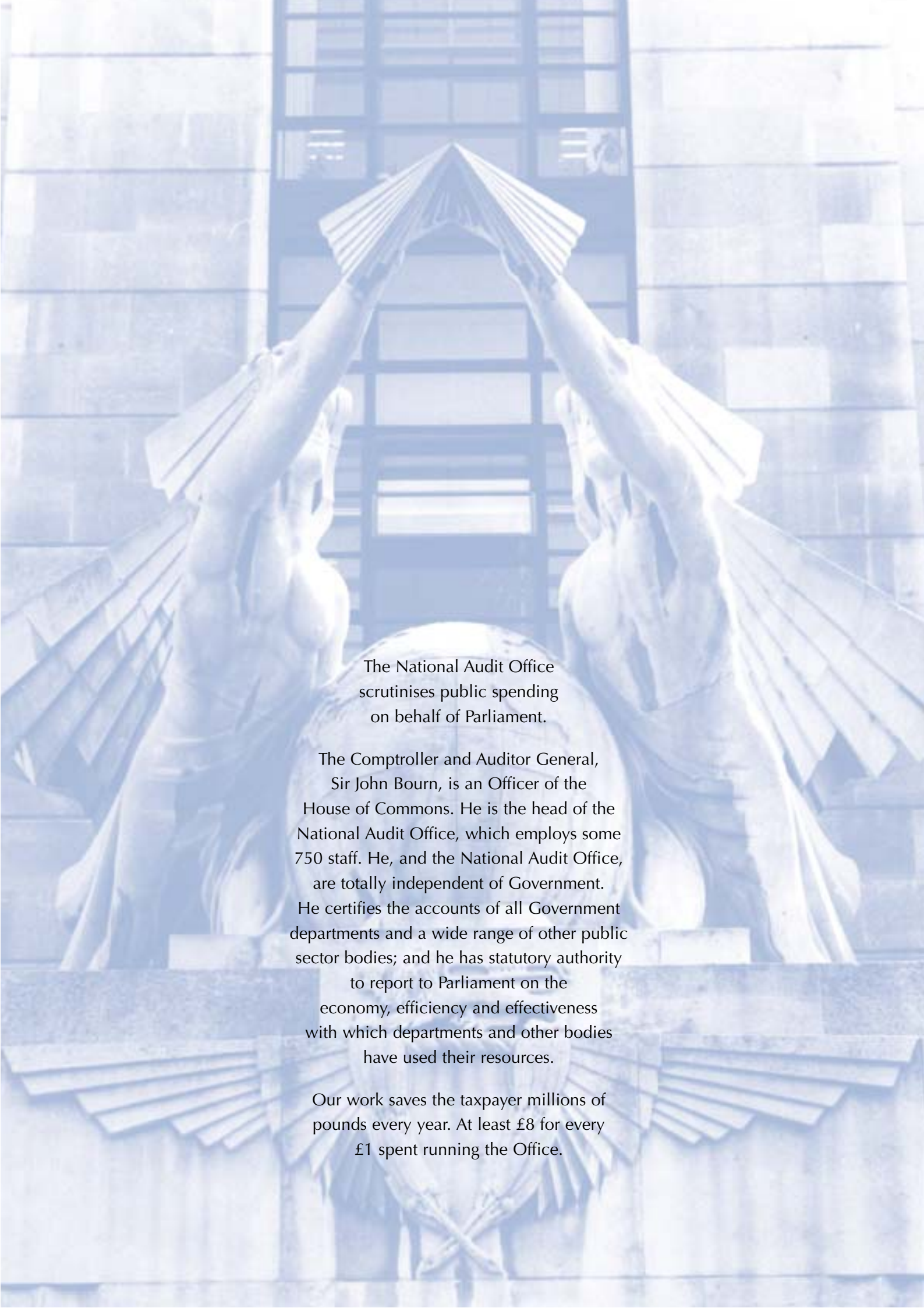
NATIONAL AUDIT OFFICE

Dealing with pollution from ships

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL
HC 879 Session 2001-2002: 12 June 2002



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John Bourn
Comptroller and Auditor General

National Audit Office
31 May 2002

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Summary

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1 This report focuses on the pollution contingency planning and response activities of the Maritime and Coastguard Agency (the Agency), an executive agency of the Department for Transport, Local Government and the Regions (the Department). One of the Agency's responsibilities is to minimise the risk of pollution of the marine environment from ships and, where pollution occurs, minimise its impact on UK waters, coastlines and economic interests. The Agency works closely with the Department of Trade and Industry (DTI), which is responsible for regulating and licensing offshore installations, including minimising the risk of pollution.

2 The UK's 10,000-mile coastline is one of the largest in Europe, and the UK economy relies on shipping for 95 per cent of its visible trade. The UK is therefore at particular risk from marine pollution, and has suffered 3 of the world's 20 largest recorded oil spills, the most recent of which was the *Sea Empress* incident at Milford Haven in 1996 when 72,000 tonnes of oil were spilt. These incidents have serious consequences for people, property and the environment. Oil is a major source of environmental damage from ships. However, vessels transporting hazardous materials also present a risk. Waste produced in the day-to-day operation of ships can also be a pollutant if it is discharged into the sea rather than being properly disposed of in waste reception facilities in port.

3 The UK also has obligations under two key international conventions concerned with protecting the marine environment from pollution. The 1973 International Convention for the Prevention of Pollution from Ships (adopted by the International Conference on Marine Pollution, hence known as the "MARPOL Convention") aims to control pollution of the sea by oil, chemical and other harmful substances that might be discharged during the course of a ship's operations or when a ship is damaged. Signatories to the Convention are required to inspect ships in port and at sea, trace and prosecute polluting ships and ensure there are adequate port facilities for receiving waste from ships.

4 The 1990 International Convention on Oil Pollution Preparedness, Response and Co-operation (the "OPRC Convention") requires signatories to inspect ships, maintain a national contingency plan for responding to oil pollution incidents and provide technical assistance to other signatories in the event of such incidents. Ports and harbours, ships and offshore installations are required to have their own approved oil pollution contingency plans and to report pollution incidents when they occur. They, and signatory governments, must

put in place equipment for combating incidents, hold training exercises and have communication facilities to allow them to respond without delay to pollution incidents. These conventions are reflected in UK merchant shipping legislation (Appendix 1).

Main findings

5 The UK's marine pollution record has improved considerably over recent years, with no major chemical or oil spills occurring in UK waters since 1996. The Agency also has a good record in dealing with pollution incidents, recovering its costs and prosecuting offenders. The Agency has put in place a new National Contingency Plan for dealing with pollution incidents, in consultation with the relevant departments and other stakeholders. This sets out a framework for dealing with major oil or chemical pollution incidents that threaten UK interests, and the roles and responsibilities of a wide range of national and local bodies in responding to an incident, reflecting their varied interests and priorities. The Agency has also taken steps to enhance its capacity for dealing with pollution incidents and to ensure that ports and harbours are properly prepared, and that they and the Agency comply with relevant international conventions. Our key findings are as follows:

The Agency needs to do more to ensure that port, harbour and local authorities are ready to deal with pollution incidents

i At the outset of our examination, the Agency could not demonstrate that all ports and harbours covered by the OPRC Convention were meeting fully the Convention's requirements. Through our survey of ports and harbours and subsequent follow-up, we obtained evidence that, by May 2002, all ports and harbours subject to the OPRC regulations had contracts in place for dealing with a medium sized spill. All but one port had a harbourmaster who had been trained to the appropriate level; the remaining port had arranged for its harbourmaster to attend the specified training in June 2002.

ii Although local authorities have a general duty to act in response to emergencies or disasters, they are not under any statutory obligation, nor do they receive any specific funding, to prepare and maintain a contingency plan for oil or chemical pollution affecting their shorelines. Nor does the Agency have any powers to enforce oil spill contingency planning on local authorities, or a statutory responsibility for ensuring that local authorities' oil spill contingency plans are of an appropriate quality. The Agency helps local authorities put appropriate plans in place, in recognition of the

responsibility accepted by the Government that it should help authorities prepare for pollution incidents. The contingency plans for 53 coastal local authorities are between 5 and 11 years old and hence are unlikely to be consistent with the current National Contingency Plan for dealing with pollution incidents. All but one of these authorities were writing new plans. A further six coastal local authorities either did not have a plan or had not provided the Agency with information on the status of their contingency planning. The absence of complete, up to date plans might hinder effective response should an incident occur. Local authority attendance on the Agency's training courses concerning oil spill contingency planning has also been limited to around 40 per cent of the 170 coastal local authorities around the country.

iii Although the National Contingency Plan covers oil and chemical pollution, ports' and harbours' contingency plans need only cover oil pollution. This gap is expected to be addressed by a protocol on hazardous and noxious substances (the HNS Protocol). The Protocol, however, might not be enforced internationally until 2005 although it might be possible to bring the requirements of the Protocol into UK law by the end of 2004. The Agency would then need to ensure that all major ports and harbours put measures in place to deal with incidents involving hazardous and noxious substances.

There is scope for the Agency to adopt a more strategic approach to its counter-pollution activities

iv The Agency has in place a number of contracts to help it deal with pollution incidents, covering, for example, surveillance and dispersant spraying aircraft, emergency towing vessels, counter pollution equipment and stocks of dispersants. The Agency achieved savings of £1.7 million by renegotiating its aerial surveillance and dispersant spraying contract with a commercial firm. There may, however, be scope to achieve further efficiencies in counter pollution activities. For example, although surveillance aircraft are shared with the Department of Trade and Industry (which regulates offshore installations), the Department for Environment, Food and Rural Affairs (DEFRA) also uses surveillance aircraft to police fishing quotas, as do their Scottish counterparts. The Agency has suggested that their respective requirements are too different but we noted that two of the Agency's successful prosecutions between 1999 and 2001 were incidents initially identified by surveillance aircraft operated by DEFRA and the Scottish Fisheries Protection Agency. There might also be scope for savings by sharing counter pollution equipment with, or contracting out the provision of equipment to, commercial companies such as those that supply ports and harbours in responding to a medium sized oil spill in their waters.

v The Agency believes that it has put in place enough resources to be able to deal with more than one major pollution incident at the same time, whilst also being able to deal with minor incidents. However, no recent incident has involved significant oil or chemical pollution. It is six years since the UK experienced a pollution incident on a large scale, with the grounding of the *Sea Empress* and the loss of 72,000 tonnes of crude oil in 1996. The Agency has strengthened the resources at its disposal since that incident. However, it has not quantified how big an incident it would be able to handle with its own resources, before needing to call on commercial companies and neighbouring maritime authorities for assistance, or how much more capacity such assistance would bring. There is therefore scope for a more strategic review of the resources at the Agency's disposal, including an assessment of the number and size of incidents it would be able to deal with at any one time. The Agency also needs to improve the means by which it measures its performance, particularly in regard to the amount of pollution it prevents when it responds to incidents.

