



RESEARCH PAPER 06/04
23 JANUARY 2006

Merchant Shipping (Pollution) Bill [HL]

Bill No 68 of 2005-06

The *Merchant Shipping (Pollution) Bill* [HL] will enable the UK to give effect to certain international agreements on pollution from shipping.

Clause 1 will enable the implementation of the *Supplementary Fund Protocol* which will provide a second tier of compensation for those affected by oil pollution from ships.

Clause 2 will enable the implementation of Annex VI of the *International Convention for the Prevention of Pollution from Ships* (MARPOL) which introduces controls on the emission of certain air pollutants from ships and off-shore platforms.

Oliver Bennett

SCIENCE AND ENVIRONMENT SECTION

Edward White

SCIENCE AND ENVIRONMENT SECTION

HOUSE OF COMMONS LIBRARY

Recent Library Research Papers include:

05/81	The <i>Childcare Bill</i> [Bill 80 of 2005-06]	23.11.05
05/82	The <i>Work and Families Bill</i> [Bill 60 of 2005-06]	24.11.05
05/83	The <i>Criminal Law (Amendment) (Protection of Property) Bill</i> [Bill 18 of 2005-06]	28.11.05
05/84	Economic Indicators, December 2005	01.12.05
05/85	The UK Parliament and European Business	02.12.05
05/86	The <i>Armed Forces Bill</i> [Bill 94 of 2005-06]	07.12.05
05/87	The <i>Animal Welfare Bill</i> [Bill 58 of 2005-06]	07.12.05
05/88	The <i>Criminal Defence Service Bill</i> [Bill 64 of 2005-06]	09.12.05
05/89	Unemployment by Constituency, November 2005	14.12.05
05/90	The <i>Government of Wales Bill</i> [Bill 100 of 2005-06]	19.12.05
05/91	Germany: elections, the new Government and Anglo-German relations	20.12.05
05/92	The Centre of Government – No. 10, the Cabinet Office and HM Treasury	21.12.05
06/01	The <i>International Development (Reporting and Transparency) Bill</i> [Bill 19 of 2005-06]	11.01.06
06/02	Social Indicators [includes article: New Year resolutions – how do they figure?]	12.01.06
06/03	Unemployment by Constituency, December 2005	18.01.06

Research Papers are available as PDF files:

- to members of the general public on the Parliamentary web site,
URL: <http://www.parliament.uk>
- within Parliament to users of the Parliamentary Intranet,
URL: <http://hcl1.hclibrary.parliament.uk>

Library Research Papers are compiled for the benefit of Members of Parliament and their personal staff. Authors are available to discuss the contents of these papers with Members and their staff but cannot advise members of the general public. Any comments on Research Papers should be sent to the Research Publications Officer, Room 407, 1 Derby Gate, London, SW1A 2DG or e-mailed to PAPERS@parliament.uk

Summary of main points

The *Merchant Shipping (Pollution) Bill* [HL], will enable the UK to give effect to two international agreements relating to pollution from international shipping.

On 13 November 2002 the *Prestige* was wrecked off the coast of Spain, spilling its cargo of heavy fuel oil. The level of compensation available in this case was £116 million; however the total cost of the accident was estimated at some £711 million. It became clear that the level of compensation available would have to be increased through the adoption of a supplementary compensation fund.

Clause 1 of the Bill will introduce powers to enable secondary legislation to be used to implement the Supplementary Fund Protocol (the Supplementary Fund) to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage 1992 (the Fund Convention), as agreed by the International Maritime Organisation, in the United Kingdom. The Supplementary Fund provides a second tier of compensation, above that provided by the Fund Convention, for those in member states affected by oil pollution from ships. It would increase the available compensation funds from a total of £162 million per incident, to £600 million. The fund is financed by major recipients of oil in member states, such as private companies or Government authorities.

Air pollution from ships is increasing in significance. There are fears in Europe that unless more action is taken to address this issue, EU ships may emit more pollutants than all EU land sources combined by 2020. Clause 2 of the *Merchant Shipping (Pollution) Bill 2005* will provide a power to make secondary legislation to implement Annex VI of the International Convention for the Prevention of Pollution from Ships (MARPOL). This introduces international controls on the emission of certain air pollutants from ships and off-shore platforms.

The Bill was sent from the Lords on 26 October 2005, receiving its first reading in the Commons on the same day. The second reading is scheduled for 25 January 2005.

Abbreviations

ACOPS	-	Advisory Committee on Protection of the Sea
IMO	-	International Maritime Organization
IOPC	-	International Oil Pollution Compensation Fund
MARPOL	-	International Convention for the Prevention of Pollution from Ships
MCA	-	Maritime and Coastguard Agency
NAEI	-	National Atmospheric Emissions Inventory
NEG-TAP	-	National Expert Group on Transboundary Air Pollution
NO _x	-	Nitrous oxides
OILPOL	-	International Convention for the Prevention of Pollution of the Sea by Oil
SECA	-	SO _x Emission Control Area
SO _x	-	Sulphur oxides
SO ₂	-	Sulphur dioxide
VOC	-	volatile organic compounds

CONTENTS

I	<i>Merchant Shipping (Pollution) Bill</i> [HL]: Clause 1	7
	A. Marine Oil Pollution	7
	1. The UK	7
	2. Europe	10
	3. Recent Major Incidents	10
	B. Compensation and Liability Regimes	13
	1. Background	13
	2. Existing funds	14
	C. Proposals in the Bill	19
	1. Consultation	19
	2. Impact Assessment	20
	3. Comment	20
	D. Lords Debate	22
	1. Second Reading	22
	2. Grand Committee, Report Stage and Third Reading	23
II	<i>Merchant Shipping (Pollution) Bill</i> [HL]: Clause 2	26
	A. Air pollution from ships	26
	1. Particulates	26
	2. Ground level ozone	27
	3. Acidification	28
	4. Eutrophication	31
	5. Volatile organic compounds	32
	6. Ozone depleting substances	33
	B. MARPOL: <i>Merchant Shipping (Pollution) Bill</i> [HL] clause 2	34
	1. History of MARPOL	34
	2. MARPOL Annex VI	35
	3. Annex VI: Chapter II	36
	C. Annex VI Chapter III: the control of certain emissions	36
	1. Regulation 12: Ozone-depleting substances	37

2.	Regulation 13: Nitrous oxides (NOx)	37
3.	Regulation 14: Sulphur oxides (SOx)	38
4.	Regulation 15: volatile organic compounds (VOC)	39
5.	Regulation 16: Shipboard incineration	39
6.	Regulation 17: Reception facilities	40
7.	Regulation 18: Fuel oil quality	40
8.	Regulation 19: Requirements for platforms and drilling rigs	40
D.	Review of Annex VI	40
E.	Lords Debate	41
F.	Industry Comment	43
III	Appendix 1: Convention Membership	45
A.	States Parties to both the 1992 Civil Liability Convention and the 1992 Protocol Fund Convention.	45
B.	1992 Fund Member States which are Party to the Supplementary Fund Protocol	47
C.	States Parties to the 1992 Civil Liability Convention but not the 1992 Fund Convention	47

I ***Merchant Shipping (Pollution) Bill* [HL]: Clause 1**

Clause 1 of the *Merchant Shipping (Pollution) Bill* will enable the UK to implement a new funding scheme to provide compensation for damage resulting from spills of oil from tankers. This new scheme, the *Supplementary Fund Protocol* (the *Supplementary Fund*), will operate in addition to an existing system covered by the *International Convention on Civil Liability for Oil Pollution Damage 1992* (the *Liability Convention*) and the *International Convention on the Establishment of an International Fund for Compensation for Oil Damage 1992* (the *Fund Convention*). The *Liability Convention* makes ship owners liable for pollution damage caused by oil carried as cargo of up to £72 million per incident. The *Fund Convention* provides additional compensation above the *Liability Convention* when required up to a total amount of £162 million.

Following a number of major incidents, for which compensation exceeded the total provided for by the 1992 Conventions or for which payment of compensation was delayed, the International Maritime Organisation adopted a protocol to the *Fund Convention*. This *Supplementary Fund* provides further compensation up to £600 million total.

A. **Marine Oil Pollution**

1. **The UK**

Oil pollution from ships can come from both accidental and deliberate spills of oil into the sea.

- Over 80% of marine oil spills occur within a port or harbour area. These spills are usually small in nature resulting from normal operations such as loading and bunkering.¹
- Oil pollution also occurs when ships deliberately or accidentally discharge oily waste during operations at sea. This accounts for most cases of marine pollution. These are harmful to birds and other animals at sea in the area and can also cause harm when washed ashore.
- Accidental pollution can occur on a large scale when tankers break up or are run aground. The *Sea Empress* in February 1996 resulted in 72,000 tonnes of oil being released into the seas around South West Wales. Around 7000 birds of 25 different species were affected by oil.²

It is compensation for the large scale pollution incidents that the *Merchant Shipping Bill* aims to address. The waters around the UK are some of the busiest shipping lanes in the world and its extended coastline makes the UK particularly susceptible to shipping incidents.

¹ Marine Pollution Control Unit, *Oil contingency plan guidelines for ports, harbours, and oil handling facilities*, 1997

² Sea Empress Oil Spill <http://www.swan.ac.uk/biosci/empress/>

The WWF-UK published figures in February 1999 showing the number of oil tanker incidents off the UK coast since 1992. They suggested that such incidents were increasing in the UK because the Government was doing nothing to counter the problem.

On the fourth anniversary of the Sea Empress oil spill disaster, WWF and The Wildlife Trusts can reveal an increase in oil tanker accidents around the UK. Government figures show a rise from 17 accidents in 1992 to 22 in 1999, an average of almost one oil tanker accident every two weeks.

Oil Tanker Accident Information – Provided by the DETR's Marine Accident Investigation Branch. Between 1992 and 1999, 148 accidents were recorded off the UK coast, an average of 1.5 accidents a month.

Accident Numbers:

1992 – 17
1993 – 13
1994 – 17
1995 – 15
1996 – 26
1997 – 21
1998 – 17
1999 - 22

Over 40% of tanker accidents were caused by “collision & contact”, approximately 30% due to machinery problems and “strandings & grounding” accounted for almost 15% of accidents. The top five foreign flags involved in tanker accidents were Bahamas, Norway, Gibraltar, Liberia and Malta.³

The Advisory Committee on Protection of the Sea (ACOPS) has conducted annual surveys of discharges into UK waters on behalf of the Maritime and Coastguard Agency [MCA] and the DTI since 1978. The 2004 annual survey of Reported Discharges Attributed to Vessels and Offshore Oil & Gas Installations Operating in the United Kingdom was published in October 2005. The report suggests that from 2000 oil pollution incidents have decreased.

Following analysis of 1,354 incident reports and supporting information 664 separate discharges from vessels and offshore oil and gas installations were identified in the survey area during 2004. The reported discharges comprised 89.2% mineral oils, 5.1% chemicals, 0.3% vegetable or animal oils, 0.2% garbage and 5.3% other substances. An overall 13.5% increase was evident in the total number of incidents reported over the previous year's total.

The overall geographical pattern for vessel-source oil discharges in the survey area during 2004 did not differ significantly from that plotted during the previous year. Minor clusters were again identified near oil and gas installations operating in the northern North Sea, southern North Sea off the Norfolk coastline, Strait of Dover, western English Channel and The Minches.

³ WWF-UK Press Release, *Oil Tanker Accidents off the UK Coast Increasing*, 15 February 2000

During 2004 a total of 177 discharges were attributed to vessels and since 2000 a continuing decline in the total number of reported vessel-sourced discharges was evident at an average rate of 15% per year. During 2004 a total of 487 accidental discharges were attributable to oil and gas installations, an increase of 99 from the 2003 data. During this period, however, DTI explained that they had adopted a more pro-active approach to smaller spills requiring the oil and gas industry to submit details of discharges involving very small volumes where in the past these may not always have been submitted. Moreover, the DTI noted that whilst it is difficult to quantify the additional notifications resulting from this change in approach the total volume discharged to sea resulting from accidental oil and gas discharges fell by over 30% from 2003 to 2004.

