

Aims to curb marine pollution

The management and control of marine pollution is steadily assuming a higher priority for shipowners and masters as governments, official bodies and politicians focus increasingly on MARPOL infringements and threaten key personnel with criminal prosecution.

However, the industry should not simply react to authorities' requirements but take a positive approach to avoid damaging the marine environment during operations.



Marine Pollution Prevention Pocket Checklist, jointly published by Lloyd's Register and the UK P&I Club, aims to provide practical advice for owners, operators and particularly seafarers to help them comply with the MARPOL Convention and prepare for Port State Control inspections – given a context of commercial disruption, fines and the growing threat of criminal proceedings against key personnel and the spectre of imprisonment.

A measure of quality

PSC rankings provide the industry with a tangible measure of the quality of the world's tonnage. PSC authorities have become increasingly effective at squeezing sub-standard operators out of the market, particularly through targeted inspection campaigns.

The Paris and Tokyo Memoranda of Understanding and the US Coast Guard's annual reports give the industry an effective measuring stick for gauging performance and deciding on methods of improvement.

However, marine pollution and the criminalisation of seafarers have become increasingly intertwined in recent months. Increased vigilance, particularly by USCG and European coastal state authorities, has revealed 'magic pipes' to bypass oily water separators and the falsification of oil record book entries.

The operational, social and political realities of life at sea have changed dramatically and seafarers now work in an environment where they can go to jail if they make a mistake. Masters, chief engineers and shore-based managers are being charged with, and convicted of, criminal offences such as conspiracy and obstruction of justice.

PSC benchmarking

Lloyd's Register monitored its fleet's PSC detentions to identify areas needing improvement. Since 2002, it has used this data as the basis of a comprehensive PSC benchmarking system and migrated the data to ClassDirect Live, online class information system. This ensures surveyors have up-to-date PSC information at their fingertips, providing the most

Marine Pollution Prevention Pocket Checklist

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The checklist highlights over 33 certificates, record books, plans and documents applying to ships in general and particular vessel types, including those specific to tankers and chemical carriers. There are a series of annexes dealing with prevention of pollution by oil, noxious liquids in bulk, harmful substances in packages, sewage, garbage and air pollution. Although not directly linked to MARPOL, an appendix on ballast water management is included.

MARINE POLLUTION PREVENTION POCKET CHECKLIST
Reducing the risk of Port State Control detentions

In conjunction with:
UK P&I CLUB

Lloyd's Register
LIFE MATTERS

MARPOL deficiencies

The following are the most common MARPOL deficiencies (by number) found by Port State Control Officers on Lloyd's Register Group classed ships in 2005

18	17	11	9	40
15	22	23	27	36

- 1730 oil filtering equipment [40]
- 1705 shipboard oil pollution emergency plan (SOPEP) [36]
- 1750 oil record book [27]
- 1745 15 PPM alarm arrangements [23]
- 1725 retention of oil on board [22]
- 1799 other (MARPOL - Annex 6) [19]
- 6150 prevention of pollution by oil (OPPI) [16]
- 2330 garbage record book [17]
- 2320 garbage management plan [11]
- 1740 oil discharge monitoring and control system [9]

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1. Operational deficiencies, continued

7. Shipboard Oil Pollution Emergency Plans – 100 of National Operational Control Plans updated

Ringside paper – sludge pump (left-hand)

Oil found on cardboard (left)

Note: UK P&I Club Technical Bulletin No 19 'Oily Water Separator – maintenance/operational recommendations' contains further information. Please go to www.ukpandclub.com for more free info.

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2. Certificates and documents, continued

Type Approval Certificates

- 7. Oily Water Separator
- 8. 15PPM Alarm
- 9. Oil Discharge Monitoring and Control System (Tankers only)
- 10. Oil/Water Interface Detector (Tankers only)
- 11. Sewage Treatment Communiting System, if fitted
- 12. Incinerator, if fitted
- 13. Exhaust gas cleaning system SOx, if fitted
- 14. Exhaust gas cleaning system NOx, if fitted

OWS test run

Ringside paper

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ex VI Prevention of Air Pollution from Ships

should be in good condition, properly calibrated, and fully functional with appropriate spares, as well samples must be retained on board until fuel is used or for 12 months, whichever is greater

- **zone Depleting (OD) substances** emissions occurring in the course of maintenance, servicing, repairing and disposing of systems or equipment. ODs must be recovered from the systems prior to maintenance
- **Direct Monitoring Equipment (if fitted)**
- **Exhaust gas cleaning system NOx (if fitted)**
- **Exhaust gas cleaning system SOx (if fitted)**
- **Incinerator (if fitted)**
- **Spour Emission Control System (Tankers only)**
- **Tank gauging**
- **Pressure monitoring**
- **Manifold markings**
- **Electrical continuity**
- **Means of isolating the VECs from the Inert Gas System**

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detailed possible view of any ship they are about to board.