The Agency and the Department need to tackle the factors that inhibit their ability to recover costs, so that the polluter pays, and to prosecute offenders

vi The Agency has a good record in making polluters pay compensation for the cost of responding to incidents, recovering some 90 per cent of its costs in the 23 claims that it has settled since 1998. The Agency has, however, taken too long to compile some of its claims. Recovery of costs is also made more difficult by limitations in international compensation arrangements which do not cover pollution by bunker oil carried by vessels for their own use, and by "pay to be paid" insurance policies and "one ship companies". In the case of "pay to be paid" insurance policies, the insurers are only liable for a claim once it has been paid by the owners of the vessel. The Agency therefore has to seek recovery from vessel owners and may be unsuccessful if the owners dispute liability and refuse to pay the Agency's claim. This may require the Agency to go to court to recover its costs. In the case of "one ship companies", if the vessel has been scrapped there are potentially no further assets that can be used or arrested to pay the Agency's claims. There are also major areas around the UK coast that are not covered by oil pollution regulations, preventing the Agency from prosecuting pollution offences that occur landward of the baseline designating the start of the UK's 12-mile territorial waters. These factors therefore hinder the Agency's ability to recover costs from, and prosecute, offenders.

Principal recommendations

6 On the basis of our report, we make the following principal recommendations. The Agency should:

i Be able to demonstrate that the UK is meeting its commitments under international counter-pollution conventions by ensuring that all ports and harbours have appropriate contingency plans in place to deal with a medium sized oil spill and that they have trained staff to an appropriate degree of skill and regularly tested their plans.

ii Explore the scope for achieving efficiencies in counter-pollution activities, for example through sharing surveillance aircraft with other regulatory bodies, sharing counter-pollution equipment or contract for supply of such equipment from the commercial sector; and undertake a strategic review of the overall counter-pollution resources at its disposal, to assess in aggregate terms its ability to deal with large incidents and in particular with more than one major incident at a time.

iii As part of its post-incident evaluations, record as key performance measures the volume of pollution that the Agency has prevented or the effects of pollution that it has mitigated in responding to and dealing with pollution incidents.

iv Work closely with the Department to bring the requirements of the Protocol on hazardous and noxious substances into UK law, and to ensure that all major ports and harbours put measures in place to deal with the incidents involving hazardous and noxious substances, as soon as possible.

v Explore with the Department and other maritime authorities the scope for prohibiting "pay to be paid" insurance policies, and whether wider recovery powers could be granted in the case of "one ship companies" where there are sister companies.

vi Revise the Merchant Shipping legislation to ensure that pollution incidents may be prosecuted under the UK's oil pollution regulations, wherever incidents occur within the UK Pollution Control Zone.

7 The Department should consider the case for taking powers to require all coastal local authorities to have up to date oil spill contingency plans consistent with the National Contingency Plan, so that the UK as a whole is properly prepared to deal with marine pollution incidents in compliance with international conventions.

8 Our other recommendations are set out in Appendix 6.

Part 1 Introduction

Background

1.1 This report focuses on the counter-pollution activities of the Maritime and Coastguard Agency (the Agency), an executive agency of the Department for Transport, Local Government and the Regions (the Department). One of the Agency's responsibilities is to minimise the risk of pollution of the marine environment from ships and, where pollution occurs, to minimise its impact on UK waters, coastlines and economic interests. The Agency works closely with the Department of Trade and Industry (DTI), which is responsible for regulating and licensing offshore installations, including minimising the risk of pollution.

1.2 The UK is at particular risk from marine pollution from shipping. The UK's 10,000-mile coastline is one of the largest in Europe and the UK economy relies on shipping for 95 per cent of its visible trade. A large volume of shipping also passes through UK waters en route to or from major ports on the European mainland, such as Rotterdam, Antwerp and Hamburg. The UK has suffered three of the world's 20 largest recorded oil spills **(Figure 1)**.

1.3 Such incidents can have serious consequences for people, property and the environment. For example, the loss of 72,000 tonnes of crude oil and 360 tonnes of heavy fuel oil when the *Sea Empress*, a Liberian oil tanker, ran aground in Milford Haven harbour in February 1996 resulted in damage to the local economy, marine habitats and a long stretch of the shoreline that included environmentally sensitive sites **(Figure 2, overleaf)**. By March 2002, the International Oil Pollution Compensation (IOPC) Fund, which administers the international oil pollution compensation regime, had paid some £28 million to over 800 claimants including the Maritime and Coastguard Agency, local authorities and commercial companies and individuals, while the ship owner's insurers had paid £6.9 million. Of the sums paid, £23 million was for the cost of clean up and £11 million was compensation for economic loss incurred by the fishing and tourist industries.

1.4 Oil is a major source of marine pollution, whether from tankers carrying oil as cargo, vessels carrying fuel oil for their own use (known as bunkers) or from leaks from offshore installations. However, vessels transporting hazardous materials also present a risk: one recent example was the threat of pollution from hazardous chemicals carried by the *Ievoli Sun*, which got into difficulties in severe weather in the Western Approaches to the English Channel in October 2000 and sank off the Channel Islands. Finally, waste produced in the day-to-day operation of ships can also be a pollutant if it is discharged into the sea rather than disposed of in waste reception facilities in port. One of the Maritime and Coastguard Agency's key performance targets is to reduce the incidence and effect of oil pollution from shipping in the UK Pollution Control Zone. The Zone extends 200 nautical miles out from the UK coastline or to the nearest median line with neighbouring coastal states.

1.5 It is widely accepted that the vast majority of shipping accidents are attributable to human error. Adverse weather conditions are also associated with pollution incidents, although changing weather patterns bring bad weather throughout the year and maritime accidents occur almost as often in the summer as in the winter.

1 The three largest oil spills suffered by the UK

The UK has suffered three of the world's 20 largest oil spills.

Vessel	Year	Location	Oil spilt (tonnes)	World ranking
Torrey Canyon	1967	Isles of Scilly	119,000	7th
Braer	1993	Shetland Islands	85,000	12th
Sea Empress	1996	Milford Haven	72,000	15th

Source: Maritime and Coastguard Agency

2 The impact of the *Sea Empress* incident on people, property and the environment

The oil spilt after the grounding of the Sea Empress damaged the local economy, marine habitats and the shoreline of environmentally sensitive sites.

Impacts on the economy

- The local economy relies heavily on tourism and fishing
- 1 in 5 people who considered visiting the area in 1996 said the spill was a significant reason for not visiting
- Bathers, surfers and divers had to stay away for up to 6 months
- There was an estimated £2 million downturn in the Pembrokeshire economy in 1996
- There were important shellfish beds in the area and 1,000 jobs were supported by fishing
- It was not until 18 months after the incident that all restrictions on fishing were lifted
- The total cost of the clean-up was around £23 million

The area affected

- Much of the coastline lies within the Pembrokeshire Coast National Park
- The area includes 35 Sites of Special Scientific Interest
- And 2 National Nature Reserves

The impact on the shoreline

- Up to 5,000 tonnes of oil came ashore
- 200 km of shoreline were affected by oil
- Contamination persisted out of sight along the shoreline throughout 1996

Impacts on the marine environment

- The area under threat was 1 of 3 Marine Nature Reserves in the UK
- Over 6,000 birds are known to have died, although it is likely that many more died but were undiscovered at sea
- Limpet, mollusc and seaweed populations were severely affected and took several years to recover
- Contamination persisted in wildlife throughout 1996

Source: National Audit Office, based on the report prepared by the Sea Empress Environmental Evaluation Committee, an independent committee set up by the Government to review the impact of, and the response to, the incident.

The Agency's counter-pollution activities

1.6 The UK is a signatory to two key international conventions concerned with protecting the marine environment from pollution:

- the 1973 International Convention for the Prevention of Pollution from Ships, (adopted by the International Conference on Marine Pollution, hence known as the "MARPOL Convention") as modified by the Protocol of 1978. This Convention aims to control pollution of the sea by oil, chemical and other harmful substances that might be discharged during the course of a ship's operations or when a ship is damaged. It places limits on discharge levels and obliges its signatories to inspect ships in port and at sea, trace and prosecute polluting ships, and ensure that there are adequate port facilities for receiving waste from ships; and
- the 1990 International Convention on Oil Pollution Preparedness, Response and Co-operation (the "OPRC Convention"). The 63 signatories to the convention are obliged to inspect ships, maintain a national contingency plan for responding to oil pollution incidents and provide technical assistance to other signatories in the event of such incidents. Ports and harbours, ships and offshore installations are required to have their own approved oil pollution contingency plans and to report pollution incidents when they occur. They, and signatory governments, must put in place equipment for combating incidents, hold training exercises and have communication facilities to allow them to respond without delay to pollution incidents.

The UK government has translated these conventions into merchant shipping legislation. Appendix 1 provides a summary of the main provisions of the legislation considered in this report.

1.7 The owners and masters of ships and the operators of offshore installations bear the primary responsibility for ensuring that they do not pollute the sea. Port and harbour authorities are likewise responsible for ensuring that their ports operate in a manner that avoids marine pollution, and for responding to incidents within their waters. However, a number of the Agency's activities help to prevent or deal with pollution from ships **(Figure 3)**.