Overall, 81% of discharges were reported in the open sea, 16% in ports and harbours and 3% across the remaining marine environmental zones. Further analysis of the survey statistics indicated a continuing decline in port pollution incidents attributed to vessels at an average rate of approximately 8% per year since 2000. At least 25 confirmed discharges were attributed to vessel-casualties including 12 fishing vessels, 6 pleasurecraft, 2 tugs and 3 other types of vessels. Only six beach pollution incidents were reported during 2004 and four were judged to be significant because of the types or extent of pollution.

Estimated volumes of discharges were recorded in 508 incident reports. The modal class for oil discharges was again less than 455 litres but larger volumes of between 1 and 50 tonnes were recorded in 9 of the 11 survey enumeration areas. The largest oil spill, 40 tonnes of light diesel oil and 1 tonne of hydraulic oil, occurred after the Mfv *Elegance* sank off the Orkneys on 5 March. The two largest chemical incidents, each of 24.6 tonnes, followed leakages of an aqueous glycol mixture and a subsea hydraulic fluid from a subsea tree cap at the *Bruce* installation. Twenty-seven discharges of 2 tonnes or more were reported during 2004 including 16 attributed to offshore oil and gas installations.

Crude oils accounted for 47% of all identified types of mineral oil discharges. Bunker, diesel, fuel and gas oils were spilled in varying quantities from vessels or offshore oil and gas installations on 166 occasions in all survey enumeration areas. In addition, survey respondents identified 34 chemical spills from offshore oil and gas installations including cement mix, glycol, hydrate inhibitor, methanol, silicate liquid, sim resin and triethylene glycol. Estimated volumes of chemical spills ranged from 0.1 litres to 24.6 tonnes with a median volume of 100 litres.

Ten successful prosecutions for oil pollution offences were concluded during the year. Total fines imposed by the competent authorities amounted to £122,200 with a mean value of £12,220. In addition, a fine of £10,000 was imposed by a Magistrates Court following a breach of Regulation 14(2)(a) of the Merchant Shipping (Prevention of Pollution by Garbage) Regulations 1998.⁴

⁴ ACOPS, *Annual Survey of Reported Discharges Attributed to Vessels and Offshore Oil & Gas Installations Operating in the United Kingdom Pollution Control Zone 2004*, May 2005.

2. Europe

Europe is the world's largest market for crude oil imports, representing about one third of the world total. Ninety percent of oil and refined products are transported to and from Europe by sea. Inevitably, some of this makes its way into the sea. Whether by accident or normal ship operation the marine environment is degraded.

In September 2003 the European Commission adopted a proposal inviting EU Member States to ratify the proposed *Supplementary Fund Protocol*. Loyola de Palacio, the Commission's Vice-President responsible for transport and energy policy, commented on the proposal:

This will significantly improve the compensation of victims of future oil spills in the EU as one of the key problems of the existing oil pollution compensation regime is that there is not enough money in the system.⁵

By March 2004 the European Council had passed EU Council Decision 2004/246/EC authorizing Member States to join the *Supplementary Fund*.⁶

3. Recent Major Incidents

a. *Sea Empress*

On Thursday 15 February 1996 the tanker *Sea Empress* ran aground at the entrance to Milford Haven on passage from the Firth of Forth to the Texaco Refinery in Milford Haven. On leaving the Firth of Forth she was laden with 131,000 tonnes of crude oil. In total 72,000 tonnes of cargo and 360 tonnes of heavy fuel oil were released.⁷

Compensation for the *Sea Empress* incident was covered by an earlier convention, the *1971 Fund Convention*. This has now been replaced by the *1992 Fund and Liability Conventions* but is still used to manage any compensation resulting from earlier incidents.

In October 2003 the Secretariat for the *1971 Fund Convention* released the following press statement on total compensation amounts:

In February 2002 the International Oil Pollution Compensation Fund 1971 and the shipowner's insurer, Assuranceforeningen Skuld (Skuld), commenced recourse action against the Milford Haven Port Authority (MHPA) to recover the amounts they had paid in compensation to victims of oil pollution damage resulting from the "SEA EMPRESS" incident. An out-of-court settlement has been agreed, under which MHPA will pay £20 million to the Fund in full and final settlement of all aspects of the recourse action.

⁵ European Commission Press Release, *The Commission invites Member States to adhere to the new oil pollution compensation fund*, 9 September 2003.

⁶ OJ L 78 16.3.2004

⁷ Marine Pollution Control Unit, *The Sea Empress incident: Summary of report*, 17 January 1997.

The "SEA EMPRESS" grounded off Milford Haven in February 1996, spilling some 72 000 tonnes of crude oil and causing widespread pollution at sea and along the adjacent shoreline.

The Fund is an intergovernmental organisation set up to pay compensation to the victims of oil pollution. The Fund has, together with Skuld, paid substantial compensation to some 800 claimants. The total amount of compensation paid to the victims of the incident is £36.8 million, of which the Fund paid £29.9 million and Skuld £6.9 million. Of this amount, £23.3 million has been paid to bodies involved in the clean-up operations, around £10 million to fishermen and others in the fishing industry for loss of earnings and £2.3 million to businesses in the tourism industry affected by the pollution, for example, owners of hotels, camping sites, caravan parks, pubs and restaurants. There are no claims outstanding.⁸

b. Erika

On 12 December 1999 the *Erika* broke in two off the coast of Brittany whilst carrying 30,000 tonnes of heavy fuel oil. 19 800 tonnes were spilled. Clean-up operations took place along 400 kilometres of polluted coastline and over 250 000 tonnes of polluted waste was collected from the shoreline. The International Oil Pollution Compensation Fund (IOPC), who manage the compensation claims under the *1971 Fund Convention*, the *1992 Fund Convention* and the *Supplementary Fund Protocol*, reported on the current situation regarding compensation.

The compensation system: who is paying?

Compensation is available to any individual, business, private organisation or public body who has suffered pollution damage as a result of the Erika incident. Compensation is payable under the 1992 Civil Liability and Fund Conventions as enacted into French law.

Approximately €13 million (£9 million) compensation is available from the shipowner's liability insurer, the Steamship Mutual P&I Club. Additional compensation of approximately €172 million (£116 million) is available from the International Oil Pollution Compensation Fund 1992 (1992 Fund). In other words, a total of €185 million (£125 million) is available.

Compensation is payable for expenses actually incurred and for loss or damage actually suffered as a result of the oil pollution. All claims must be properly supported by documentation - a well-substantiated claim can be processed more quickly than one which is not.

[.....]

Level of payments

The total claims arising out of this incident by far exceeded the amount of compensation available, some €185 million or £125 million. In order to enable the

⁸ International Oil Pollution Compensation Fund 1971 Press Release, *Out-of-court settlement of recourse action taken by the International Oil Pollution Compensation Fund 1971 against the Milford Haven Port Authority in relation to the "SEA EMPRESS" incident*, 20 October 2003.

1992 Fund to make substantial payments to claimants, the French Government and the French oil company TotalFinaElf undertook to pursue their claims only if and to the extent that all other claimants were compensated in full, the claim by TotalFinaElf to rank after the Government's claim. Initially, the Fund had nevertheless to limit its payments to a certain percentage of the loss or damage actually suffered by the respective claimants, however in April 2003 the level of payments for claimants other than the French Government and TotalFinaElf was increased to 100%.

The Executive Committee authorised the Director to make payments in respect of the French Government's claim to the extent that he considered there was a sufficient margin between the total amount of compensation available and the Fund's exposure in respect of other claims. In December 2003, the 1992 Fund paid €10 million (£7 million) to the French State, corresponding to the French Government's subrogated claim in respect of the supplementary payments made by the Government to claimants in the tourism sector.

In light of developments during 2004, the Director decided that there was sufficient margin to enable the 1992 Fund to make a further payment to the French State. As a result, in October 2004, an amount of €6 million (£4 million) was paid to the French State relating to the Government's supplementary payments to claimants in the fishery, mariculture, oyster farming and salt producing sectors.⁹

c. *Prestige*

On 13 November 2002 the *Prestige* broke in two off the coast of Galicia (Spain) spilling an unknown quantity of its 77,000 tonnes cargo of heavy fuel oil. The following is taken from the IOPC report:

Claims situation

With respect to Spain, as at 20 September 2005, 741 claims totaling €829 million (£561 million) have been presented to the Claims Office in La Coruña including five claims from the Spanish Government totaling €662.5 million (£449 million). Of the 736 other claims submitted, 65% have been assessed and further supporting documentation has been requested in respect of the remaining claims.

As regards France, as at 20 September 2005, 410 compensation claims totaling €97 million (£66 million) have been received by the Claims Office in Bordeaux, including a claim from the French Government for clean-up totaling €67.5 million (£45.7 million). Other claims relate to losses in the fishing, mariculture and tourism industries. Over 70% of these claims have been assessed and additional information has been requested in respect of many of the remaining claims. The claims are currently being assessed by the 1992 Fund and the London Club.

Concerning Portugal, the Portuguese Government has submitted two claims totaling €4.3 million (£3 million) in respect of clean-up and preventive measures and these claims are also being assessed by the 1992 Fund and the London Club.

⁹ <http://www.iopcfund.org/erika.htm>

Level of payments

It is estimated that the total losses in respect of the Prestige incident, which affected Spain, France and Portugal, could total €1 050 million (£711 million) which greatly exceeds the amount of compensation available, €171.5 million (£116 million). For this reason the Executive Committee decided in May 2003 that the 1992 Fund's payments should be limited to 15% of the loss or damage actually suffered by the respective claimants. In view of the figures provided in June 2005 by the Governments of the three States concerned and the remaining uncertainties as to the level of admissible claims, the Executive Committee decided to maintain this level of payments.

In view of the exceptional circumstances of the Prestige incident, the 1992 Fund Assembly decided at its October 2003 session that the 1992 Fund should make advance payments to the Spanish Government on account, subject to certain conditions. The Director therefore made a preliminary assessment of the claims which had been presented at that time by the Spanish Government for €383.7 million and made a payment of €16 million (£11 million), corresponding to 15% of the interim assessment of €107 million (£72 million). The Director also made a general assessment that the total admissible damage in Spain arising from the incident would be at least €303 million (£205 million) and made a further payment of €41.5 million (£28 million), corresponding to the difference between €57.5 million (15% of €383.7 million) and €16 million. In order to protect the 1992 Fund if an overpayment situation were to arise, this further payment was made against a bank guarantee and an undertaking by the Spanish Government to repay up to the amount of that payment if the Executive Committee so decided.

The 1992 Fund has thus paid a total of €57.5 million (£40 million) to the Spanish Government which has been used to pay compensation to claimants.¹⁰

B. Compensation and Liability Regimes

The *Supplementary Fund* provides compensation in addition to the *1992 Fund Convention* and the *1992 Liability Convention*. The compensation from the 1992 Conventions and the *Supplementary Fund* can be accessed by anyone who has suffered pollution damage in a State that is party to the Conventions and the subsequent protocols. These funding regimes are based on a suite of older conventions set up by the International Maritime Organization (IMO) in the late 1960s.

1. Background

In 1969 the IMO established an initial regime following the *Torrey Canyon* incident off the south coast of England. The 1969 International Convention on Civil Liability for Oil Pollution Damage and the 1971 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage were created. These provided compensation for pollution damage caused by spills from oil tankers to parties in member states. They entered into force in 1975 and 1978.

¹⁰ <http://www.iopcfund.org/prestige.htm>

Following two major incidents off the coast of France, in 1978 the *Amoco Cadiz* and in 1980 the *Tanio*, it became clear that the amount of compensation provided by the 1969 and 1971 Conventions was insufficient. In 1984 the IMO held a conference in London to address this issue at which two Protocols amending the earlier conventions were adopted. However, the 1984 Protocols were drafted in such a way that they could only take effect if ratified by the United States. Many US states had already established their own compensation and liability regulations which effectively made it impossible for the United States to sign up. Following the *Exxon Valdez* incident in Alaska in 1989, which resulted in claims beyond the limits of the 1984 Protocols, the United States went its own way and created its own compensation regime under the *Pollution Act 1990*.

The 1984 Protocols could now no longer enter force and the *Exxon Valdez* incident had shown that compensation provided by them was no longer sufficient. In 1990 the 1971 Fund Assembly set up a working group to establish a new regime based on the same principles as the 1969 and 1971 Conventions.

At a conference in London in 1992 amendments to the 1969 and 1971 Conventions were adopted through two Protocols. The amended conventions became the *1992 Liability Convention* and the *1992 Fund Convention*, which entered into force in May 1996.

