avoid fines and preserve company reputation.

## Environmental Pollution Prevention Audit Check List

### ISM Code

- Have scheduled pollution prevention audits and inspections been carried out and findings acted upon?
- Have the Master's Review comments been appropriately addressed by the company?
- Can management of change issues effect pollution risks? For example, new crew changes, bunkering, oil transfer or waste oil disposal problems.
- Have pollution near-misses been reported and acted upon?
- Have oil and oil waste transfer procedures been checked? For example, bunkering, fuel oil transfer, waste oil incineration, waste oily water disposal, sewage disposal, if applicable?
- Have risk assessments been used for oil transfers?
- Is maintenance being properly conducted on equipment likely to cause pollution?
- Is the oil transfer record keeping, including ORB entries, up to date and correct?
- Is the on-board environmental management towards CFC/ Halons, NOX/SOX emissions, high sulphur fuel usage carried out correctly?
- Is the SOPEP equipment appropriate and functional; are SOPEP drills carried out?
- Have company/ship pollution prevention goals been achieved?

### Equipment

- Is the oil filtering equipment properly maintained, in good working order and free of leaks?
- Are the alarms, gauges and stopping devices installed correctly, in good condition and regularly tested?
- If a stopping device/alarm is not installed or is non-operational has this been reported, recorded and all bilges prevented from being pumped overboard?
- Has the OWS filtering system and pipework been modified without class approval?
- Can a zero reference reading be confirmed when the equipment is flushed with clean water?
- Are there visible traces of oil in an effluent sample taken from the discharge side of the OWS?
- Is the OWS maintenance manual in the relevant language?
- Have warning signs been posted at the oil filtering equipment discharge valve to prevent accidental opening?
- Are records of inspections, tests and maintenance available and up to date with suitable spares on-board?
- Does the equipment 'type approval' certificate match that noted on the IOPP certificate?
- Can officers operate oil filtering equipment correctly, including a demonstration of the 15ppm bilge alarm?
- Are there any operational restrictions relating to oil filtering equipment installed and are these rigorously observed?
- Are operations with oil residues correctly recorded in the ORB?
- Are oil residues and oily water retained on-board consistent with quantities expected to be produced during voyage and consistent with ORB entries?
- Check sludge tanks do not have any direct connections overboard, other than MARPOL standard discharge connections and piping does not have fittings and connections allowing unauthorised discharge.
- Confirm that sludge tanks equipped with drain valves are operational, are of self-closing type and do not connect directly to the bilge pumping system.
- Ensure that where drains are fitted to bilges, the tank oil/ settled water interface can be visually monitored.
- Confirm incinerator, auxiliary boiler or other approved disposal methods are correctly recorded in the ORB and consistent with the equipment capacity.
- Confirm correct, dedicated holding tanks are used for oily water and oil residues retention on-board.
- Check the incinerator or auxiliary boiler installed on board is type approved for burning oil residues.
- Check whether the option to burn sludge in the ship's incinerator or auxiliary boiler is confirmed in the IOPP certificate supplement and the correct capacity is entered.