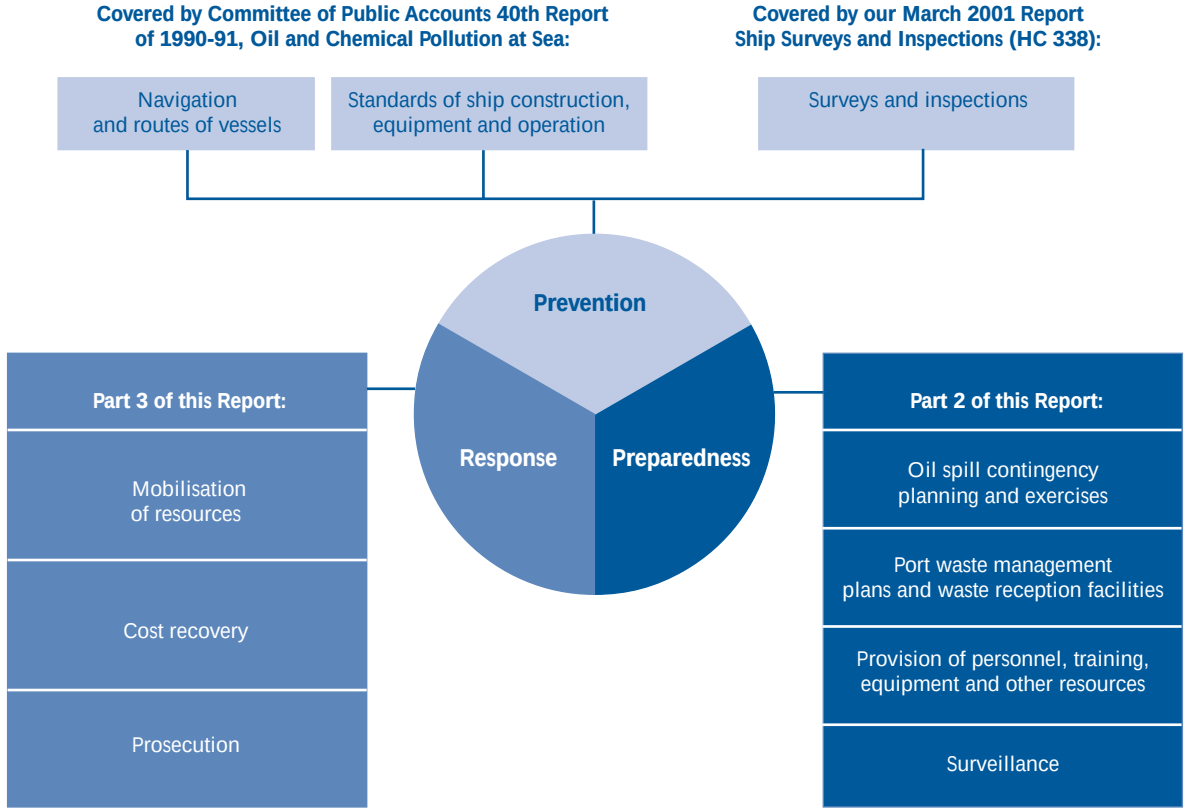
1.8 The Committee of Public Accounts last reported on oil and chemical pollution at sea in 1991. That report recommended improvements in preventative measures, concerning the routeing of vessels and the design of oil tankers. **Figure 4, overleaf** shows that progress has been made to address the Committee's concerns, with the establishment of Traffic Separation Schemes, Areas to be Avoided, and Deep Water Routes in UK waters and an international agreement to accelerate the phasing-out of single hull tankers.

1.9 In our March 2001 Report *Ship Surveys and Inspections* (HC 338), we examined the effectiveness of the Agency's ship survey and inspection regime. Some of this survey and inspection work concerns pollution prevention and is not repeated here. Instead, this report examines other key aspects of the Agency's counter-pollution work concerned with preparedness and response:

- **National contingency planning:** the Agency has lead responsibility for maintaining and implementing the UK's National Contingency Plan for Marine Pollution from Shipping and Offshore Installations. The Plan explains the circumstances in which the Agency would deploy national resources where port, harbour or local authorities or operators of offshore installations faced pollution incidents beyond their capabilities.
- **Port and harbour authorities' oil spill contingency (OPRC) plans:** ports and harbour authorities must have oil spill contingency plans that are compatible with the National Contingency Plan. The Agency is responsible for reviewing and approving these plans.
- **Offshore installations' oil spill contingency (OPRC) plans:** the Agency reviews, on behalf of the Department of Trade and Industry, the oil spill contingency plans prepared by the operators of

3 The Agency's counter-pollution activities

A number of the Agency's activities help to prevent or deal with pollution from ships.



Source: National Audit Office

4 **Prevention of oil and chemical pollution at sea through improved routeing of vessels and improved tanker design**

Progress has been made to address the Committee of Public Accounts' concerns about the routeing of vessels and tanker design.

PAC conclusion	Action taken
The routeing of vessels, particularly high risk vessels, away from the coastline and important fishing grounds is an important safeguard in minimising the serious effects of marine pollution. The Department should establish its exact legal position in relation to the routeing of vessels and, in the meantime, issue strong and clear guidance to tanker owners on recommended routes.	UK legislation allows the Agency to enforce on UK shipping the use of Traffic Separation Schemes agreed by the International Maritime Organisation (IMO), which are used where there is a significant risk of collision. At the time of the Committee's 1991 report, there was one Traffic Separation Scheme in UK waters, in the Dover Strait. Since then, six more have been added (west and south of the Isles of Scilly, off Land's End, off Smalls, off Skerries and in the Northern Channel). The IMO also endorses advisory measures, such as Areas to be Avoided and Deep Water Routes. At the time of the Committee's 1991 report, there were: ■ five Areas to be Avoided, all in the Dover Strait and English Channel. Since then, four more have been established, around the Orkneys, Shetlands and Fair Isle; and ■ two Deep Water Routes, in the strait of Dover and off Friesland. Since then, a third has been established west of the Hebrides for tankers to avoid the Minch. The Agency has issued guidance on the routeing of ships around the UK coast, covering Traffic Separation Schemes, Areas to be Avoided, and the Deep Water Routes.
The Department should press urgently for final international agreement on improved tanker design.	In 1992, the IMO agreed that new oil tankers over 5,000 tonnes built after July 1996 had to have double hulls. Single hull tankers built before 1996 could operate for 30 years from their date of construction if they carried water ballast in tanks at key locations on the vessel to segregate and protect oil cargoes and reduce the risk of pollution were the vessels to be damaged. If they did not have segregated ballast, they could operate for only 25 years. In March 2001, the IMO amended the agreement to accelerate the phasing-out of single hull tankers. Single hull tankers may not operate in European waters beyond 2015.

Source: National Audit Office

offshore installations, assessing whether they meet oil pollution standards and are compatible with the National Contingency Plan.

- **Port waste management plans:** ports and harbour authorities have a statutory duty to provide suitable waste reception facilities for ships that use their ports and harbours and to prepare port waste management plans on how they would deal with the waste. The Agency reviews and approves the plans and carries out inspections of ports to ensure that they are operating in accordance with the approved plans.
- **Local authorities' shoreline response and clean up**[1]**:** the Agency comments on contingency plans submitted to it by local authorities, provides authorities with guidance and free training courses, participates in local training exercises and maintains stockpiles of equipment that authorities may draw on, at cost.
- **Surveillance:** the Agency operates aerial surveillance aircraft to deter and detect pollution incidents in the UK Pollution Control Zone.
- **Mobilising its resources in response to pollution incidents:** the Agency deploys its own resources to help tackle incidents that are beyond ships', port and harbour authorities', offshore installations' or local authorities' capabilities.
- **Cost recovery and enforcement:** in line with the government's policy to ensure that "the polluter pays", the Agency seeks to recover from offenders the costs that it incurs in dealing with incidents. It also seeks to prosecute these offenders and others who cause marine pollution, wherever possible. Other victims of pollution incidents may pursue their own claims for compensation.

1.10 The Agency had operating costs of £96 million in 2001-02. The greater proportion of these costs, and of the Agency's staff of 1,142, was incurred on the Agency's coastguard service and its ship surveys and inspections. The Agency's counter-pollution work, dealing with national and local oil spill contingency planning and response and port waste management

1 *Under the Local Government Act 1972, local authorities in England and Wales have a general duty to act in response to emergencies or disasters; local authorities in Scotland have a similar duty under the Local Government (Scotland) Act 1973. In Northern Ireland, responsibility for monitoring water quality and taking action to combat or minimise the effects of pollution incidents rests with the Environment and Heritage Service.*

planning, cost some £9 million in 2001-02. **Figure 5** shows the Agency's structure, highlighting the parts of the organisation that we examined in this study.

National Audit Office scope and methodology

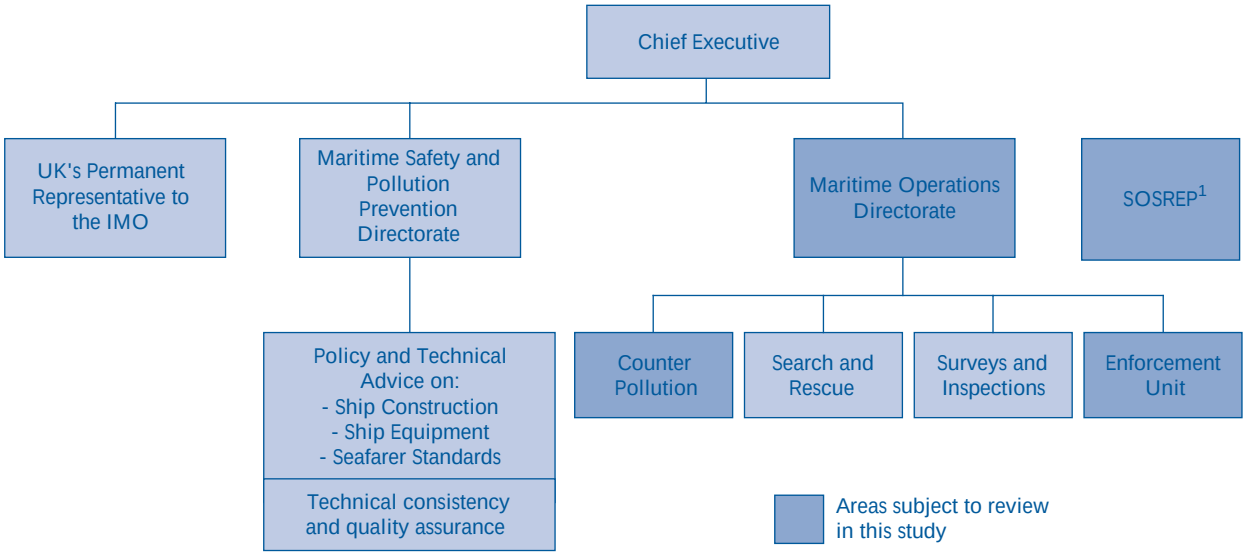
1.11 We focused our examination on the work of the Maritime and Coastguard Agency in preparing the UK for marine pollution incidents, and on the Agency's record in dealing with incidents when they occur. We examined whether the Agency:

- **ensures that the Agency and ports and harbours are well prepared to deal with pollution from ships (Part 2 of our report):** oil spill contingency plans need to be in place and be regularly tested, reviewed and updated; the Agency and port and harbour authorities need to have the right people with the right skills, equipment and facilities to deal with ship pollution; the Agency should also help local authorities prepare for pollution incidents affecting their shorelines; and
- **responds to pollution incidents successfully and ensures that the "polluter pays" (Part 3):** the Agency needs to prevent or minimise damage to the environment and learn from what works well and what does not for future incidents. It also needs to be able to trace offenders and prosecute them, recovering the costs of dealing with the pollution incidents and deterring others.