As more states adopted the 1992 Conventions the 1969 and 1971 Conventions became less relevant. In May 2002 the 1971 Fund Convention ceased to apply when the number of Fund Member States fell below 25. The 1971 Fund will soon be wound up when all pending claims have been settled.

More recently three incidents, the *Nakhodka* (1997), the *Erika* (1999) and the *Prestige* (2002), have again raised questions about the amount of compensation available. Consequently the *Supplementary Fund* was established.

2. Existing funds

The workings of the three existing funds are explained by the IOPC. Compensation is paid in special drawing rights (SDR) (rates on 3 January 2006: £1 = 1.20726 SDR). Member States as at 3 January 2006 are listed in Appendix 1.

a. 1992 Liability Convention

The 1992 Civil Liability Convention applies to oil pollution damage resulting from spills of persistent oil from tankers. The 1992 Civil Liability Convention covers pollution damage suffered in the territory, territorial sea or exclusive economic zone (EEZ) or equivalent area of a State Party to the Convention. The flag State of the tanker and the nationality of the shipowner are irrelevant for determining the scope of application.

'Pollution damage' is defined as loss or damage caused by contamination. In the case of environmental damage (other than loss of profit from impairment of the environment) compensation is restricted to costs actually incurred or to be incurred for reasonable measures to reinstate the contaminated environment.

The notion of pollution damage includes measures, wherever taken, to prevent or minimise pollution damage in the territory, territorial sea or EEZ or equivalent area of a State Party to the Convention ('preventive measures'). Expenses incurred for preventive measures are recoverable even when no spill of oil occurs, provided that there was a grave and imminent threat of pollution damage.

The 1992 Civil Liability Convention covers spills of cargo and/or bunker oil from laden, and in some cases unladen sea-going vessels constructed or adapted to carry oil in bulk as cargo (but not to dry cargo ships). Damage caused by non-persistent oil, such as gasoline, light diesel oil, kerosene etc, is not covered by the 1992 Civil Liability Convention.

2.2 Strict liability

The owner of a tanker has strict liability (ie he is liable also in the absence of fault) for pollution damage caused by oil spilled from his tanker as a result of an incident. He is exempt from liability under the 1992 Civil Liability Convention only if he proves that:

- (a) the damage resulted from an act of war or a grave natural disaster, or
- (b) the damage was wholly caused by sabotage by a third party, or
- (c) the damage was wholly caused by the negligence of public authorities in maintaining lights or other navigational aids.

2.3 Limitation of liability

The shipowner is normally entitled to limit his liability under the 1992 Civil Liability Convention. The limits were increased by some 50.37% on 1 November 2003 as follows. The increased limits apply to incidents occurring on or after that date:

- (a) for a ship not exceeding 5 000 units of gross tonnage, 4 510 000 Special Drawing Rights (SDR) (US\$6.5 million);
- (b) for a ship with a tonnage between 5 000 and 140 000 units of tonnage, 4 510 000 SDR (US\$6.5 million) plus 631 SDR (US\$911) for each additional unit of tonnage; and
- (c) for a ship of 140 000 units of tonnage or over, 89 770 000 SDR (US\$129.5 million)^{<1>}.

If it is proved that the pollution damage resulted from the shipowner's personal act or omission, committed with the intent to cause such damage, or recklessly and with knowledge that such damage would probably result, the shipowner is deprived of the right to limit his liability.

2.4 Channelling of liability

Claims for pollution damage under the 1992 Civil Liability Convention can be made only against the registered owner of the tanker concerned. This does not preclude victims from claiming compensation outside this Convention from persons other than the owner. However, the Convention prohibits claims against the servants or agents of the owner, members of the crew, the pilot, the charterer (including bareboat charterer), manager or operator of the ship, or any person carrying out salvage operations or preventive measures. The owner is entitled to take recourse action against third parties in accordance with national law.¹¹

¹¹ International Oil Pollution Compensation Fund 1992, *Explanatory note prepared by the 1992 Fund Secretariat*, March 2005

b. The 1992 Fund Convention

The 1992 Fund pays compensation to those suffering oil pollution damage in a State Party to the 1992 Fund Convention who do not obtain full compensation under the 1992 Civil Liability Convention for one of the following reasons:

- (a) the shipowner is exempt from liability under the 1992 Civil Liability Convention because he can invoke one of the exemptions under that Convention; or
- (b) the shipowner is financially incapable of meeting his obligations under the 1992 Civil Liability Convention in full and his insurance is insufficient to satisfy the claims for compensation for pollution damage; or
- (c) the damage exceeds the shipowner's liability under the 1992 Civil Liability Convention.

In order to become Parties to the 1992 Fund Convention, States must also become Parties to the 1992 Civil Liability Convention.

The 1992 Fund does not pay compensation if:

- (a) the damage occurred in a State which was not a Member of the 1992 Fund; or
- (b) the pollution damage resulted from an act of war or was caused by a spill from a warship; or
- (c) the claimant cannot prove that the damage resulted from an incident involving one or more ships as defined (i.e. a sea-going vessel or seaborne craft of any type whatsoever constructed or adapted for the carriage of oil in bulk as cargo).

3.2 Limit of compensation

The maximum amount payable by the 1992 Fund in respect of an incident occurring before 1 November 2003 was 135 million SDR (US\$195 million), including the sum actually paid by the shipowner (or his insurer) under the 1992 Civil Liability Convention. The limit was increased by some 50.37% to 203 million SDR (US\$293 million) on 1 November 2003. The increased limit applies only to incidents occurring on or after this date.

3.3 Competence of courts

Actions for compensation under the 1992 Fund Convention against the 1992 Fund may only be brought before the Courts of the State Party to that Convention in whose territory, territorial sea or EEZ or equivalent area the damage occurred. Experience in past incidents has shown that most claims are settled out of court.

3.4 Organisation of the 1992 Fund

The 1992 Fund has an Assembly, which is composed of representatives of all Member States. The Assembly is the supreme organ governing the 1992 Fund, and it holds regular sessions once a year. The Assembly elects an Executive Committee comprising 15 Member States. The main function of this Committee is to approve settlements of claims.

The 1992 Fund shares a Secretariat with the 1971 Fund and the Supplementary Fund (see sections 4 and 5.2 below). The joint Secretariat is headed by a Director, and has at present 27 staff members.

3.5 Financing of the 1992 Fund

The 1992 Fund is financed by contributions levied on any person who has received in one calendar year more than 150 000 tonnes of crude oil and heavy fuel oil (contributing oil) in a State Party to the 1992 Fund Convention.

Basis of Contributions

The levy of contributions is based on reports of oil receipts in respect of individual contributors. Member States are required to communicate every year to the 1992 Fund the name and address of any person in that State who is liable to contribute, as well as the quantity of contributing oil received by any such person. This applies whether the receiver of oil is a Government authority, a State-owned company or a private company. Except in the case of associated persons (subsidiaries and commonly controlled entities), only persons having received more than 150 000 tonnes of contributing oil in the relevant year should be reported.

Oil is counted for contribution purposes each time it is received at a port or terminal installation in a Member State after carriage by sea. The term **received** refers to receipt into tankage or storage immediately after carriage by sea. The place of loading is irrelevant in this context; the oil may be imported from abroad, carried from another port in the same State or transported by ship from an off-shore production rig. Also oil received for transshipment to another port or received for further transport by pipeline is considered received for contribution purposes.

Payment of Contributions

Annual contributions are levied by the 1992 Fund to meet the anticipated payments of compensation and administrative expenses during the coming year. Each contributor pays a specified amount per tonne of contributing oil received. The amount levied is decided each year by the Assembly.

The Director issues an invoice to each contributor, following the decision taken by the Assembly to levy annual contributions. A system of deferred invoicing exists whereby the Assembly fixes the total amount to be levied in contributions for a given calendar year, but decides that only a specific lower total amount should be invoiced for payment by 1 March in the following year, the remaining amount, or a part thereof, to be invoiced later in the year if it should prove to be necessary.

The contributions are payable by the individual contributors directly to the 1992 Fund. A State is not responsible for the payment of contributions levied on contributors in that State, unless it has voluntarily accepted such responsibility.

Level of Contributions

Payments made by the 1992 Fund in respect of claims for compensation for oil pollution damage may vary considerably from year to year, resulting in fluctuating levels of contributions. The following table sets out the contributions levied by the 1992 Fund during the period 1996-2004.¹²

¹² International Oil Pollution Compensation Fund 1992, *Explanatory note prepared by the 1992 Fund Secretariat*, March 2005

Annual contributions	Date due	Total contribution £	Contribution per tonne of contributing oil £
1996	01.02.1997	4 000 000	0.0110440
	01.09.1997	10 000 000	0.0188066
1997	01.02.1998	9 500 000	0.0114295
	Maximum deferred levy	30 000 000	(No deferred levy made)
1998	01.02.1999	28 200 000	0.0400684
	01.09.1999	9 000 000	0.0134974
1999	Credit: 01.03.2000	-3 700 000	-0.0056367
	01.09.2000	53 000 000	0.0552651
2000	01.03.2001	49 500 000	0.0545770
	Maximum deferred levy	43 000 000	(No deferred levy made)
2001	01.03.2002	41 000 000	0.0428439
	Maximum deferred levy	21 000 000	(No deferred levy made)
2002	01.03.2003	31 000 000	0.0274518
2003	01.03.2004	82 000 000	0.0052994
	Maximum deferred levy	40 500 000	(No deferred levy made)
2004	01.03.2005	37 800 000	0.0273362

The UK currently contributes 5.75% of all annual payments to the IOPC Fund.¹³

c. *The Supplementary Fund Convention*

On 3 March 2005 a third tier of compensation was established by means of a Supplementary Fund under a Protocol adopted in 2003. So far twelve States have ratified the Protocol.

The Supplementary Fund provides additional compensation over and above that available under the 1992 Fund Convention for pollution damage in the States that become Parties to the Protocol. As a result, the total amount available for compensation for each incident for pollution damage in the States which become Members of the Supplementary Fund is 750 million SDR (US\$1 082 million), including the amounts payable under the 1992 Civil Liability Convention and the 1992 Fund Convention, 203 million SDR (US\$293 million).

The Supplementary Fund only pays compensation for pollution damage for incidents which occur after the Protocol has entered into force for the State concerned. Membership of the Supplementary Fund is optional and any State which is a Member of the 1992 Fund may join the Supplementary Fund. Annual contributions to the Supplementary Fund will be made in respect of each Member State by any person who, in any calendar year, has received total quantities of oil

¹³ Department for Transport, *International Fund for Compensation for Oil Pollution Damage: Consultation Paper*, May 2004.

exceeding 150 000 tonnes after sea transport in ports and terminal installations in that State. However, the contribution system for the Supplementary Fund differs from that of the 1992 Fund in that, for the purpose of paying contributions, at least 1 million tonnes of contributing oil will be deemed to have been received each year in each Member State.¹⁴

C. Proposals in the Bill

Clause 1 of the *Merchant Shipping (Pollution) Bill* provides powers to implement the *Supplementary Fund Protocol* once the United Kingdom has ratified it. This will be done through secondary legislation. Clause 1 also enables secondary legislation to be made to implement modifications to the *Supplementary Fund Protocol*.

Clause 3 clarifies existing legislation by amending the *Merchant Shipping Act 1995*. It makes it clear that claims against the *Fund Convention* can only be made in the UK within 3 years of damage occurring.

1. Consultation

In May 2004 the Department for Transport consulted oil and shipping companies and other relevant organizations on the implementation of the *Supplementary Fund*. The consultation states that since the adoption of the *Liability Convention* and the *Fund Convention*:

...it has become apparent that the level of compensation provided is insufficient to meet all the costs of some oil spills. A number of incidents in recent years have highlighted the need to provide for increased compensation above the levels of the 1992 Fund: the *Nakhodka* (1997, Japan) the *Erika* (1999, France) and the *Prestige* (2002, Spain).¹⁵

The consultation also explains how the *Supplementary Fund* is expected to be financed, under article 10 of the Protocol, using the same financial structure as the existing *Fund Convention*:

The requirements to make financial contributions to the Supplementary Fund Protocol are exactly the same as those under the 1992 Fund Convention, i.e. any person in a contracting State to the Protocol who has received:

More than 150,000 tons of contributing oil in a calendar year, in the ports or terminal installations in the territory of that State, if the contributing oil was carried by sea to such ports/terminal installations.