The system allows Lloyd's Register to identify potential risks to the safety of the ships themselves and the personnel on board. Where a confluence of factors might not individually be cause for alarm but together represent a significant risk, Lloyd's is able to warn the owner and take action. For instance, a dirty engine room with flammable material close by, an unattended machinery space and an inoperable emergency fire pump would not necessarily pose substantial risks in themselves. Occurring at the same time and in close proximity, they would amount to a significantly hazardous situation.

Reducing claims

The UK Club supports the PSC system. However, lowering detentions is not just about cutting down on deficiencies but reducing environmental damage and insurance claims. Class looks at environmental problems from a position based on rules and standards. Insurers focus on risk.

Pollution accounted for 18 per cent of all UK Club claims outgoings in 2005. Deficiencies with oily water separators were down from 30 in 2001 to 14 in 2006. However, MARPOL deficiencies were up from zero in 2001 to 22 in 2006, an especially worrying trend as the increase in the past 12 months was considerable. Taken together, MARPOL and OWS violations were the most frequent reasons for UK Club ship detentions in 2006.

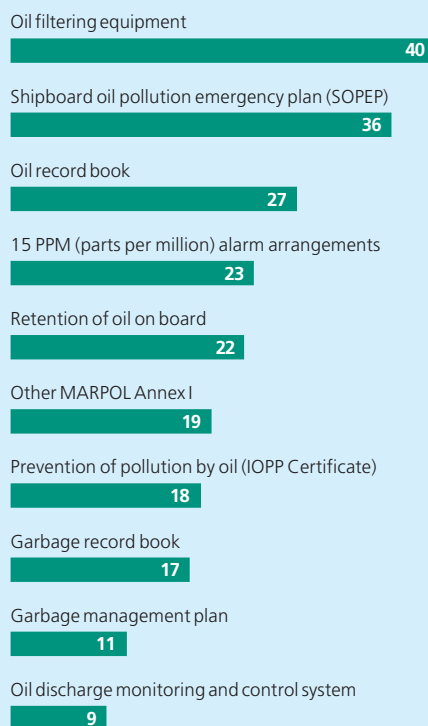
The variety of vessels involved in pollution claims in 1987-2004 is perhaps surprising. As might be expected, tankers featured in 46 per cent of incidents (24 per cent of Club entry). However, the claims were spread widely across the entire fleet, with bulk carriers (13 per cent) and dry cargo ships (10 per cent) prominent.

It follows that the sources of large environmental claims are also widely spread. Crude oil and fuel oil as cargo accounted for just under one quarter each, with chemical, clean and dirty products, dirty ballast, bilges and smoke appearing in the analysis. However, 33 per cent were down to bunkers.

This is highlighted by comparing the quantities spilled in 1990-94 with those in 2000-04. Pollutions of five to 1,000 tons

In 2005, PSC found over 220 MARPOL infringements among vessels classed with Lloyd's Register

Top 10 detention items:



have dropped dramatically from 59 to 16. Those under five tons have only eased from 53 to 49. This illustrates how important it is to guard against the smallest spillages. The authorities can be expected to target all incidents with increasing zeal, larger fines and, possibly, imprisonment for certain onboard and shore personnel.

Underlying causes of pollution incidents included failure and misuse of valves, overflows, defects in plate and pipes, hose rupture, contaminated bilges and faulty gauges.

The importance of human error in causing large spills must be stressed. Given their responsibilities, deck officers are most likely to commit the errors. They were at fault in 27 per cent of incidents in 1987-2004. However, taken together, crew, engineering officers, pilots and shore personnel slightly exceeded this figure. Further, 75 per cent of claims by value involved human error.

Deficiencies discovered by Port State Control should be seen in a wider context. Oil filtering equipment shortcomings mean pollution; an inadequate shipboard oil pollution emergency plan means a reduced capability to contain spills; and problems

with the oil record books lead to fines and prosecutions.

The onus is on every shipowner and master to take a responsible and constructive approach in managing those operations which involve a risk of pollution.

Pollution checklist

Produced by experts from Lloyd's Register and the UK Club, the guide advises masters and owners about their general approach to Port State Control over prospective and actual pollution, and highlights MARPOL deficiencies found in Lloyd's Register's own classed fleet by PSC. It provides a detailed checklist of areas that must be up to standard and highlights seven areas where operational deficiencies are frequently found: oil and oily mixtures from machinery spaces; retention of oil on board; discharge violation; inconsistent oil record book entries; garbage management; cargo residues; and shipboard oil pollution emergency plans (SOPEPs).

In the master's office, certification, documentation and approved manuals must be up-to-date, original and valid. If equipment is broken or missing or the ship damaged en-route, the master must notify the port authorities prior to entry. If permanent or temporary remedies have been agreed with flag, Port State should not detain the vessel. Otherwise, it has clear grounds for inspection, perhaps leading to detention.

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Marine Pollution Prevention Pocket Checklist measures 15 cms X 10.5 cms and is printed on recyclable polypropylene. It will be distributed to owners and operators of Lloyd's Register-classed ships and members of the UK P&I Club. The text will be available for downloading from www.lr.org and www.ukpandi.com