1.12 We used a variety of methods to obtain evidence for our report. Our methods are set out at Appendix 3. Our examination was part of a co-ordinated audit with the audit offices of the Netherlands, France, Turkey, Greece, Malta and Cyprus, examining the counter-pollution activities of our respective maritime authorities. These other audits are expected to be completed by early 2003.

5 Organisation of the Maritime and Coastguard Agency, 2001-02

The Agency's Maritime Operations Directorate is responsible for dealing with marine pollution incidents.



NOTE

1. The SOSREP is the Secretary of State's Representative, with statutory powers to take ultimate control, in the over-riding public interest, of any salvage operation in UK waters where there is a threat of significant pollution. Although he is based within the Agency, the SOSREP is independent of the Agency; he is appointed by, and accountable to, the Secretary of State.

Source: National Audit Office

Part 2 Preparedness

The extent and type of risk to the UK coastline

2.1 The Department and the Agency commissioned research to estimate the probability of different sizes of oil and chemical spills occurring around the UK coast **(Figure 6)**. The data suggest that:

- The biggest oil spills of 100,000 tonnes or more are probable once every 17 years. However, a significant spill of at least 4,000 tonnes is probable every other year.
- On average, there is a chemical tanker spill in UK waters every other year. However, the Agency's data suggest that the majority of chemical spills are small, as there are few large chemical tankers, and that the risk of a large chemical spill is therefore less likely than that of a large oil spill.

2.2 The Agency recognises that the UK coast continues to be exposed to the potential threat of oil pollution from shipping. Vessels are getting bigger and are carrying more fuel oil for their own use and the number of large oil tankers and large cruise vessels visiting UK ports or sailing through UK waters is increasing. The threat of a major pollution incident therefore remains real. Preparedness is therefore about readiness to handle a very large but infrequent incident as well as to deal with smaller incidents that happen more frequently.

2.3 The Department also commissioned consultants to identify areas around the UK coastline that are at the greatest risk of oil and chemical pollution from shipping and that are, at the same time, the most environmentally sensitive **(Figure 7, overleaf)**. The Department is using the results of this work to identify Marine Environmental High Risk Areas (MEHRAs) around the UK coast. It will be consulting industry, local government and other interested parties on how MEHRAs should be treated and will monitor whether the identification of an area as a MEHRA has any practical effect on the shipping activity in the area, before assessing whether any further measures, such as routeing of vessels or reporting of vessel movements in and around the area, need to be taken.

6 Probability of different sizes of oil and chemical spills occurring around the UK coast

The Department and the Agency have estimated that the probability of oil and chemical spills occurring around the UK coast varies, depending on the size of the spill.

Type and size of spill	Frequency	Likelihood in any one year
Oil		
At least something	Every year	100%
At least 4,000 tonnes	Every other year	50%
At least 10,000 tonnes	Every 3 years	33%
At least 24,000 tonnes	Every 6 years	17%
At least 100,000 tonnes	Every 17 years	6%
Chemical		
At least something	Every other year	50%
At least 100 tonnes	Every 5 years	20%
At least 1,000 tonnes	Every 8 years	13%
At least 10,000 tonnes	Every 100 years	1%
At least 50,000 tonnes	Every 1,000 years	0%

Source: National Audit Office, using data from the Department for Transport, Local Government and the Regions and the Maritime and Coastguard Agency

2.4 After saving human life, the key purpose of responding to a maritime incident is to protect human health and the marine and terrestrial environment. To deal with pollution effectively, tried and tested contingency plans need to be in place and the Agency needs to ensure that the right response capabilities, in terms of skills, equipment and facilities, are in place and are proportionate to the risk of marine pollution incidents occurring in UK waters. In particular, being well prepared requires:

- a national contingency plan, and local plans, to be put in place;
- the establishment of an appropriate level of pre-positioned equipment to tackle pollution; and
- a programme of exercises and training.

This Part of the report therefore examines whether the Agency, ports and harbours and local authorities are properly geared up to deal with marine pollution.

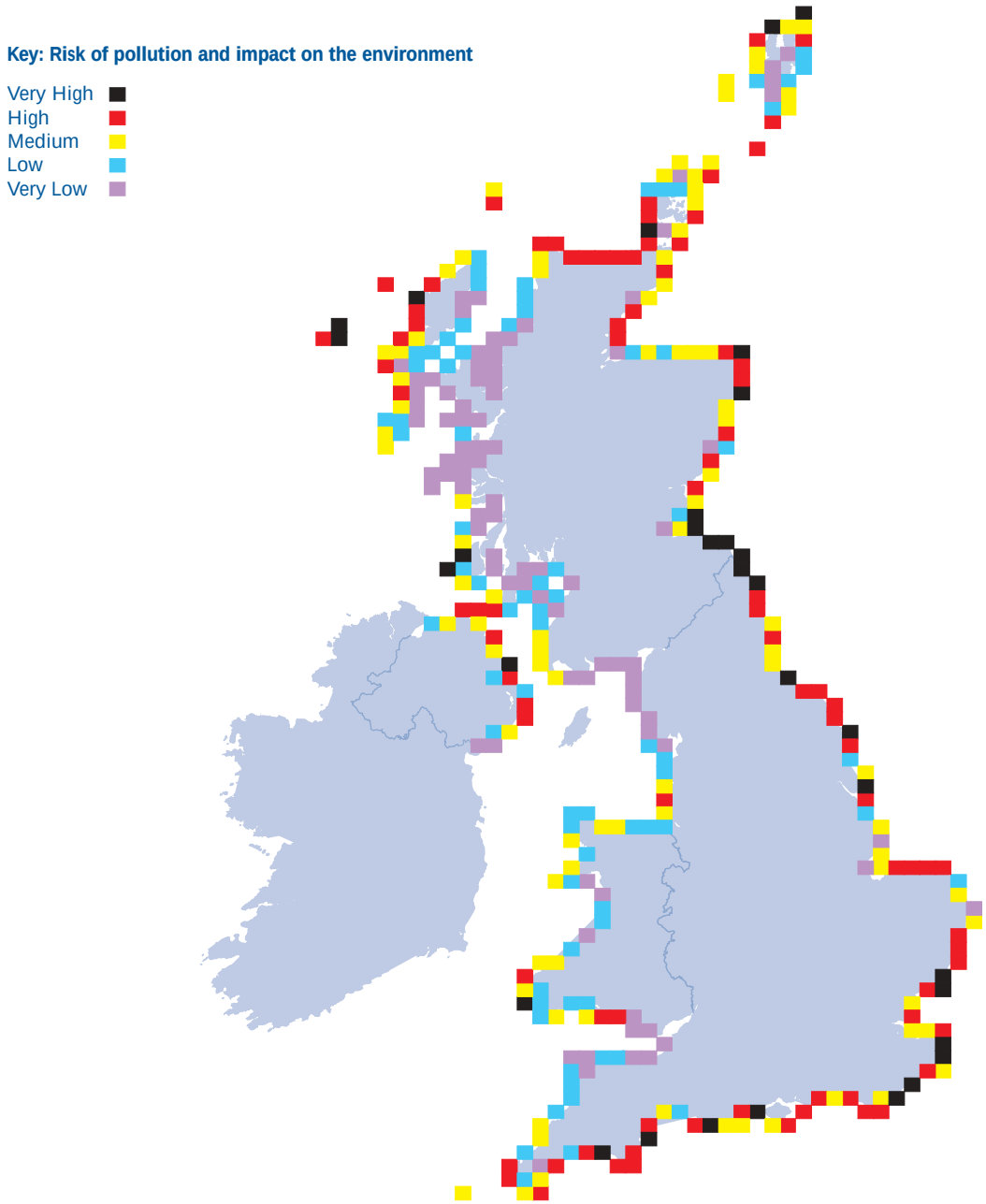
Contingency plans

Is there a national contingency plan?

2.5 When the Maritime and Coastguard Agency was set up in April 1998, it inherited a National Contingency Plan for Marine Pollution from Shipping and Offshore Installations that had been drawn up by the former Department of Transport. In his March 1999 report on the *Review of Salvage and Intervention and their Command and Control* in response to the *Sea Empress* incident, Lord Donaldson recommended that the Agency revise the National Contingency Plan to reflect changes that he was proposing to the Government's powers of salvage and intervention. In response, the Agency and the Department developed a new National Contingency Plan in consultation with other relevant departments, agencies and stakeholders, which they published in February 2000 and distributed widely to the relevant departments and stakeholders, including all ports and harbours, coastal local authorities, as well as contractors and North European countries.

7 The most environmentally sensitive areas of the UK coastline that are at greatest risk of oil and chemical pollution from shipping

The Department identified environmentally sensitive areas of the UK coastline most at risk of pollution from shipping.



Source: The Department for Transport, Local Government and the Regions

2.6 The Plan covers pollution by oil or other hazardous and noxious substances, such as chemicals, that are liable to create hazards to human health or the marine and terrestrial environment. The Plan sets out a framework for dealing with major pollution incidents that threaten UK interests **(Figure 8)**. It also sets out the roles and responsibilities of a wide range of national and local bodies in responding to a maritime incident (Appendix 2), reflecting their varied interests and priorities in protecting human health and the marine and terrestrial environment from pollution. Most of the respondents to our surveys of ports and harbours and local authorities around the UK coast reported that they understood the part they played in the National Contingency Plan.

8 National Contingency Plan framework for dealing with major pollution incidents that threaten UK interests

The National Contingency Plan sets out a clear structure of roles, responsibilities and actions for dealing with pollution incidents that require a national response.