The effect is, therefore, that implementation of the Supplementary Fund Protocol allows for the possibility of a second call for contributions on the receivers to the 1992 Fund in all States that opt to become contracting States to the Protocol.

¹⁴ International Oil Pollution Compensation Fund 1992, *Explanatory note prepared by the 1992 Fund Secretariat*, March 2005

¹⁵ Department for Transport, *International Fund for Compensation for Oil Pollution Damage: Consultation Paper*, May 2004.

The consultation goes on to explain how receipts of oil will be reported, and how the fund will be administered under the terms set out in the Protocol. Copies of the consultation are available from the Department's website.¹⁶ Responses to the consultation were not published though references were made as the Bill passed through the Lords.

2. Impact Assessment

The impact assessment in the consultation presents the two options summarised below:

1. To continue under the existing *1992 Liability Convention* and the *1992 Fund Convention*.
 - This would place no extra burden on receivers of oil from ships, and would require no new legislation
 - Current levels of compensation are not necessarily adequate to compensate victims of major incidents; Environmental damage will result if there is inadequate compensation for clean up operations; The UK would fail to comply with EU recommendations.
2. To implement the Supplementary Fund Protocol.
 - This would make it more likely that victims from oil pollution receive adequate compensation; Compensation can be distributed more quickly; It ensures compliance with decisions from the European Council; Costs to Industry will continue to be spread globally.
 - Oil receivers will be subject to increased financial contributions; Fund membership may be small.

A risk assessment of the two options is also presented providing estimated financial contributions required from UK industry for each of the two options. A worse case scenario is explored where a full payout from the *Supplementary Fund* is required. It is estimated in the Regulatory Impact Assessment, that UK industry could be required to contribute potential annual costs in the range of £6.9 million to £16.5 million.¹⁷

3. Comment

The Bill had a first reading in the House of Lords on 25 May 2005. The environmental news service EDIE subsequently reported:

If passed into law, the Merchant Shipping (Pollution) Bill will make an additional £440 million available for compensation in the event of a major oil spill. This is designed to prevent any financial hardship which might result if the payment of claims is delayed or if the current amount available for compensation (£162 million) is insufficient.

¹⁶ http://www.dft.gov.uk/stellent/groups/dft_shipping/documents/page/dft_shipping_027949.hcsp

¹⁷ Bill Team, Shipping Policy, *Department for Transport*, 23 January 2006

It would also allow the UK to join in any future changes to the international regime governing compensation for oil pollution without awaiting primary legislation. This means the UK could participate from the outset in any future regime and would ensure the best financial protection as quickly as possible for the UK's coastal interests.

Shipping Minister Dr Ladyman said: "This bill will ensure that the UK has in place the best possible arrangements for ensuring the future financial protection of the fishing and tourism communities, who have been victims of oil pollution in the past."¹⁸

In the past Friends of the Earth have commented on the existing IOPC fund system, which they see as an inadequate. The following article was released before the *Supplementary Fund* was fully established. It is concerned with providing compensation for incidents that were inadequately compensated and which the *Supplementary Fund* will not be able to compensate. The release suggests that the IOPC may have a part to play in collecting extra compensation by pursuing the companies involved.

London (UK) October 24 -Victims of oil disasters, including those affected by the Prestige spillage, will find out today whether they will get full compensation immediately or have to wait potentially years for a future date for full payment.

Tourism and fishing industries were badly hit by the Prestige disaster, however those affected are currently only receiving compensation at 15% of their losses. Today's decision by Member States of the International Oil Pollution Compensation Funds will come as the environmental charity, Friends of the Earth, renews its call for company directors to be held liable for damages.

In Britain Friends of the Earth, with allies in the CORE Bill coalition, is pressing for changes in UK company law to make directors liable for damage caused anywhere in the world. This would allow victims of oil pollution created by British companies, or companies with British directors, to seek compensation in the UK.

There are currently two IOPC Funds, set up in 1971 and 1992. They have different members and different rules. Over time, as more members have joined the 1992 Fund, it has largely superseded the 1971 Fund. The 1971 Fund is therefore being wound down and now will only settle payments for certain incidents that have already happened – such as the Nissos Amorgos. A new supplementary fund is likely to be set up in the near future. Its aim will be to provide extra compensation to victims of future spills in member countries who have paid into the supplementary fund . Recently, after a decision by its Members, the Fund Secretariat has begun to pursue agencies that it believes are at fault for oil pollution disasters. Earlier this week, it announced it had reached an out-of-court settlement with the Milford Haven Port Authority over compensation paid to victims of the Sea Empress disaster in Pembrokeshire in 1996 . This raises the possibility that the Fund may seek recompense from the

¹⁸ EDIE, *Merchant shipping bill goes before Lords*, 10 June 2005.
http://www.edie.net/news/news_story.asp?id=10081&channel=0

Spanish or Gibraltarian authorities – both of whom have accused of failures in respect of the Prestige.¹⁹

D. Lords Debate

1. Second Reading

At Second Reading, support for the Bill was voiced from both sides of the house. Debate on the Bill centered on the workings of the *Supplementary Fund* along with a more general discussion of pollution at sea. Action was requested from the opposition benches to tighten up controls on all aspects of marine pollution and safety.

Lord Hanningfield asked whether the Government had consulted with the UK oil industry and shipping industry before drafting legislation. In response Baroness Crawley made reference to the IMO conventions at which the *Supplementary Fund Protocol* was drawn up. At these representatives from both industries were present where they agreed to the text of the protocol. Further to this a public consultation was held before drafting the Bill and the associated secondary legislation. Representations were made from UK oil and shipping industries:

The noble Lord, Lord Hanningfield, also asked whether the Government had consulted British shipping industry interests. The United Kingdom delegation to the IMO consulted widely and worked closely with the industry in playing a full and active part in securing international agreement on those new measures and the subsequent addition to the MARPOL Convention. The industry has also been widely consulted about secondary legislation ...

... The noble Lord also asked what the oil industry's response was to public consultation on the Supplementary Fund Protocol. The oil industry supports the implementation of the Supplementary Fund Protocol as part of the overall review of the regime, and it was represented at the diplomatic conference that adopted the protocol.²⁰

A number of questions were raised about nations that are not party to any level of the IOPC regime and ships that operate outside the regime under the flags of these states. In response to these Baroness Crawley replied:

The noble Lord, Lord Bradshaw, was concerned about flag states becoming parties to the regime. The supplementary fund does not rely on flag-state participation. It is also worth pointing out that the major flag states and the shipping industry supported the supplementary fund being set up. All tankers coming into our ports have to meet the compulsory insurance regulations and liability limits of the regime...

...It is an entry-into-port requirement that all vessels carrying oil in bulk as cargo must maintain insurance to cover the liability under the regime. They must also

¹⁹ FOE, Press release, *Oil Pollution Victims Short-Changed Again*, 24 October 2003

²⁰ HL Deb 14 June 2005 C1147

have a state-issued certificate, attesting that suitable insurance is in place. Failure to carry a certificate is punishable by a fine of £50,000. A vessel may also be detained if it attempts to leave port.²¹

2. Grand Committee, Report Stage and Third Reading

At the Grand Committee stage three points worthy of note were raised. The first two of these came from amendments tabled by Lord Hanningfield who took the opportunity to ask the Government to explain the process of ratifying the treaty. Baroness Crawley replied:

A number of aspects of the Bill are designed to ensure that the Supplementary Fund Protocol is given effect to at the earliest opportunity—that is the thrust of the amendment tabled by the noble Lord, Lord Hanningfield. The power to implement the protocol in Clause 1(2)(a) will come into force on Royal Assent and the secondary legislation made under that power will be subject to the negative resolution procedure. We have also made drafts of the legislation, which I have made available in the Libraries of both Houses. I hope that when noble Lords have had a chance to look at it, they will see that those drafts are also at an advanced stage. We hope to be in a position to ratify and implement the Supplementary Fund Protocol as soon as the Bill is passed, if that is the will of Parliament...

... On the issue of the supplementary fund timetable as we hope it will run, although obviously it is in the hands of Parliament and the usual channels, we look to see Royal Assent given to the Bill by December 2005. That would bring us to January 2006. One week after Royal Assent, the Order in Council will be passed to the Clerk of the Privy Council for Her Majesty to consider. In February the order will be laid before Parliament, and from February to March we hope that the UK will accede to the Supplementary Fund Protocol, while from May to June the protocol would enter into force; that is, some three months after accession. So long as there is goodwill in both this House and another place, we hope that the timetable I have outlined will result in the earliest possible conclusion.²²

A second amendment was tabled by Lord Hanningfield as an opportunity to question how subsection (2) (b) of Clause 1 will enable the Government to introduce legislation if any of the IOPC conventions or protocols are altered. Lord Hanningfield states:

Again I want to make it quite clear that this is a probing amendment which attempts to tease out a little more information on how subsection (2)(b) is to work in practice.

We are told that paragraph (b) would create a power to make subordinate legislation or to provide for the delegation of functions that could be exercised under an Order in Council along the lines we talked about just now. Such an order could therefore contain provision to make further legislative instruments or administrative arrangements. We are told that such a power is necessary to implement the procedure in Article 24 of the Supplementary Fund Protocol and

²¹ HL Deb 14 June 2005 C1148

²² HL Deb 11 July 2005 GC123-4

would allow for increases to be made to the limits of liability or compensation as set out in each instrument without the need to revise or amend the instrument in question.

I have just one or two questions on this issue. There is a general point to make here in that is there not a danger that, in passing this legislation, once it leaves Parliament it could be changed or altered without any further scrutiny or consideration whatever? What mechanisms are in place to ensure that Parliament is informed of any changes subsequently made under the order? What rights of appeal or redress are in place?²³

In response Baroness Crawley described the need for such powers and explained how similar subordinate legislation has been used in the past:

In short, so far as concerns the supplementary fund, Parliament will be consulted through negative resolution. So far as future commitments are concerned, whole or part, it will be through affirmative resolution. So it will be through secondary legislation and affirmative resolution.

I remind the Committee that this is a very narrow provision which may be used only to give effect to an international agreement relating to compensation for oil pollution provided that such an agreement modifies or replaces one of the instruments to which the UK is already a party or the Supplementary Fund Protocol. An Order in Council made under this provision must be laid before and approved by a resolution of each House. It will allow Parliament the opportunity rigorously to scrutinise any such legislation before it comes into effect, which I believe is the noble Lord's concern.

The noble Lord, Lord Hanningfield, referred to the Explanatory Notes. They will be amended. We agree that they are not as clear as they might be.

The noble Lord asked about government amendments to make subordinate legislation in relation to the fund subject to the negative resolution procedure and about the limits being changed. The last time the limits were changed was in 2003. That perhaps gives some idea of the amount of time it will take before we are called upon to consider the limits. With that explanation, I hope that the noble Lord will withdraw his amendment.²⁴

A final point made during the Grand Committee which also continued to the Report stage of the Bill's reading concerned the adoption of the *Supplementary Fund* in other States. In Grand Committee Lord Hanningfield tabled an amendment requiring the Secretary of State to publish an annual report on progress towards 'full ratification' of the *Supplementary Fund Protocol*. He said:

With [such] notable absentees, surely the whole scheme is undermined. Indeed, the two countries with the largest registered tonnage, Panama and Liberia, are notable by their absence. For instance, what would happen if a major oil spill

²³ HL Deb 11 July 2005 GC 124

²⁴ HL Deb 11 July 2005 GC127

occurred either in the waters of a country which had not signed up to the fund or to a vessel registered in one of those absentee countries?²⁵

Baroness Crawley's reply reiterated the position that was described in the second reading debate - that ships entering UK waters must have a certificate of insurance. Baroness Crawley also questioned the use of a report, questioning the benefits that a yearly statement would provide.

Lord Hanningfield developed his position further at the report stage of the Bill and tabled an amendment requiring the UK to promote internationally the *Supplementary Fund*. The following response was provided.

The Government agree that the UK should use its best endeavours to encourage other states to join the supplementary fund protocol. I am happy to repeat today that the Government's intention is to ratify the supplementary fund protocol as soon as possible after the Bill receives Royal Assent, if that is the will of Parliament. Once the UK has ratified the supplementary fund protocol, we will be in a better position to encourage other states to join, and that is our intention. Until we have ratified and brought the protocol into force, it is difficult to bring pressure to bear on other states to do the same. Should the House agree, and should the other place go through its procedure, ratification could take place by the end of February and the bringing into force of the protocol by May of next year, at which point we could look other states in the eye and ask them what point they have reached as regards ratification.

The Government are a strong supporter of the international oil pollution compensation regime and believe that wide participation in the Supplementary Fund Protocol will both strengthen the regime and ensure its continued international status. Broad international membership of the supplementary fund will also benefit our oil industry as contributions for compensation in the event of a major oil spill will be spread across a greater number of oil receivers.

I assure noble Lords that the Government fully intend to take opportunities, on the back of UK ratification, to encourage other states to join the Supplementary Fund Protocol, as the noble Lord encourages us to do. However, the Government believe that it would be more appropriate to do so through bilateral meetings and discussion at the International Maritime Organisation rather than by pre-published action plans.

We intend to remind our European colleagues that we are all required by a European Council decision of March 2004 to ratify the Supplementary Fund Protocol as soon as possible. We will urge member states to fulfil their obligations under that decision.

We will also work very closely with our Austrian colleagues, who will take the chair of the European Union in January. We will work with them particularly closely on maritime issues. We will use that close working relationship to remind our European Union colleagues of the obligations that they are under. We will be able to check also on the progress of our international colleagues beyond the

²⁵ HL Deb 11 July 2005 GC132

European Union family with other IOPC states at the meeting that they will hold next spring, on the assumption, of course, that we ourselves have ratified at that stage.

I hope that the action we are taking is enough to reassure the noble Lord and that he will agree that it is not necessary to include his amendment in primary legislation.²⁶

The Bill passed through the House of Lords without amendment from any of the above. Two amendments that were adopted were tabled by the Government in Grand Committee to rectify drafting ambiguities.

II *Merchant Shipping (Pollution) Bill* [HL]: Clause 2

A. Air pollution from ships

Ships are fast becoming the biggest source of air pollution in the EU. Unless more action is taken they are set to emit more than all land sources combined by 2020.²⁷

Air pollution from ships comes in a variety of forms and has a number of effects. The source of these pollutants can come from exhaust fumes and other processes such as cooling systems. These emissions do not disperse harmlessly into the sea and can, particularly in coastal or port areas, cause environmental problems on land. These include adverse effects on human health, the natural environment and the built environment.²⁸

The primary emissions from ship exhaust of concern are sulphur oxides (SO_x), nitrous oxides (NO_x) and particulates. Other emissions from shipping can include volatile organic compounds (VOC) and ozone depleting substances. Greenhouse gases are also emitted from ships from both the exhaust (e.g. carbon dioxide) and other processes.

1. Particulates

Sulphur oxides (SO_x) and nitrous oxides (NO_x) can be converted in the atmosphere into very fine sulphate and nitrate particles. These gases are released in the exhaust fumes along with small particles such as soot. Exposure to these very fine particles (PM) is associated with increased mortality from respiratory and cardio-vascular disease and some studies may suggest a link to reproductive disorders.²⁹

Although the levels of particulates have been falling in recent years, due in part to the introduction of catalytic converters, it is estimated that up to 45% of Europe's urban population is exposed to PM levels which exceed recommended levels.³⁰ A report by the

²⁶ HL Deb 17 October 2005 GC 580

²⁷ <http://europa.eu.int/comm/environment/air/transport.htm#3>

²⁸ Communication from the Commission to the European Parliament and the Council, *A European Union Strategy to reduce atmospheric emissions from seagoing ships*, Volume I, 20 November 2005

²⁹ M Krzyzanowski, *Health effects of transport-related air pollution*, 2005, p162

³⁰ European Environment Agency, *Environmental Signals 2004*, 2004, p20
http://reports.eea.eu.int/signals-2004/en/tab_abstract_RLR

Department of Health estimated that approximately 8,000 deaths are brought prematurely forward in the UK each year as a result of PM pollution in urban areas.³¹

A World Health Organization report said:

A recent estimate for Austria, France and Switzerland (combined population of about 75 million) is that some 40 000 deaths per year can be attributed to ambient PM (80). Similarly high numbers have been estimated for respiratory and cardiovascular hospital admissions, bronchitis episodes and restricted activity days. The Global Burden of Disease project has recently expanded its analysis of the impact of common risk factors on health to include environmental factors. It has been estimated that exposure to fine particulate matter in outdoor air leads to about 100 000 deaths (and 725 000 years of life lost) annually in Europe.³²

It is thought that ship emissions contribute between 20-30% of PM concentrations in most coastal areas of Europe.³³

2. Ground level ozone

Ground level ozone is formed in the lower atmosphere through a series of complex reactions between NO_x, VOC and carbon monoxide (CO) in the presence of sunlight. Ozone can move over large areas and high concentrations of the gas lead to increases in respiratory symptoms and deaths.³⁴ It can also cause damage to vegetation, having negative implications for agriculture, forestry and natural environments.

A briefing document produced by the European Environmental Bureau said:

Shipping emissions contribute notably to the formation of ground-level ozone, especially in the Mediterranean region, where increased concentrations resulting from ships' NO_x emissions amount to 16-20 µg/m³ [...]. The high concentrations of ozone in the Mediterranean region do not only affect human health and crop yields, but also pose a threat to the region's important tourist industry.³⁵

European Directive 2002/3/EC set a target value for ozone of 120 µg/m³ in order to protect human health.³⁶

³¹ Department of Health, *The quantification of the effects of air pollution on health in the United Kingdom*, 13 January 1998, <http://www.advisorybodies.doh.gov.uk/comeap/statementsreports/airpol7.htm>

³² World Health Organization, *Health aspects of air pollution with particulate matter, ozone and nitrogen dioxide; Report on a WHO Working Group*, 13-15 January 2003

³³ European Commission, *Proposal for a Directive of the European Parliament and of the Council; Amending Directive 1999/32/EC as regards the sulphur content of marine fuels*, Volume II, 20 November 2002

³⁴ M Krzyzanowski, *Health effects of transport-related air pollution*, 2005, p58

³⁵ European Environmental Bureau, *Air pollution from ships*, November 2004, p4
[http://www.eeb.org/activities/air/ship-briefing-nov04-\(1\).pdf](http://www.eeb.org/activities/air/ship-briefing-nov04-(1).pdf)

³⁶ National Society for Clean Air and Environmental Protection, *Pollution Handbook 2005*, January 2005, p77

Research by the National Atmospheric Emissions Inventory (NAEI), found:

Ground-level ozone continues to exceed thresholds for effects on vegetation and human health over large areas of the UK, although peak concentrations have declined by about 30% over the last decade.

There is evidence that the mean ground-level ozone concentration over the UK is increasing.³⁷

Background ozone levels may be increasing as a result of increased pollution from outside the UK and Europe.

3. Acidification

Sulphur dioxide (SO₂) and NO_x gases are acidic and can be directly deposited on surfaces. In addition, SO₂ and NO_x combine with water in the atmosphere to form weak sulphuric and nitric acids resulting in so-called acid rain.

Acid deposition has multiple effects. Buildings and other man-made structures constructed out of sensitive materials such as limestone can be eroded severely:

Limestone, marble and sandstone are particularly vulnerable, whilst granitic-based rocks are more resistant to acidity. Other vulnerable materials include carbon-steel, nickel, zinc, copper, paint, some plastics, paper, leather and textiles. Stainless steel and aluminium are more resistant metals. Structural damage to underground pipes, cables and foundations submerged in acid waters can also occur, in addition to damage to buildings, bridges and vehicles above ground.

[...]

The effects of acid deposition on modern buildings are considerably less damaging than the effects on ancient monuments. Limestone and carbonate stones which are used in most heritage buildings in the UK are the most vulnerable to corrosion and need continued renovation. Cathedrals such as York Minster and Westminster Abbey have been severely eroded in recent years. A five-year research program in the UK has suggested that if sulphur dioxide emissions were reduced by 30%, savings over 30 years could be as high as £9.5 billion.³⁸

Acidification also has a negative impact on natural environments. It can cause the release of harmful metals in the soil which can damage plants and the fungal network (mycorrhizae) which helps plants to obtain nutrients from the soil. This can lead to decreased plant growth or changes in plant communities.³⁹ In addition, soil micro-

³⁷ National Expert Group on Transboundary Air Pollution, *Transboundary Air Pollution; Acidification, eutrofication and ground-level ozone in the UK*, 2001, p23

³⁸ Atmosphere, Climate and Environment Information Programme, Defra, <http://www.ace.mmu.ac.uk/eae/english.html>

³⁹ Department for the Environment, Transport and Regions, *Acid Rain: Acidification in the UK*, September 2000, <http://www.defra.gov.uk/environment/airquality/acidrain/index.htm>

organism populations may change leading to a reduction in a number of soil processes such as the breakdown of leaf litter.

A Department for the Environment, Transport and the Regions report detailed other problems that acid deposition can cause:

Acidification of soils gradually leads to acidification of waters draining from them. Eventually the streams and lakes fed by water from these soils may themselves become acid. Acidity and toxic aluminium [released by the acid from soils] can cause harm to aquatic animals. In acidified waters the diversity and size of invertebrate and fish populations decline. Acid tolerant species become dominant. In extreme cases lakes and rivers become fishless.

It is not always easy to see the effects of acidification or to know if they have been caused by air pollution. Many areas are naturally quite acid. Their acid soils contain few minerals or they are resistant to weathering. The way land is managed can also make acidification problems worse, e.g. trees can increase the amount of acid deposited. Close to large air pollution sources, more obvious soil acidification effects from acid deposition are found. Root damage and changes in soil micro-organisms and soil chemistry are clearly seen. Much further from pollution sources, a number of studies have shown regional effects in acid sensitive areas in the UK uplands. These report increased rates of acidification of soils over the last 20 to 40 years. They conclude that inputs of acidity in rainfall must be a major cause.

Soils most at risk of acid effects are those derived from the old, hard rocks of the north and west of Britain and some younger sandy deposits in the south and east. The minerals in these rocks break down very slowly. They release only small amounts of base cations, particularly calcium and magnesium, which can neutralise acidity.

The acid peats of the uplands are also vulnerable. Because their water chemistry is strongly influenced by the chemistry of incoming rainfall, as the rainfall acidifies, so does the peat.

Lakes that are now acid were often unacidified before the mid-1800s, when emissions of oxides of sulphur and nitrogen were small. We know this from looking at the remains of diatoms (microscopic aquatic organisms), which are found in lake sediments. Marked changes in the species occur. These can be linked to the start of the industrial revolution and the high pollutant emissions in this century. The presence of carbon particles in some lake sediments gives further evidence of the causes of change and helps identify the combustion processes (eg coal and oil burning) involved. While many lakes have not become acidified, some are likely to be affected in the future as their ability to neutralise acidity becomes exhausted.

Lake acidification also provides indirect evidence for the acidification of soils. Lake water is largely controlled by the chemistry of the water draining from the surrounding soils and rocks. In many areas of Europe, particularly in northern countries, similar changes to those seen in the UK have taken place in soils and freshwaters. In lakes in Norway and Sweden great changes to diatoms and fish populations have been observed.

The amount of deposited acidity varies with rainfall and the concentration of pollutant gases and particles in the atmosphere. The largest deposition may be in areas remote from sources of the pollutants. In the UK, high deposition areas include Cumbria, Snowdonia and Galloway. Here the high rainfall washes more of the pollutants out of the air. Since these areas also contain acid sensitive soils, acidification of soils and freshwaters is more likely.⁴⁰

Terrestrial UK emissions of SO₂ declined by 57% between 1986 and 1997, largely as a result of a decline in fuel oil use and the lowering of the sulphur content of gas, fuel oil and diesel. This decline is expected to continue and then level off by 2020.⁴¹ Power stations are the main source of this pollutant, contributing more than two-thirds of the UK total in 2002.

Emissions of SO₂ from shipping, however, have seen relatively small recent increases, although the current levels are well below those seen in 1995.