Scope and purpose

Setting out the legal basis for the Plan, defining marine pollution and the area covered by the Plan, the purpose of the Plan and the Agency's overall responsibility for implementing it.

Information that the Agency expects to receive

Incidents at sea should be reported urgently to HM Coastguard, who contacts the vessel or offshore installation for further information before initiating search and rescue, where required.

Establishing the level of response

Setting out the range of factors that the Agency will consider when deciding on the appropriate level of response.

Setting up national incident response units

Identifying the need for separate but linked response units to direct salvage operations, clean up at sea, shoreline clean up and operations in any affected ports or harbours.

Salvage operations

Setting out the role and intervention powers of the Secretary of State's Representative (SOSREP) in response to an incident where there is a threat of significant pollution.

At sea response

Outlining the role of a Marine Response Centre in managing sea borne and air borne counter-pollution operations, including the spraying of dispersants, the deployment of equipment and monitoring and recording financial commitments for use in cost recovery claims.

Port or harbour response

Summarising the role and powers of the harbourmaster in dealing with an incident inside the port's or harbour's waters.

Shoreline and on-shore response

Identifying the need to set up a Shoreline Response Centre when the threat of pollution exceeds the capability of the most affected local authority, bringing together representatives from all the local authorities and port authorities in the area that may need to participate in the clean up operation.

Environmental advice and monitoring

Setting out the role and membership of an Environment Group, which should be set up where a pollution incident requires a regional or national response. The Group would include the relevant statutory nature conservation agency, the department responsible for fisheries and the relevant environmental regulator. The Group would provide baseline data on vulnerable environmental features so that subsequent environmental damage could be quantified. It would also advise all those involved in clean up and salvage at sea and on the shoreline on the environmental aspects of the incident, including options for dealing with it, and track the success of counter-pollution measures and assess the overall environmental impact.

Media handling

Identifying the need to keep the media informed as fully and as regularly as possible, as part of the management of an incident.

Record keeping

Highlighting the need for all participants to keep records of how, when and why they responded in the way that they did, and of the costs. These records would subsequently be needed to support claims for cost recovery, demonstrating that the actions taken were reasonable and commensurate with the pollution threat and the risks to safety.

Prosecution

Highlighting the duty of the regulatory bodies involved to secure evidence for possible use in court, if they believe that an offence has been committed.

Source: National Audit Office

Do port and harbour authorities have contingency plans?

2.7 The National Contingency Plan is supplemented by local plans. In April 1998, the Government amended the Merchant Shipping Act 1995 to require a port or harbour to have an oil spill contingency plan, if it was:

- a statutory harbour authority with an annual turnover of more than £1 million;
- any other harbour offering berths alongside, on buoys, or at anchor, to ships of over 400 gross tonnage or oil tankers over 150 gross tonnage;
- served a notice by the Secretary of State stating there was a significant risk of discharge of over 10 tonnes of oil; or
- served a notice by the Secretary of State stating it was in an area of significant environmental sensitivity, or an area in which discharges could cause significant economic damage.

The Agency is developing detailed criteria that it will use to decide whether ports should be served with either type of notice. The Agency expects to have identified all of the ports that fall within these criteria by July 2002.

2.8 The Agency issued guidance in May 1998 setting out detailed requirements that port and harbour authorities had to meet when drawing up their oil spill contingency plans **(Figure 9)**. Half of the respondents to our survey of port and harbour authorities reported that they had drawn up oil spill contingency plans before they were required to do so. However, most of these authorities had to change their plans significantly or partially to meet the Agency's requirements. The most common aspects of the plans that had to be changed were the authorities' training programmes and risk assessments, although many authorities also had to increase their stocks of emergency equipment and expand their programme of training exercises. The Agency updated and enhanced its guidance for ports in March 2002, introducing new requirements for ports to provide the Agency with an annual return summarising exercises and counter-pollution training undertaken during the year.

2.9 Port and harbour authorities falling within the first two criteria at paragraph 2.7 were required to submit their plans to the Agency by August 1999 for its approval, and are required to revise and re-submit their plans every five years. By March 2002, the Agency had:

- received all 166 plans that it expected, and had approved 164 of them: two plans were under review. In only one case had the Agency needed to serve a notice on behalf of the Secretary of State to the operator of a port directing the operator to put a plan in place in compliance with the OPRC regulations. The operator complied with the notice and submitted its oil spill contingency plan to the Agency for review and approval; and
- reviewed and commented on 255 of the 257 oil spill contingency plans submitted to it for offshore installations, on behalf of the Department of Trade and Industry, and the other two plans were under review. There were no other contingency plans that had yet to be submitted to the Agency, although there might be more in future as the operators of offshore installations apply to the Department of Trade and Industry for licences for oil or gas exploration, development or production.

9 Key requirements of ports' and harbours' oil spill contingency plans

The Agency has set out key requirements that ports and harbours must meet in their oil spill contingency plans.

- Information on the geographic coverage of the plan, the roles of the port and harbour and local authorities in the area and the response strategy
- Assessment of the risk of pollution from vessels using the port or harbour, either on routine business or as a place of refuge in an emergency
- Assessment of the potential scale and impact of an oil spill in the port's or harbour's waters, including health effects, the economic impact on the port and the surrounding population and environmental impacts
- Details of personnel and pre-positioned equipment available in-house and under contract for dealing with a medium sized spill, commensurate with the risks
- Details of a programme of exercises to practise oil spill response measures
- Details of programmes to train all staff involved in counter-pollution activities to the levels specified by the Agency
- Detailed emergency procedures for rapid mobilisation of resources
- Relevant maps, lists of contact names and other information required to assess an incident and respond effectively

Source: National Audit Office

2.10 Although the National Contingency Plan covers oil and chemical pollution, ports' and harbours' local contingency plans are only required to cover oil pollution. This gap in preparedness is expected to be addressed by the Protocol on Preparedness, Response and Co-operation for Pollution Incidents by Hazardous and Noxious Substances (the HNS Protocol), adopted by the International Maritime Organisation (IMO) in March 2000. The Protocol has so far been ratified by only one state, rather than by the 15 states required to bring it into force. The Protocol might not be in force internationally until 2005. However, the UK government is considering whether to introduce the requirements of the Protocol in the UK before the Protocol is adopted internationally, and might be able to bring them into UK law by the end of 2004. Ports and harbours will have the

choice of adapting their existing oil spill contingency plans, or preparing a new HNS emergency plan in addition to their existing contingency plans.

Are contingency plans tested regularly?

2.11 In his March 1999 report, Lord Donaldson recommended that the Agency test the effectiveness of the National Contingency Plan by carrying out a full-scale exercise in each of the Agency's four regions. In response, the Agency carried out an exercise in each of its four regions between October 1999 and February 2001. Each exercise involved a fictional pollution incident caused by a vessel. The Agency has recently undertaken another exercise in conjunction with the Department of Trade and Industry, involving a fictional oil spill from an offshore installation. Each exercise took two days and cost around £100,000. The first four of these exercises have been independently evaluated to identify lessons and areas for improvement; the evaluation of the most recent exercise is in hand. The Agency observes similar exercises overseas and observers from other maritime authorities also attend national exercises in the UK.

2.12 We surveyed the 25 organisations that participated in the exercise that took place in February 2001 (*Exercise Snowdon*) to ascertain their views on its planning, execution and impact. All 15 that responded considered that the Agency's planning and running of the Exercise was excellent or good. Eight of the respondents told us that their organisations had made or planned to make changes in their counter-pollution arrangements following the Exercise. These included improved training and guidance, more equipment and resources to tackle pollution incidents and improvements in local contingency plans.

2.13 The Agency requires port and harbour authorities to carry out regular exercises to test their contingency plans. The Agency expects ports and harbours to implement a balanced programme of exercises in order to test different aspects of their plans and ensure that all aspects are covered over a reasonable period of time. The nature, scope and frequency of exercises vary. Ports and harbours are required to carry out:

- **Notification exercises**, to test call-out procedures and communications systems. There should be two of these exercises a year;
- **Mobilisation exercises**, to test mobilisation times of personnel and any resources provided under contract. These exercises may be carried out in isolation, or as part of another exercise. The Agency has not specified the number of such exercises it expects each year;
- **Table-top exercises**, to test ports' and harbours' incident management capabilities. Such exercises may include co-ordination with local authorities and fire, police and ambulance services and should be carried out at least once a year; and
- **Incident management exercises**, to test the capability of local teams to respond to small, medium and large spills, including the deployment of equipment and personnel. Each port must hold such an exercise at least every three years.

2.14 Most of the respondents to our survey of ports and harbours reported that they had carried out exercises to test their plans. Although the Agency does not have a statutory responsibility to ensure that ports and harbours test their contingency plans on a regular basis, it visits 40 ports a year to observe their training exercises. However, in our visits to the four Principal Counter Pollution and Salvage Officers around the country, the Agency could not demonstrate which ports it had visited, the types of exercises undertaken by the ports or how well the ports had performed. Under its new guidance to ports, the Agency requires ports to submit an annual return summarising the exercises they have undertaken. The Agency will use these returns to inform its visits to ports. We identified several areas where there was scope for improving the Agency's monitoring visits **(Figure 10)**.

10 NAO best practice guide for ensuring that ports and harbours are ready to deal with pollution incidents through regular testing of their plans

There are several ways in which the Agency could improve its assurance that ports and harbours are ready to deal with pollution incidents through regular testing of their plans.

In determining which ports to visit, the Agency should take account of:

- the volume and type of traffic passing through each port; and
- the risks posed by each port, based on the number and size of reported pollution incidents in the ports' waters, the nature and extent of deficiencies identified by inspections of vessels that use the ports, and the results of previous monitoring visits undertaken by the Agency.

In undertaking its monitoring visits, the Agency should:

- focus on mobilisation and incident management exercises, including equipment deployment, to ensure that ports and their contractors can respond quickly to incidents;
- give feedback to ports on their performance; and
- follow up recommendations made in previous monitoring visits to ensure that any required improvements are made.

Source: National Audit Office

Resources for dealing with ship pollution

2.15 When an incident occurs, the Agency will in the first instance look to the relevant port, harbour or local authority to deal with it. However, where an incident exceeds these authorities' capabilities, the Agency will mobilise national resources. This may involve the Agency drawing on a range of UK resources, both internal and external, including resources provided under contract or through standing agreements with commercial companies. The Agency may also request assistance from other maritime authorities that are party to international or bilateral agreements. **Figure 11** shows the sources of counter-pollution resources that may be called upon to deal with pollution incidents, depending on their size.

11 Sources of counter-pollution resources to deal with pollution incidents

Local, regional, national and international resources may be called upon to deal with pollution incidents, depending on their size.

Source of resources	Small spill	Medium spill	Large spill
Port, harbour or local authority	✓	✓	✓
Neighbouring port, harbour or local authorities		✓	✓
Maritime and Coastguard Agency			✓
Commercial companies under contract to, or with standing agreements with, the Agency			✓
Other maritime authorities			✓

Source: National Audit Office

2.16 The Agency itself needs to have the right resources in the right places to deal with pollution incidents requiring a national response. It needs to ensure, in particular, that its response capacity is proportionate to the risk of marine pollution incidents occurring in the UK and that it can mobilise its resources quickly to minimise the impact of an incident anywhere around the UK. The Agency needs to have at its disposal:

- **specialist personnel** who are skilled and experienced in dealing with oil and chemical pollution and salvage operations;
- **emergency towing vessels** capable of towing stricken vessels away from the coastline to avoid or reduce the threat of pollution;
- **aerial surveillance and spraying capabilities and dispersants,** for detecting oil pollution at sea and monitoring and treating it; and
- **counter-pollution equipment,** such as booms, machines to skim oil from the surface of the sea, and beach cleaning equipment to be used in dealing with pollution at sea and on the shoreline.

The Agency also needs to assure itself that ports and harbours have the right resources to deal quickly and effectively with pollution incidents that occur in their ports.

Does the Agency have the right resources in the right places?

2.17 Since it was established in April 1998, the Agency has reviewed many aspects of the counter-pollution resources available to it, and has strengthened its response capabilities in some key areas to deal with the risk of pollution. **Figure 12** shows the location of the Agency's dedicated counter-pollution resources.

Specialist counter-pollution personnel

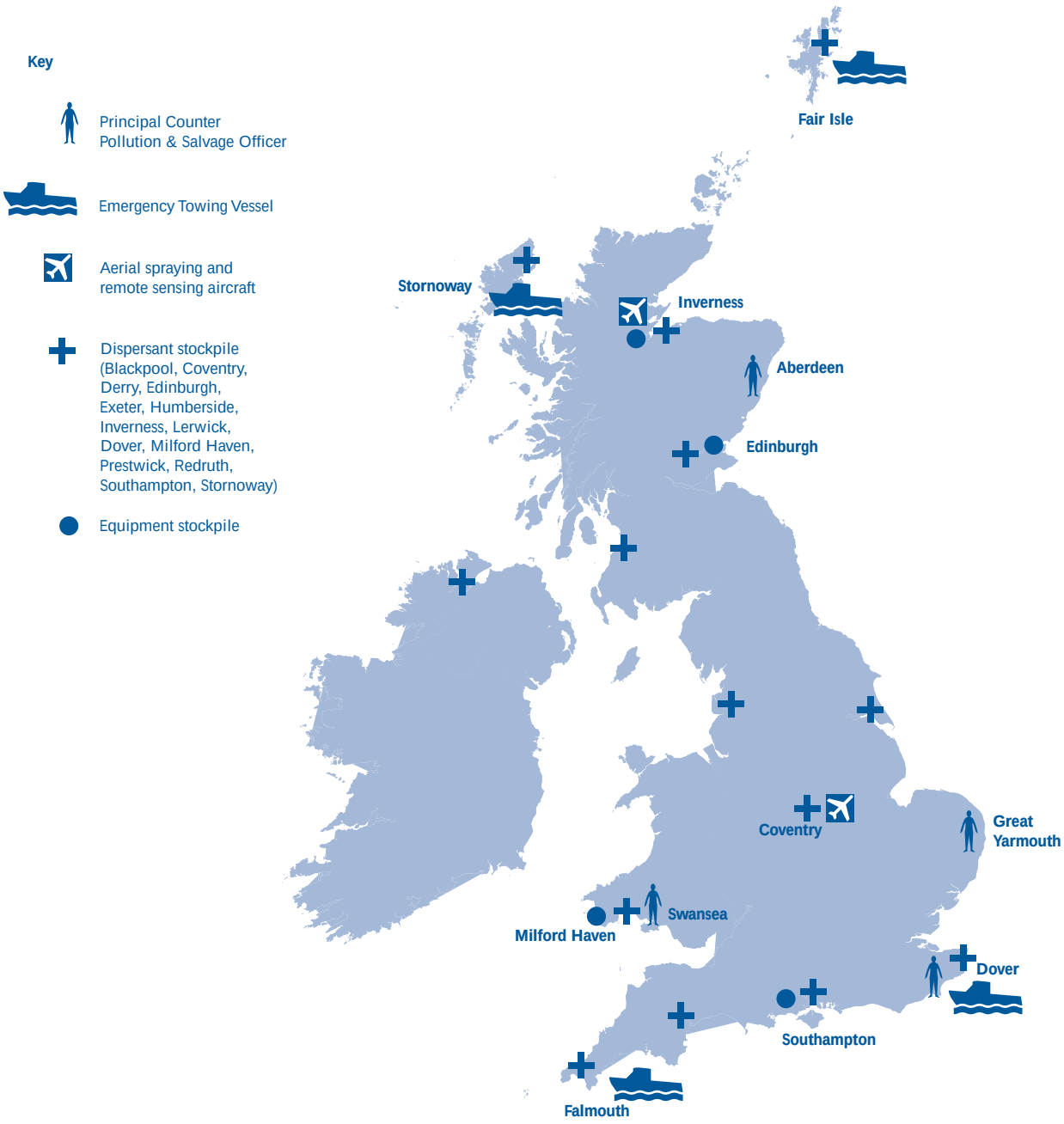
2.18 When actual or threatened pollution incidents occur, the Agency deploys its own personnel such as coastguards and marine surveyors to oversee the initial stages, assess the damage condition of vessels and consider the need for specialist resources. In addition, the Agency has to hand more specialist staff for its counter-pollution activities, both inside and outside the Agency.

2.19 Lord Donaldson, in his March 1999 report (see paragraph 2.5), recommended the appointment of a Secretary of State's Representative (SOSREP) and an understudy to the SOSREP in each of the Agency's regions. The SOSREP would have powers to take ultimate control, in the over-riding public interest, of any salvage operation in UK waters where there was a threat of significant pollution. The Government appointed a SOSREP in October 1999 and, between July and September 1999, the Agency appointed four regional Principal Counter Pollution and Salvage Officers (PCPSOs) to support the SOSREP in responding to salvage incidents. The four PCPSOs are also responsible for reviewing port and harbour authorities' OPRC plans and responding to pollution incidents. The Agency has recently reviewed the organisation and staffing of its Maritime Operations Directorate, within which much of its counter-pollution activities are carried out, and, from 1 April 2002, has re-structured its operations by:

- rationalising itself from four regions to three, with PCPSOs in Aberdeen, Swansea and Great Yarmouth being re-titled Regional Operations Managers for Counter Pollution and Salvage but with the same responsibilities as before and the fourth PCPSO

12 Location of the Agency's dedicated counter-pollution resources, 2001-02

The Agency's dedicated counter-pollution resources are located across England, Scotland, Wales and Northern Ireland.



Source: Maritime and Coastguard Agency

moving to the Agency's headquarters in Southampton to head the central Counter Pollution and Response team; and

- creating a new post of Regional Operations Manager for Search and Rescue and Counter Pollution in each of the three regions.

2.20 The Agency has also devolved responsibility to duty officers in its Coastguard stations around the country for assessing small pollution incidents up to one tonne and monitoring the effectiveness of any response. The Regional Operations Managers for Counter Pollution and Salvage would only be alerted if an incident was not being dealt with effectively or the area affected was environmentally sensitive. The Agency expects this practice to release Regional Operations Managers to focus on the more significant incidents.

2.21 The Agency has also recently appointed 10 surveyors as Marine Casualty Officers in its Marine Offices around the country. These surveyors will board a vessel to monitor the progress of any salvage work being undertaken and to keep the SOSREP informed. The Agency is training these Officers to ensure that they are

competent in embarking and disembarking from vessels by boat and helicopter, and are trained in risk assessment and personal survival techniques. The Agency expects all Officers to be fully trained and equipped by April 2003.

2.22 The Agency has a contract with a commercial firm to provide a Chemical Strike Team of eight personnel at six hours notice to help the Agency deal with an incident involving hazardous substances. The contractor has a core team of 45 specialists who can provide further back up within 8 hours if required. The Agency has mobilised the Team on five incidents since the Agency was set up in March 1998. In May 2001 a chemical spill risk assessment commissioned by the Agency was intended to assess response options and the resources needed to deal with chemical spills. The report did not, however, conclude on the adequacy of the resources at the Agency's disposal to deal with chemical spills.

2.23 The Agency is exploring the scope for entering into an agreement with UK oil industry associations under which major oil companies would try to offer assistance, in the form of equipment and personnel, to the Agency when requested to help deal with significant or major oil spills in UK waters. The Agency would manage and deploy the resources as it saw fit, reimbursing the oil companies for the resources provided. The agreement would provide no firm commitment about the availability of resources from any individual oil company, whose resources might be committed on other activities at the time of the Agency's request for help. However, the range of major oil companies covered by the agreement is likely to mean that, in practice, the Agency would be able to obtain the necessary resources as and when needed.

Emergency Towing Vessels

2.24 Emergency Towing Vessels (ETVs) can play a key role in the prevention of pollution at sea, being used to tow drifting vessels away from the shoreline and stop them from running aground. When it was set up in April 1998, the Agency inherited from the Department of the Environment, Transport and the Regions charter agreements for the provision of three ETVs to operate in the Dover Strait, The Minches and the South West approaches. Each vessel was chartered for the winter period only. In February 2001, the Agency reviewed ETV coverage around the UK coast, carrying out a detailed cost benefit analysis to assess what level of ETV coverage would be justified. The Agency concluded that it would be cost effective to provide for a fourth ETV, based at Fair Isle in the Shetland Islands, and for all four vessels to operate all-year round. The vessels have been in operation on this basis since October 2001.