In 2002 emissions of SO₂ from coastal shipping and international marine totalled 92 kilotonnes. As the international share of these emissions is not part of the UK National Atmospheric Emissions Inventory (NAEI) total, it is not accurate to express this as a proportion of UK emissions. If, however, they were included total emissions from shipping would account for around 8.5% of the (expanded) national total.⁴²

The National Expert Group on Transboundary Pollution (NEGTP) discussed the impact of shipping on SO₂ concentrations in the UK:

European, and especially UK, emissions declined by *ca* 50% over the period 1986-1997. However, emissions for the US changed little (-12%) and more importantly emissions for shipping in the North Atlantic have increased substantially as traffic and the S content of fuel have both increased. The contribution of shipping sources to sulphur deposition in the UK has been studied [...], who show that shipping may contribute 12% of the sulphur deposition in west coast sites. [Although] the precise effect of the changes in shipping emissions is difficult to quantify [...].⁴³

The National Expert Group on Transboundary Air Pollution (NEGTA) said that it is possible that all the reductions in terrestrial SO₂ emissions have been offset by shipping emissions in certain areas of the west coast.⁴⁴ They say that for damaged ecosystems to recover in Western Britain, it may be necessary to control the emission of sulphur from

⁴⁰ Department for the Environment, Transport and Regions, Acid Rain: Acidification in the UK, September 2000, <http://www.defra.gov.uk/environment/airquality/acidrain/index.htm>

⁴¹ National Expert Group on Transboundary Air Pollution, *Transboundary Air Pollution; Acidification, eutrofication and ground-level ozone in the UK*, 2001, p6

⁴² Statistics provided by Paul Bolton, Social and General Statistics section, from National Atmospheric Emissions Inventory, <http://www.naei.org.uk>

⁴³ National Expert Group on Transboundary Air Pollution, *Transboundary Air Pollution; Acidification, eutrofication and ground-level ozone in the UK*, 2001, p49

⁴⁴ *Ibid*

shipping.⁴⁵ The effects of SO₂ pollution from ships are thought to be particularly apparent around large ports.⁴⁶

Terrestrial NO_x emissions reduced by 30% in the period 1970-1998, the introduction of catalytic converters playing the major role in this.⁴⁷ In 2002, emissions of NO_x from coastal and international marine shipping totalled 158 kilotonnes. As for SO₂, the international share of these emissions is not part of the UK total and it is therefore not accurate to express this as a proportion of the UK figure given by the NAEI. If, however, they were included total emissions from shipping would account for around 9% of the (expanded) national total.⁴⁸

The largest single source of NO_x in 2002 was heavy goods vehicles and buses (330 kilotonnes). Emissions from shipping have increased in the past two years but are still some way below their 1995 level of 176 kilotonnes.⁴⁹ There are 'significant localised emissions' of NO_x from shipping in port areas.⁵⁰

A European Commission Communication, said modelling showed that:

[...] there are a large number of grid cells in Northern Europe where ship emissions [both SO₂ and NO_x] are responsible for more than 90% of the exceedance of critical loads for acidity. Ship traffic contributes to exceedances by more than 50% in most of the coastal areas along the English channel and North Sea, in the Baltic sea along the coast of Germany and Poland, and also in large parts of southern Sweden and Finland.⁵¹

4. Eutrophication

NO_x emissions can be converted to nitrates, a plant nutrient. Excessive emission of NO_x can therefore lead to eutrophication which is the process of nutrient enrichment.⁵² Nutrients are scarce in many natural environments and species have therefore adapted naturally to cope with such situations. The addition of unnaturally high concentrations of nutrients can lead to a change in the species composition of a habitat, usually leading to a loss of biodiversity. This can occur in both aquatic and terrestrial habitats.

Critical loads⁵³ for eutrophication were exceeded between 1995-1997 in ~25% of UK 1km² grid squares of sensitive grasslands and ~55% of squares with heathland. These

⁴⁵ National Expert Group on Transboundary Air Pollution, *Transboundary Air Pollution; Acidification, eutrophication and ground-level ozone in the UK*, 2001, p50

⁴⁶ NAEI website <http://www.naei.org.uk>

⁴⁷ National Expert Group on Transboundary Air Pollution, *Transboundary Air Pollution; Acidification, eutrophication and ground-level ozone in the UK*, 2001, p13

⁴⁸ Statistics provided by Paul Bolton, Social and General Statistics section, from National Atmospheric Emissions Inventory, <http://www.naei.org.uk>

⁴⁹ NAEI website <http://www.naei.org.uk>

⁵⁰ National Expert Group on Transboundary Air Pollution, *Transboundary Air Pollution; Acidification, eutrophication and ground-level ozone in the UK*, 2001, p15

⁵¹ European Commission Communication – A European Union strategy to reduce atmospheric emissions from seagoing ships, 2002

⁵² M. Allaby, *The Concise Oxford Dictionary of Ecology*, Oxford University Press, 1994, p146

⁵³ The level at which effects may be observed

are priority habitats under the UK Biodiversity Action Plan. These percentages are expected to decline to ~20% and ~40% respectively by 2010. However, NEGTP said in its 2001 report that there was no evidence as yet of chemical or biological recovery from the eutrophying effects of air pollution. The recovery process from this form of pollution is expected to be slow.⁵⁴

Across Europe, there are a large number of grid cells in which shipping is responsible for over 90% of nutrient exceedances, including along the English Channel. In the Mediterranean, ship emissions contribute to more than 50% of exceedances in parts of Spain, Greece and Italy.⁵⁵

5. Volatile organic compounds

Volatile organic compounds (VOC) are defined under the VOC Protocol 1991 as “all organic compounds of anthropogenic nature, other than methane, that are capable of producing photochemical oxidants by reaction with nitrogen oxides in the presence of sunlight”. These chemicals are involved with the formation of ground-level ozone with the implications outlined above and are also, in their own right, of concern as some can cause depletion of the ozone layer. In addition, the oxidants of VOC are greenhouse gases; thus they have regional and transboundary effects.⁵⁶

These gases are emitted from a wide variety of sources. They are emitted to air as combustion products, as vapour from petrol and solvent use and a variety of industrial processes.⁵⁷ Between 1988-1999 UK non-methane VOC emissions fell 37% and from 1990-2002 emissions fell a further 51% to 1.186 million tonnes.⁵⁸ The UK has therefore met its commitment under the National Emission Ceilings Directive, to reduce these emissions to 1.200 million tonnes by 2010.⁵⁹

⁵⁴ National Expert Group on Transboundary Air Pollution, *Transboundary Air Pollution; Acidification, eutrofication and ground-level ozone in the UK*, 2001, p.xi

⁵⁵ Communication from the Commission to the European Parliament and the Council, *A European Union Strategy to reduce atmospheric emissions from seagoing ships*, Volume I, 20 November 2005, p10

⁵⁶ National Society for Clean Air and Environmental Protection, *Pollution Handbook 2005*, January 2005, p72

⁵⁷ NAEI website <http://www.naei.org.uk>

⁵⁸ National Society for Clean Air and Environmental Protection, *Pollution Handbook 2005*, January 2005, p73

⁵⁹ *ibid*, p80

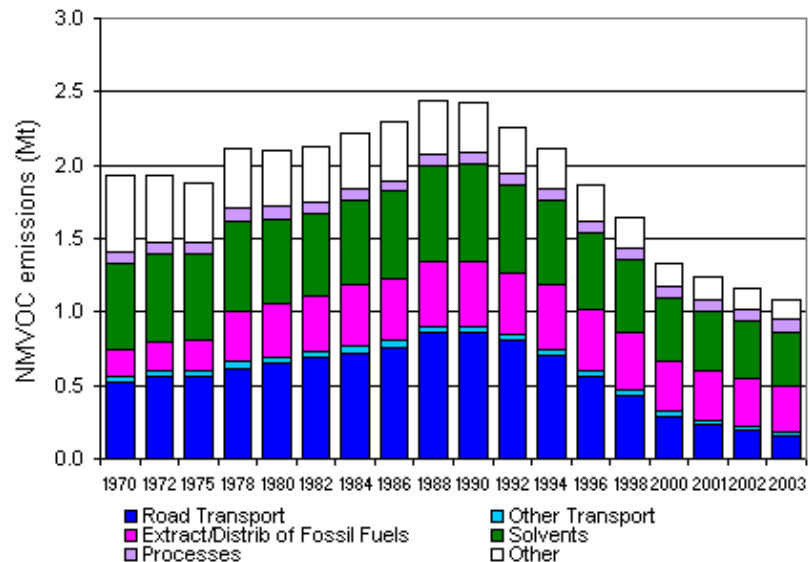


Figure 1: Non-methane volatile organic compounds emitted in the UK (million tonnes), from NAEI⁶⁰

The total emission of VOC from 'other transport' in 2003 was 43,951 tonnes, which includes shipping. This is only a small fraction of the total UK emission of 1.087 million tonnes.⁶¹

The total estimated emission of VOC from shipping in EU seas in 2000 was 134,000 tonnes. This is calculated to rise to 147,000 tonnes by 2010.⁶²

Directive 1994/63, on the control of volatile organic compound emissions, invites the European Commission to look at extending the directive's scope to address VOC emissions during the loading and unloading of ships.⁶³

6. Ozone depleting substances

The European Commission has identified halon as the principal ozone depleting substance emitted from shipping. Halon is 8 to 10 times more damaging to the ozone layer than chloro-fluorocarbons (CFCs), which were banned in all industrialized countries in 1995.⁶⁴ Damage to the ozone layer increases the amount of harmful radiation reaching the earth with consequent damage to human and environmental health. The "removal and destruction of halon from ships would avoid significant future ozone layer depletion

⁶⁰ <http://www.naei.org.uk>

⁶¹ Department for the Environment, Food and Rural Affairs, *Table 17: Estimated emissions of volatile organic compounds (VOCs) by species and by source*, e-Digest Statistics, 2003
<http://www.defra.gov.uk/environment/statistics/airqual/aqvoc.htm>

⁶² Communication from the Commission to the European Parliament and the Council, *A European Union Strategy to reduce atmospheric emissions from seagoing ships*, Volume I, 20 November 2005, p10

⁶³ *ibid*, p3

⁶⁴ *ibid*, p4

and enhance the prospects for early recovery of the ozone layer".⁶⁵ Halon also has a very high global warming potential.

The United Nations Environment Programme described the use of the gas:

Halons are halogenated hydrocarbons, first introduced into commercial use during the 1960s, which exhibit exceptional effectiveness in fire extinguishing and explosive prevention and suppression. They are clean, electrically non-conductive, and leave no residue. Halon 1301 has proven safe for human exposure as concentrations sufficient for fire extinguishing. This unrivalled combination of desirable properties led to the selection of these agents for many fire protection applications.⁶⁶

The quantity of halon installed in ship systems worldwide is thought to be significant:

It is estimated to represent 26,000 tonnes of ozone depleting potential, which exceeds the European fire industry estimate for the amount of halon installed in mainland Europe.⁶⁷

EU Regulation 2037/00 on "Substances that Deplete the Ozone Layer":

[...] bans the marketing and use of ozone depleting substances in the EU [and therefore the UK], including their use as fire protection systems on board ships [such as halon]. However, Annex VII of that Regulation offers a limited number of exemptions for "critical uses" of halon where technically and economically feasible alternatives are not yet available. This includes an exemption to allow the continued use of halon on existing cargo ships. Since all ships constructed since 1 July 1994 must not have halon on board, in practice it is only vessels older than this date that have halon fire protection systems. The Commission is required to review the critical uses listed in Annex VII each year in the light of alternatives available and, when necessary, adopt modifications to EC2037/00 following Management Committee procedures operating under Article 18.⁶⁸

B. MARPOL: *Merchant Shipping (Pollution) Bill* [HL] clause 2

1. History of MARPOL

The Torrey Canyon accident in 1967 raised questions about the measures that were then in place in order to deal with pollution from shipping. In response to an enquiry about the incident, the IMO convened an international conference in 1973, during which the *International Convention for the Prevention of Pollution from Ships* (MARPOL) was created.