2.25 Each Emergency Towing Vessel remains on standby at sea rather than in port, patrolling shipping lanes within its own designated area with a radius of 100 nautical miles reflecting the area within which it is most likely to need to be deployed. Subject to weather conditions, it would take a vessel at least 10 hours to reach its boundary at economical speed, or 6 to 7 hours to reach its boundary at full speed. However, in practice, the Agency's Coastguard stations monitor vessels in their areas and may task an Emergency Towing Vessel to make its way towards any vessel causing concern, cutting down the response time were the condition of the vessel to become more serious requiring urgent ETV assistance.

2.26 Although ETVs may be tasked to deal with an incident outside their designated area, their primary responsibility lies within their immediate operating area. This leaves much of the UK coast without any dedicated ETV coverage. The Agency has therefore put in place an agreement for the hire of tugs from commercial operators based at various ports around the country. The Agency is also exploring the possibility of sharing with its Irish counterpart a fifth ETV to be located in the Irish Sea, since the costs to the Agency of operating an ETV alone in that area would greatly exceed the benefits.

2.27 The Agency needs to assess, however, how long it would take an ETV or a commercial tug to arrive at an incident anywhere around the UK coast. The Agency should ensure, in particular, that there is sufficient resource potentially available to cover the most environmentally sensitive areas of the UK coastline that are at greatest risk of oil and chemical pollution from shipping, identified in Figure 7.

Aerial spraying and surveillance

2.28 The Agency also inherited from the Department a five-year aerial spraying and surveillance contract with a private sector provider. The Agency reviewed the existing provision and decided that it was not getting value for money from the existing contract. The Agency therefore terminated and re-tendered the contract, awarding a new contract to the same provider but at a better price in August 2000. The spraying aircraft must be on scene ready to spray within six hours of call-out, anywhere within 50 miles of the UK coast. Flying faster than before, the aircraft can now be at the scene of an incident more quickly and can fly more sorties in a 24-hour period. Flying times vary between the aircraft bases at Coventry and Inverness and the other airports around the country used as bases for dispersant spraying operations, but the aircraft can reach the most distant forward operating base at Sumburgh on the Shetland Islands in one and three-quarter hours. Within two days, the aircraft would be able to spray enough dispersant to treat a 16,000 tonne oil spill within 50 miles of the coast anywhere around the UK.

2.29 The 10-year contract costs £1.7 million a year, saving the Agency £1.7 million a year compared with the previous contract. The Department of Trade and Industry (DTI) is a partner in the contract, paying directly for flying hours for aerial surveillance of offshore installations and allowing the Agency and the Department to obtain economies of scale and share the benefits of lower unit rates for each hour flown. Further savings might have been achieved, however, had other public sector partners, with similar aerial surveillance tasks, been involved. The Department for Environment, Food and Rural Affairs (DEFRA) has its own arrangements for the surveillance of fishing grounds as a means of policing fishing quotas. Similarly, the Scottish Fisheries Protection Agency (SFPA), an executive agency of the Scottish Executive Environment and Rural Affairs Department (SEERAD), operates surveillance aircraft as part of its responsibilities for protecting the marine environment and fisheries in Scotland. DEFRA and SFPA use the same aerial surveillance contractor, to obtain economies of scale. The Maritime and Coastguard Agency told us that these bodies have different aerial surveillance requirements that would have deflected from the Agency's and the DTI's operational needs.

2.30 In all five pollution cases that the Agency has taken to court over the past three years (see Figure 27), the initial evidence came from surveillance aircraft operated either by the Dutch coastguard or by UK fisheries protection bodies; none has come from the Agency's own surveillance aircraft. The new contract provides surveillance aircraft that can fly faster than before and has introduced enhanced Side Looking Airborne Radar (SLAR), allowing the aircraft to scan 20 miles either side of the aircraft, compared with 10 miles previously. The new aircraft and radar would typically survey 32,000 square miles in a five-hour period of surveillance, compared with 14,000 square miles in the past. The surveillance aircraft should therefore be able to respond more quickly to reported incidents and cover a wider area, increasing the chances of identifying offending vessels and gathering evidence for use in court.

2.31 The enhanced surveillance capabilities were required to be in place by February 2001. However, modifications to the aircraft to accommodate the new radar equipment required approval by the Civil Aviation Authority before the aircraft could be issued with a Certificate of Airworthiness. The first of the aircraft did not secure such a Certificate until January 2002. The other aircraft is expected to be upgraded and certified for use by July 2002.

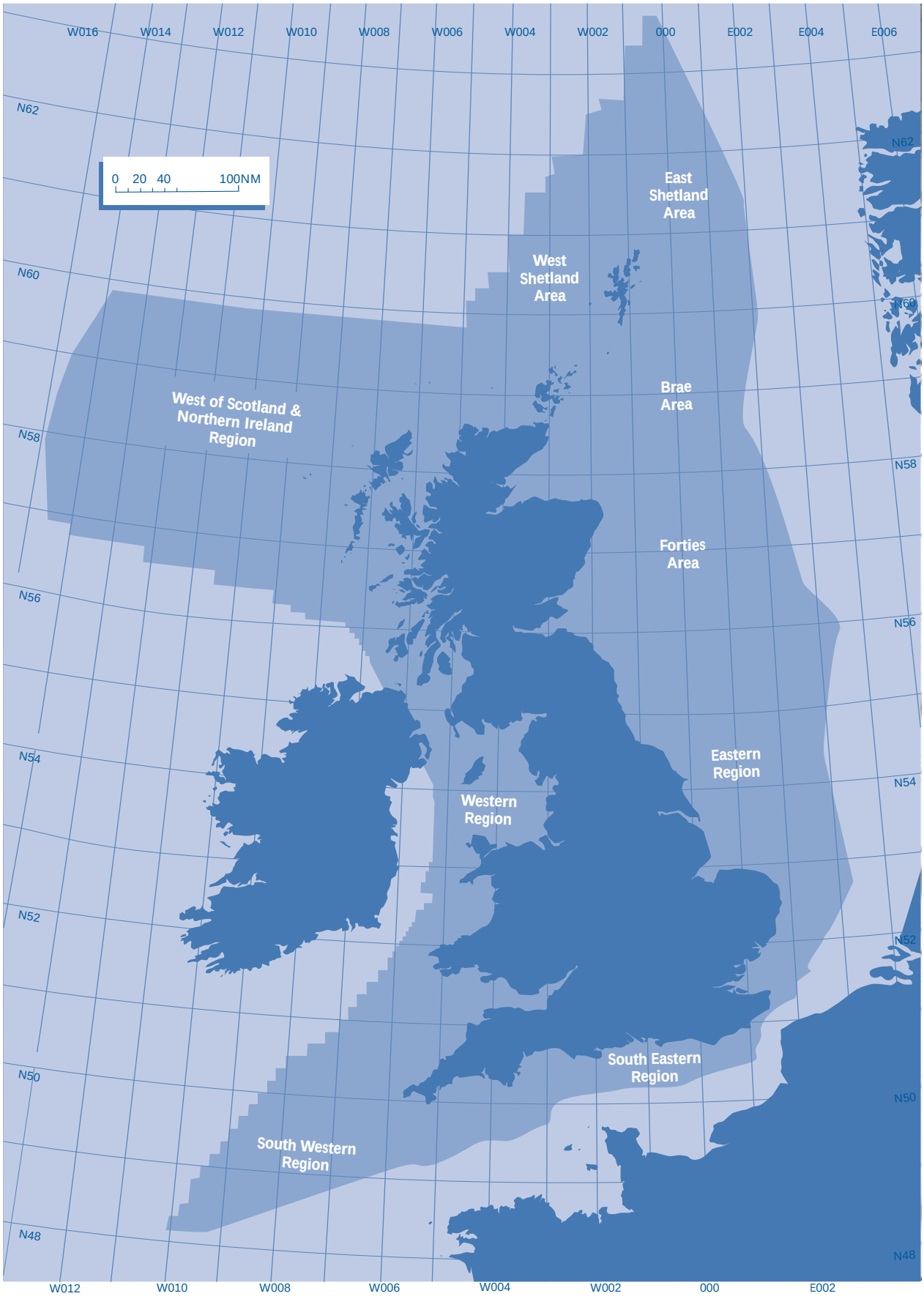
2.32 The Agency's aerial surveillance flight programmes vary from month to month to avoid their becoming so predictable as to undermine their deterrent effect. However, surveillance coverage should generally be targeted on the regions posing the greatest risk. The Agency has not done any work to ensure that this is the case. Nor has it reviewed the extent to which the aircraft fly at night, as opposed to during the day. We analysed aerial surveillance flight data from March 2001 to February 2002 and compared the data with the nine geographical regions and areas into which the Agency has divided the UK Pollution Control Zone for aerial surveillance purposes **(Figure 13, overleaf)**.

2.33 The flight data showed that the aerial surveillance aircraft spent most of their flying time surveying the Dover Strait and the English Channel in the South Eastern Region and the Eastern Region, where the highest shipping traffic densities are found. Less time was spent over the South West and Western regions, where traffic densities are moderate and little flying time was spent surveying the West of Scotland and Northern Ireland Region where traffic densities are low. The Forties, Brae and East and West Shetland areas were covered by surveillance flights of offshore installations on behalf of the Department of Trade and Industry.

2.34 The aerial surveillance aircraft have infra red and full night vision capabilities, so there are no technical constraints on their ability to operate at night. The flight data for March 2001 to February 2002 showed, however, that almost all of the aerial surveillance over that period took place during the day. Of the 370 programmed hours flown, over 344 hours (93 per cent) were flown during the day; there were only 25 hours of night-time flying - an average of 2 hours a month. The Agency told us that it had suspended night-time flying for a year from August 2000, while it co-ordinated its day time surveillance flights with a satellite oil spill sensing trial. Of the 25 hours of night-time flying during the period, 19 hours occurred in the six months after the satellite trial had ended in August 2001 - an average of only 3 hours a month. Night time flying was sporadic; there was none in September 2001, or February or March 2002, while seven hours were flown at night in April 2002. The concentration of aerial surveillance effort during the day might be justified by the greater volume of shipping movements during daylight hours. However, vessels may come and go from ports during the day or night and masters and crew might believe that it is safe to discharge pollutants into the open sea at night when there is little or no chance of authorities spotting them. In the absence of any data to show the levels of traffic during the day and at night, we were unable to determine whether the balance between daytime and night-time flying was appropriate.