⁶⁵ *ibid*, p8

⁶⁶ United Nations Environment Programme, *1998 Assessment Report of the Halons Technical Options Committee*, March 1999

⁶⁷ Communication from the Commission to the European Parliament and the Council, *A European Union Strategy to reduce atmospheric emissions from seagoing ships*, Volume I, 20 November 2005, p8

⁶⁸ *ibid*, p13

MARPOL incorporated much of the pre-existing *International Convention for the Prevention of Pollution of the Sea by Oil* (OILPOL). However, the convention also sought to address other forms of pollution through annexes to the convention, such as that caused by sewerage, chemicals, harmful substances and rubbish. The convention stated that only Annex I (oil) and Annex II (chemicals) had to be ratified for a country to become party to the convention.

Under MARPOL rules, the convention required ratification by at least 15 countries with a combined merchant fleet of no less than 50% of world shipping by gross tonnage to enter into force. However, only three small countries ratified the convention as some governments felt it would be too difficult to implement Annex II (chemicals).⁶⁹

Following a spate of tanker accidents between 1976 and 1977, the IMO held another conference in 1978 on Tanker Safety and Pollution Prevention. During this event, the conference adopted a range of measures including an updated MARPOL Protocol. This protocol allowed states to become party to the convention by implementing only Annex I (oil). The second Annex would only be ratified three years after the protocol entered into force, giving states time to make the necessary changes required to implement it. In the end, the MARPOL Convention finally came into force in 1983 for Annexes I and II. Additional voluntary annexes covering other forms of pollution came into force between 1988 and 2003.

2. MARPOL Annex VI

Clause 2 of the *Merchant Shipping (Pollution) Bill 2005* would enable the UK to give effect to Annex VI of the MARPOL Convention to control emissions to the atmosphere from ships and offshore installations. Secondary legislation will be required to give effect to the Annex in the UK.

Annex VI of MARPOL was adopted in London in September 1997. It aims to place international controls on emissions of air pollutants from shipping. The Annex came into force on 19 May 2005 but it is yet to be implemented by the UK. The Annex exists against a background of other international agreements to deal with the issue of international air pollution including the *Convention on Long-range Transboundary Air Pollution* and the *Montreal Protocol on Substances that Deplete the Ozone Layer*.

Annex VI consists of three Chapters and a number of Appendices. A copy of the Annex is held by the House of Commons Library.

Chapter I provides general regulations including definitions and general exceptions. Exceptions include emissions necessary for the purpose of securing the safety of a ship or the saving of life at sea (regulation 3).

⁶⁹ http://www.imo.org/Conventions/contents.asp?doc_id=678&topic_id=258#2

3. Annex VI: Chapter II

Chapter II provides for the survey and inspection of ships in relation to the Annex; the Annex itself provides full details.

Every ship above 400 gross tonnes and every fixed and floating drilling rig and other platforms will be subject to survey for Annex compliance before they are put in service or before a compliance certificate is issued for existing ships or installations. The survey is repeated periodically every five years or less, and an intermediate survey during the period of the compliance certificate's validity will also be required. Ships under 400 gross tonnes may be subject to measures to ensure compliance as decided by the flag state.

Engines and equipment will be surveyed for NO_x compliance according to the NO_x Technical Code (see next section).

If equipment is found not to comply with the certificate, corrective action must be taken. If it is not, then the certificate must be withdrawn. Enforcement procedures for MARPOL are summarised by the International Maritime Organization (IMO):

Any violation of the MARPOL 73/78 Convention within the jurisdiction of any Party to the Convention is punishable either under the law of that Party or under the law of the flag State. In this respect, the term "jurisdiction" in the Convention should be construed in the light of international law in force at the time the Convention is applied or interpreted.

With the exception of very small vessels, ships engaged on international voyages must carry on board valid international certificates which may be accepted at foreign ports as prima facie evidence that the ship complies with the requirements of the Convention.

If, however, there are clear grounds for believing that the condition of the ship or its equipment does not correspond substantially with the particulars of the certificate, or if the ship does not carry a valid certificate, the authority carrying out the inspection may detain the ship until it is satisfied that the ship can proceed to sea without presenting unreasonable threat of harm to the marine environment. Under Article 17, the Parties to the Convention accept the obligation to promote, in consultation with other international bodies and with the assistance of UNEP, support for those Parties which request technical assistance for various purposes, such as training, the supply of equipment, research, and combating pollution.⁷⁰

C. Annex VI Chapter III: the control of certain emissions

Chapter III (regulations 12-19) details the requirements for the control of a number of emissions and related matters. The regulations apply to ships and off-shore rigs and

⁷⁰ International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto MARPOL 73/79, *International Maritime Organisation*, viewed on 12 January 2005, <http://www.imo.org/Conventions/12>

platforms with certain exemptions. These are introduced in brief here; the original document provides full information.

1. Regulation 12: Ozone-depleting substances

This provides that any deliberate emissions of ozone-depleting substances are prohibited. This would include emissions that are a result of disposing of systems or equipment, but not minimal releases associated with the recapture or recycling of these substances.

Regulation 12 (2) of the Annex prohibits the installation of new systems that use ozone-depleting substances on ships, except those that use hydrochlorofluorocarbons (HCFCs) which are permitted to be installed until 1 January 2020. The regulation also provides that such substances must be disposed of at “appropriate reception facilities when removed from ships”.

Regulation 2 of the Annex defines ozone-depleting substances for the purposes of the annex as controlled substances as defined in paragraph 4 of article 1 of the *Montreal Protocol on Substances that Deplete the Ozone Layer 1987*. Substances falling under this definition include:

- Halon 1211 Bromochlorodifluoromethane
- Halon 1301 Bromotrifluoromethane
- Halon 2402 1,2-Dibromo-1,1,2,2-tetrafluoroethane (also known as Halon 114B2)
- CFC-11 Trichlorofluoromethane
- CFC-12 Dichlorodifluoromethane
- CFC-113 1,1,2-Trichloro-1,2,2-trifluoroethane
- CFC-114 1,2-Dichloro-1,1,2,2-tetrafluoroethane
- CFC-115 Chloropentafluoroethane⁷¹

2. Regulation 13: Nitrous oxides (NOx)

The regulation applies to diesel engines with a power output of 130kW or more installed on ships constructed on or after 1 January 2000. It also applies to engines of this size when they undergo a “major conversion”. It does not apply to emergency engines or lifeboats. The Administration may allow the exclusion of engines from this regulation if they were constructed or converted before the date of entry into force and are only used within the waters of the State to which the ship is registered.

A major conversion in relation to this regulation means a modification of the engine where:

- the engine is replaced by a new engine built on or after 1 January 2000
- any substantial modification as defined in the NOx Technical Code is made to the engine

⁷¹ Annex VI of MARPOL 73/78, Regulation 2 (6)

- the maximum continuous rating of the engine is increased by 10%.⁷²

Subsection 3 of the regulation provides limits to the maximum amount of NO_x permitted to be emitted by an engine, calculated as the total weighted emission of NO₂. More polluting engines may be used where an exhaust gas cleaning system is used to bring the emissions down to within the accepted limit.

When an engine is fuelled by blends of hydrocarbons from petrol refining, rather than diesel, the NO_x Technical Code details the procedures to be used to assess compliance.

The NO_x Technical Code, or the *Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines*, specifies the requirements for the testing, survey and certification of marine diesel engines to ensure they comply with the maximum limits specified in the annex. The requirements are fairly extensive. They include the specification that engines are submitted to a pre-certification survey to ensure compliance, and periodical and intermediate surveys to be conducted as part of surveys required by regulation 5 of the Annex. Full details can be found in Resolution 2: NO_x Technical Code of the 1997 MARPOL Conference.

Resolution 3 of the 1997 MARPOL Conference recognises the concerns of a number of delegations that the emission limits may not be stringent enough to “achieve the desired reduction in nitrogen oxide emissions”. These parties supported a review of the emission limits, with the aim of prescribing more stringent levels taking into account environmental impacts and technological advances. The Marine Environment Protection Committee was therefore invited to review the maximum limits at a minimum of five-year intervals after entry into force, and to table amendments as appropriate. The EU is pressing for stricter NO_x limits.⁷³

3. Regulation 14: Sulphur oxides (SO_x)

The regulation makes a general requirement that any fuel oil used on board a ship must not exceed a sulphur content of 4.5% m/m⁷⁴ and that oil supplied for use on board ships shall be monitored. This is to reduce the level of sulphur oxides (SO_x) emitted in exhaust fumes. The Marine Environment Protection Committee found from monitoring worldwide sulphur content in fuel oils, between 2002-2004, that the average was 2.67% m/m.⁷⁵

The regulation also provides stricter limits in certain designated areas called ‘SO_x emission control areas’ (SECA). The objective of the designation is to prevent, reduce and control SO_x pollution and their impacts. In such areas one of the following conditions must be met by ships:

1. the sulphur content of fuel oil must not exceed 1.5% m/m or;

⁷² *ibid*, Regulation 13 (2)

⁷³ <http://europa.eu.int/comm/environment/air/transport.htm#3>

⁷⁴ concentration by mass of sulphur as a percentage of the total mass of the oil

⁷⁵ http://www.imo.org/Environment/mainframe.asp?topic_id=233

2. an exhaust gas cleaning system brings emissions of SO_x to below 6.0g SO_x/kWh or;
3. any other technological method is used to reduce emissions of SO_x below 6.0g SO_x/kWh.

The original Annex specified the Baltic Sea as a SECA. A subsequent amendment also made the North Sea a SECA.⁷⁶

Appendix III of the Annex gives the criteria and procedures for designating a SECA. In assessing a proposal for the introduction of a SECA, the IMO will take into account a number of criteria including the economic impact on shipping.

The Swedish NGO Secretariat on Acid Rain dismissed the worldwide sulphur limit as “so weak as to be hardly likely to have any appreciable effect”.⁷⁷ However, they did concede that pollution should be reduced in the two SECAs.

4. Regulation 15: volatile organic compounds (VOC)

Regulation 15 allows parties to the Protocol to regulate volatile organic compounds (VOC) from tankers in certain designated ports or terminals. This is not a mandatory requirement. The Government has decided that controls will not be put in place until the requirement is made mandatory⁷⁸

Should a party decide to introduce controls on VOC under the Annex, regulation 15 has to be adhered to. This includes the notification of the flag state of ports to which the regulation will apply, the assurance that VOC control systems will be in place in ports and operated in such a way as to be safe and prevent undue delay to the ship.

5. Regulation 16: Shipboard incineration

Regulation 16 provides that incinerators installed on ships must be approved and meet certain standards as specified by the IMO. Ships which have had an incinerator installed prior to the entry into force of the Annex can be excluded from the regulations provided they remain in the national waters of the country whose flag they fly. The regulation does not require the installation of incinerators on those ships without one.

The regulation also prohibits the incineration of certain substances including:

- Annex I, II and III cargo residues (such as oil and certain harmful chemicals) and related contaminated packing materials
- PCBs
- Garbage, as defined in the convention, containing more than traces of heavy metals

⁷⁶ NSCA, *Pollution Handbook 2005*, 1 February 2005

⁷⁷ http://www.acidrain.org/pages/policy/sub6_4.asp

⁷⁸ The Merchant Shipping (Prevention of Air Pollution from Ships) Regulations 2005, Partial Regulatory Impact Assessment, 2004; and personal communication, Bill Team, Shipping Policy, *Department for Transport*, 23 January 2006

It also places restrictions on the incineration of other substances including sewerage sludge and PVCs.

Appendix IV of the Annex provides type approval and operating limits for shipboard incinerators.

6. Regulation 17: Reception facilities

Regulation 17 requires the Government of each party to ensure there is adequate provision of facilities to meet the needs of ships in relation to the reception of ozone-depleting substances and exhaust gas cleaning residues.

7. Regulation 18: Fuel oil quality

The regulation places further conditions on fuel oil to be used on board ships including that:

- the fuel oil must be free from inorganic acid
- the fuel oil must not contain any added substance or chemical waste which contributes overall to additional air pollution
- a bunker delivery note and a fuel sample is retained by ships in order to record the delivery of fuel oil

It also requires that parties to the protocol have to ensure that a register of fuel oil suppliers is kept and to take action against those who supply fuel that does not comply with the Annex.

8. Regulation 19: Requirements for platforms and drilling rigs

This regulation simply provides that fixed and floating platforms and drilling rigs must comply with the Annex, except where emissions are as a direct result of exploration, exploitation and offshore processing of sea-bed mineral resources. It also provides that the requirements of regulation 18 (fuel oil quality) do not apply to the use of hydrocarbons which are produced and subsequently used on site as fuel, when approved by the Administration.

D. Review of Annex VI

In July 2005, the Marine Environment Protection Committee, the IMO's senior technical body on marine pollution related matters, agreed to undertake a review of Annex VI and the NOx Technical Code. This is with a view to revising the regulations to account for advances in technology and the need to further reduce emissions. This should be complete by 2007. Specific issues that will be considered include:

- examine available and developing techniques for the reduction of emissions of air pollutants; review the relevant technologies and the potential for a reduction of NOx emissions and recommend future limits for NOx emissions;
- review technology and the need for a reduction of SOx emissions and justify and recommend future limits for SOx emissions;

- consider the need, justification and possibility of controlling volatile organic compounds emissions from cargoes;
- with a view to controlling emissions of particulate matter (PM), study current emission levels of PM from marine engines, including their size distribution and quantity, and recommend actions to be taken for the reduction of PM from ships. Since reduction of NOx and SOx emission is expected to also reduce PM emission, estimate the level of PM emission reduction through this route;
- consider reducing NOx and PM emission limits for existing engines;
- consider whether Annex VI emission reductions or limitations should be extended to include diesel engines that use alternative fuels and engine systems/power plants other than diesel engines; and
- review the texts of Annex VI, NOx Technical Code and related guidelines and recommend necessary amendments.⁷⁹

E. Lords Debate

The *Merchant Shipping (Pollution) Bill 2005* received its second reading in the Lords on 14 June 2005. Lord Davis of Oldham introduced the provisions relating to MARPOL Annex VI:

The Bill [...] provides for a power to make secondary legislation regarding air pollution from ships. It does so by amending Section 128 of the Merchant Shipping Act 1995, so removing a doubt on the current scope of that section. The secondary legislation would implement Annex VI to the International Convention on the Prevention of Pollution from Ships, commonly known as the MARPOL Convention. Here again we are seeking to implement domestically what we have already negotiated internationally.

The secondary legislation would apply the series of internationally agreed technical standards which forms Annex VI to UK flagged vessels. The aim of these standards is to reduce air pollution from shipping through control of emissions of nitrogen oxides, sulphur oxides and ozone-depleting substances. These pollutants have been identified as causing environmental degradation and damage to human health.

Nitrogen oxides react with hydrocarbons at ground level to form ozone when exposed to sunlight; ground-level ozone exacerbates pre-existing lung complaints, including asthma, and has been demonstrated to increase rates of hospitalisation and use of medication. When released into the atmosphere, sulphur oxides and nitrogen oxides react to form acidic compounds. These can fall as acid rain or be deposited as dry particles causing localised acidic damage. Acid deposition in both forms can cause severe damage to forests and water bodies, and damage man-made structures.

It is important to tackle emissions from shipping through internationally applicable technical standards. By 2020, the total number of ships worldwide is expected to be double what it was in 2000. This growth in the number of ships will be reflected in an increasing amount of traffic calling at UK ports and transiting UK

⁷⁹ http://www.imo.org/Environment/mainframe.asp?topic_id=233#amends

waters. Generally, shipping is a friend to the environment, as I remarked at the outset of this debate, but there is considerable room for improvement in the atmospheric pollutant emissions from ships. Implementation of this annex would be a positive step towards greener shipping—and shipping, along with other forms of transportation, must play its part in improving the environment.

Applying domestic legislation which implements MARPOL Annex VI would ensure that all relevant ships were certified, maintained and operated in accordance with the internationally agreed technical standards. I am pleased to say that the proposal to implement this annex of MARPOL has been welcomed by the UK shipping industry and marine engine manufacturers in their response to consultation.

It is important for the UK economy that the UK introduce legislation implementing MARPOL Annex VI as soon as possible. If we do not do so, UK flagged ships will be at risk of detention or delay in ports of states which have implemented it. Needless to say, that could have a severe impact on the UK merchant fleet. Above all, it is important for the environment, of both the UK and the wider world where UK ships ply their trade, that the UK implement the provisions of the annex.

The Bill will enable the Government to implement this by secondary legislation. Draft secondary legislation contains the detail of the regulations contained in Annex VI and will be made available by the department by the time the Bill reaches Committee.⁸⁰

Lord Greenway highlighted the action that had already been taken by some companies to reduce emissions from shipping:

I know that the whole business of moving the maritime world forward, with regard to these conventions, is a worry to many people—including Friends of the Earth. But I fear that we must move slowly, and I deprecate the unilateral action that some states sometimes take to move things forward faster. We must all try to move at the same pace.

I mentioned the shipping companies, which have been looking at the situation for some time. In fact, only last year, P&O fitted a device to one of their ferries running across the English Channel between Dover and Calais—something called an eco-silencer, which is designed to cut sulphur emissions by 95 per cent and nitrogen oxides by 80 per cent. BP is also looking at something similar, and other shipping companies are looking at other measures. There is also the question of reduced sulphur content in fuel. I know that the shipping community is not necessarily agreed on that yet, but there are several different ways in which to approach the problem. The maritime community is not unaware of its responsibilities.⁸¹

⁸⁰ HL Deb 14 June 2005 c1131

⁸¹ HL Deb 14 June 2005 c1138

F. Industry Comment

The Regulatory Impact Assessment of the Bill provides information on the views expressed by industry during the public consultation conducted in 2004:

Industry has been aware of the content of MARPOL Annex VI from the outset. The United Kingdom delegation to IMO played a full and active part in securing international agreement on these new measures and the subsequent addition to the MARPOL Convention. The UK Delegation was made up of representatives from the regulatory bodies and all sections of the shipping industry. Responses to the recent consultation show broad support for the United Kingdom's proposed implementation.⁸²

DNV Petroleum Services provided a report regarding Annex VI, soon after its entry into force in 2005:

TWO months into the implementation of Marpol Annex VI, ships plying international routes are steadily incorporating regulations 14 and 18 on fuel sulphur limits, sampling procedures and bunkering documentation into shipboard practice.

These vessels invariably have to overcome teething problems expected with the introduction of any new requirements. On the other hand, there are a number of major issues which can threaten the success of Marpol Annex VI if they remain unresolved.

At the time of writing, several countries with substantial bunker supply volumes have not yet ratified Marpol Annex VI. These include the Netherlands, Belgium, France, Italy, Australia, Brazil, Venezuela, Canada, US, Egypt, Iran, Iraq, South Africa, the Philippines, South Korea, the United Arab Emirates and China. Among them are some of the world's top crude and fuel exporters.

Since Marpol Annex VI became effective on May 19, vessels have been confronted with complications resulting from taking bunkers in non-signatory countries before sailing to a destination where the regulations are in force. In particular, if the ship is entering or flying the flag of a signatory state, it must show evidence of using bunkers not exceeding 4.5% (m/m) in sulphur content. The attendant sampling and documentary requirements are not always met with ready co-operation from the supplying party.

[...]

[A] study reveals that over the past two years, approximately 0.2% of global marine fuel deliveries contained more than 4.5% sulphur. This figure implies that the actual number of high sulphur deliveries on a global scale is relatively insignificant and, as such, a worldwide 4.5% sulphur cap alone would not do much to reduce overall sulphur emissions.

⁸²http://www.dft.gov.uk/stellent/groups/dft_control/documents/contentservertemplate/dft_index.hcst?n=9746&l=1

On the other hand, DNVPS statistics do suggest that bunker deliveries with sulphur content above 4.0% have risen over the same period.

[...]

During the six weeks after Marpol Annex VI came into force, some suppliers appeared not to have managed to remove their >4.5% sulphur fuel cargoes from the market yet.

As reported in a recent DNVPS bunker bulletin, several deliveries in Singapore last month marginally exceeded the Marpol Annex VI 4.5% sulphur limit. Deliveries containing up to 4.8% sulphur was also detected in a few Italian ports. Not surprisingly, the suppliers involved disputed these findings.

[...]

Accurate reporting of fuel quality is clearly important as it can influence operational decisions. In this regard, high sulphur fuels are known to contribute to low temperature corrosion of engine parts and this in turn affects crew and cargo safety. Ship operators should also note that fuels from some areas may generally contain higher levels of sulphur, and that this element has a negative impact on fuel energy content.

Whether the 4.5% global sulphur cap and the 1.5% limit in the forthcoming Sulphur Oxide Emission Control Areas can effectively lower SOx emissions remains to be seen. For now, DNVPS fuel quality statistics suggest that even as most deliveries are within the 4.5% sulphur limit, fuel sulphur content in certain areas and involving specific suppliers are apparently on the rise. It would be interesting to observe if the supply of high sulphur fuels in some areas will be balanced by lower sulphur levels in other regions, or whether the introduction of the Secas will lead to the trading of higher sulphur fuels in other parts of the world. We can however predict with much greater confidence that if worldwide sulphur levels in marine fuels do go up, the International Maritime Organization and the European Union will press for a further reduction to the sulphur cap.

Rather than adopting a protectionist approach towards their respective bunker industries, ports states can play an important part in lowering SOx emissions by ensuring that the requirements spelled out in Marpol Annex VI are adhered to and that fuels from their suppliers stay well within the stipulated sulphur limits.⁸³

⁸³ http://www.dnv.com/maritime/news/marpol_progress.asp

III Appendix 1: Convention Membership⁸⁴

A. States Parties to both the 1992 Civil Liability Convention and the 1992 Protocol Fund Convention.

As at 3 January 2006

1992 Fund Member States	• 92 States
Joining by 21/11/06	• +6 States
TOTAL	• 98 States

Albania (enters into force 30/06/06)	Luxembourg (enters into force 21/11/06)
Algeria	Madagascar
Angola	Malaysia
Antigua and Barbuda	Maldives (enters into force 20/05/06)
Argentina	Malta
Australia	Marshall Islands
Bahamas	Mauritius
Bahrain	Mexico
Barbados	Monaco
Belgium	Morocco
Belize	Mozambique
Brunei Darussalam	Namibia
Bulgaria (enters into force 18/11/06)	Netherlands
Cambodia	New Zealand
Cameroon	Nigeria
Canada	Norway
Cape Verde	Oman
China (Hong Kong Special Administrative Region)	Panama
Colombia	Papua New Guinea
Comoros	Philippines

⁸⁴ <http://www.iopcfund.org/92members.htm>

Congo	Poland
Croatia	Portugal
Cyprus	Qatar
Denmark	Republic of Korea
Djibouti	Russian Federation
Dominica	Saint Kitts and Nevis (enters into force 02/03/06)
Dominican Republic	Saint Lucia
Estonia	Saint Vincent and the Grenadines
Fiji	Samoa
Finland	Seychelles
France	Sierra Leone
Gabon	Singapore
Georgia	Slovenia
Germany	South Africa
Ghana	Spain
Greece	Sri Lanka
Grenada	Sweden
Guinea	Switzerland (enters into force 10/10/06)
Iceland	Tonga
India	Trinidad and Tobago
Ireland	Tunisia
Israel	Turkey
Italy	Tuvalu
Jamaica	United Arab Emirates
Japan	United Kingdom
Kenya	United Republic of Tanzania
Latvia	Uruguay
Liberia	Vanuatu
Lithuania	Venezuela

B. 1992 Fund Member States which are Party to the Supplementary Fund Protocol

As at 3 January 2006

Supplementary Fund Member States	11 States
Joining by 06/03/06	+4 States
TOTAL	• 15 States

Barbados (enters into force 06/03/06)	Japan
Belgium (enters into force 04/02/06)	Lithuania (enters into force 22/02/06)
Denmark	Netherlands
Finland	Norway
France	Portugal
Germany	Spain
Ireland	Sweden
Italy (enters into force 20/01/06)	

C. States Parties to the 1992 Civil Liability Convention but not the 1992 Fund Convention

As at 3 January 2006

States Parties	• 10 States
Joining by 11/10/06	• +6 States
TOTAL	• 16 States
Azerbaijan	Pakistan (enters into force 02/03/06)
Chile	Peru (enters into force 01/09/06)
China	Republic of Moldova (enters into force 11/10/06)
Egypt	Romania
El Salvador	Saudi Arabia (enters into force 23/05/06)
Indonesia	Solomon Islands
Kuwait	Syrian Arab Republic (enters into force 22/02/06)
Lebanon (enters into force 30/03/06)	Viet Nam