13 Marine pollution aerial surveillance regions and areas

The Agency has divided the UK Pollution Control Zone into 9 regions and areas for aerial surveillance purposes.



Source: Maritime and Coastguard Agency

2.35 The Agency is looking to improve evidence gathering and the identification and tracing of offenders by other means:

- In August 2000, the Agency commissioned a satellite oil spill sensing trial at a cost of some £100,000, to assess whether satellites could be used to improve the detection and identification of polluters. Information from a satellite might allow the Agency to target surveillance aircraft more accurately towards potential polluters in the UK Pollution Control Zone. An "eye in the sky" also has the potential to provide a strong deterrent effect against the discharge of pollutants at sea, where polluters might consider they are undetectable. The Agency considered that the trial was a success and intends to let a contract for satellite sensing over key areas of the UK Pollution Control Zone as well as areas just outside the boundaries of the Zone, where there is a risk of vessels discharging pollution before they enter or after they leave the Control Zone.
- The Agency is also co-operating with other maritime authorities in the development and promulgation of a European standard on oil spill sample collection and analysis. The aim is to bring consistency to this area of evidence gathering and analysis, and assess whether oil spills can be traced to a vessel or offshore installation by way of the oil's chemical "finger print". The Agency would be able to show in any resulting court cases that its evidence was based on a European standard and that there was therefore no doubt about its validity. However, there is no external source of funding for this collaborative project and no target date for its completion.
- From July 2002, an amendment to the Safety of Life at Sea (SOLAS) Convention by the International Maritime Organisation will require vessel owners to start fitting an Automatic Identification System to their vessels. Such a system will transmit automatically by radio signal key information about a vessel, such as its name, call sign and type, the vessel's position, course, speed and destination, and details about what the vessel is carrying both as cargo and as bunkers for its own use. All cargo vessels of 300 gross tonnes or more engaged on international voyages, domestic cargo vessels of 500 gross tonnes or more, and all passenger vessels irrespective of their size will be required to install such a system on a phased basis by 2008. The Agency has installed the necessary infrastructure in its coastguard stations around the UK to receive the information from vessels' systems. The Agency will therefore be able to identify vessels in UK waters and track their movements, improving the Agency's ability to identify and trace offenders in cases of pollution incidents.

Stockpiles of dispersants

2.36 The Agency has 1,400 tonnes of dispersants stockpiled in 14 locations, mostly airports, around the country. There are eight different types of dispersant, all of which have been tested on a regular basis to ensure that they can continue to be used at sea or on beaches, within the regulations laid down by the Department for Environment, Food and Rural Affairs. The stocks are worth over £1.5 million. The Agency has commissioned a review of its stockpiles, to assess whether:

- it is holding the right amounts and types of dispersant;
- the stockpiles are in the right areas of the country; and
- there is scope to share stocks of dispersant with commercial companies that provide ports and harbours with their capabilities for responding to a medium sized oil spill in their waters.

The Agency will need to ensure that the review assesses what size of spill it should be able to deal with from its existing stocks, taking account of the probability of spills of different sizes occurring (see Figure 6), how often the stocks have been mobilised and used over recent years, and how quickly dispersants can be re-stocked. The Agency expects the review to be completed by June 2002.

Counter-pollution equipment

2.37 The Agency has a range of counter-pollution equipment stored in four locations around the country. Contractors must be able to start mobilising the equipment within half an hour of being called out, during normal office hours (9 am to 5 pm), and within one hour outside office hours. The first equipment for at-sea clean up must be on its way within one hour of call out during office hours, and within two hours at all other times. It must be able to reach any part of the UK mainland within 12 hours of leaving the equipment stockpile.

2.38 The Agency has adopted a policy of "graduated response" to incidents, by which it alerts the operators of the equipment stockpiles that they might be required to mobilise the equipment for small or medium sized incidents and does not move too much equipment too early as this could be deemed unreasonable, jeopardising any subsequent cost recovery. In December 2001, the Agency relocated booming equipment to four locations around the country to improve its ability to make a speedy and effective response to pollution incidents affecting the UK shoreline. The Agency has kept its other equipment under regular review and is confident that it has the right

equipment. However, the Agency needs to review, in the light of its experience of responding to recent incidents, how many sites there should be for this equipment to ensure that it can respond to incidents cost-effectively. As part of such a review, the Agency should assess the scope for sharing or contracting out the provision of equipment to commercial companies, such as those that provide ports and harbours with their capabilities for responding to a medium sized oil spill in their waters.

Agreements with other maritime authorities

2.39 In addition to its own and other UK-based resources, the Agency may also call on the resources of neighbouring maritime authorities to help it deal with an incident. The Agency is party to reciprocal agreements with other authorities for the provision of mutual assistance; and, although no resources are involved, it is also putting in place agreements to clarify the demarcation of responsibilities and co-ordination arrangements for dealing with marine pollution incidents involving Norway, Ireland and the Isle of Man **(Figure 14)**.

14 Counter-pollution agreements with other maritime authorities

The Maritime and Coastguard Agency is party to several counter-pollution agreements with other maritime authorities.

Bonn Agreement

Signed by all countries bordering the North Sea, providing for co-operation and mutual assistance in the event of a marine pollution incident.

Mancheplan

This is the Anglo-French Joint Maritime Contingency Plan, providing for bilateral assistance between the UK and the French authorities in the English Channel.

Norbrit Agreement

An agreement covering operational co-operation between the UK and Norway, mostly for major incidents involving offshore installations in the North Sea.

UK-Ireland Operational Agreement

The Agency has agreed detailed procedures for the co-ordination and sharing of responsibilities in dealing with marine pollution incidents in the Irish Sea. The Agency hopes that the agreement will be signed by June 2002.

UK-Isle of Man Memorandum of Understanding

The Agency has agreed a memorandum of understanding with the government of the Isle of Man, for the conduct of search and rescue and marine counter-pollution and salvage operations in Manx territorial waters. The Agency hopes that the agreement will be signed in May 2002.

Source: National Audit Office

How many incidents can the Agency deal with at any one time and what is the largest incident that the Agency can handle with and without external assistance?

2.40 The Agency believes that it has put in place enough resources to be able to deal with more than one major pollution incident at a time, whilst also being able to deal with minor incidents. The Agency pointed to two recent incidents, involving the *Kodima* and the *Willy*, which took place within a short space of time of one another and involved the Agency dealing with both incidents at the same time.

2.41 However, the *Kodima* was carrying a cargo of timber, while the *Willy* had already unloaded its cargo of petrol when it got into trouble. Neither incident threatened or involved significant oil or chemical pollution. It is six years since the UK experienced a pollution incident on a large scale, with the grounding of the *Sea Empress* and the loss of 72,000 tonnes of crude oil in 1996. The Agency has strengthened the resources at its disposal since that incident. However, it has not quantified how big an incident it would be able to handle with its own resources, before needing to call on commercial companies and neighbouring maritime authorities for assistance, or how much more capacity such assistance would bring. Figure 6 shows that an oil spill of at least 24,000 tonnes is probable every 6 years. A spill of at least 100,000 tonnes may occur once every 17 years; the last incident on this scale was the *Torrey Canyon*, 35 years ago. There is therefore scope for the Agency to undertake a strategic review of its counter-pollution resources, assessing the capacity they provide in aggregate terms compared with the risk of one or more major pollution incidents occurring at the same time.

Has the Agency assured itself that port and harbour authorities have the right resources?

2.42 The guidance issued by the Agency in May 1998 set out three tiers of response, depending on whether an oil spill was small, medium or large, in order to help determine who should respond to an incident **(Figure 15)**. The Agency does not consider it appropriate to define in terms of the quantity of oil what it means by a small, medium or large spill; who should respond varies from incident to incident, depending on the size of the spill and the capacity of port and harbour authorities to handle it. For example, a large port handling a large volume of traffic and with a high financial turnover is expected to be able to deal with a larger spill than a small port. Ports and harbours are required to define, in their oil spill contingency plans, each tier in relation to the quantity of oil spilt taking account of the resources at their disposal. In its review of ports' and harbours' plans, the Agency assesses whether the volumes attached to each tier are reasonable.

15 The three tiers used to determine who should respond to a pollution incident

The Agency has set out three tiers of response in order to help determine who should respond to a pollution incident.

Tier	Size of spill	Responsible body
1	Small	The port or harbour authority must be able to respond immediately and handle a small spill with its own resources.
2	Medium	The port or harbour authority will need to call on additional resources, in its region, to cope with a medium sized spill.
3	Large	Large spills are those that are beyond the capability of local and regional resources, requiring assistance from the Agency and implementation of the National Contingency Plan.

Source: Maritime and Coastguard Agency

2.43 The Agency has set two key requirements for port and harbour authorities to meet:

Resources for dealing with a medium sized spill

- Ports and harbours covered by the OPRC regulations must be able to deal with a medium sized (Tier 2) oil spill. They may do this either through mutual help agreements with other ports, harbours, oil companies or local authorities or through contracts with specialist oil spill companies accredited by the British Oil Spill Control Association (BOSCA), which is the trade association representing the oil spill response industry in the UK. In some small or remote ports and harbours, oil spill response may be provided by an in-house team, provided they have enough trained personnel and the right equipment to deal with spills in a satisfactory manner.

Properly trained staff

- Ports and harbours must also train their staff to the levels specified in their oil spill contingency plans. In particular, harbourmasters or other senior personnel are required to complete a minimum level of oil spill training accredited on behalf of the Agency by the Nautical Institute, an independent, professional body that promotes high standards of qualification amongst mariners around the world.

2.44 The Agency required, in particular, that ports and harbours have Tier 2 capabilities in place by August 1999 and to have trained their staff to the appropriate levels within three months of having their oil spill contingency plans approved. Although the Agency is responsible primarily for approving authorities' contingency plans, it also needs to ensure that authorities meet these requirements. The Agency could not demonstrate, however, that ports and harbours had trained their staff, particularly their harbourmasters, to the levels specified in their plans or that they had the capability to deal with a medium sized oil spill.

2.45 Through our survey of ports and harbours and subsequent follow-up, we obtained evidence that, by May 2002, all ports and harbours subject to the OPRC regulations had contracts in place for dealing with a medium sized spill. All but one port had a harbourmaster that had been trained to the appropriate level; the remaining port had arranged for its harbourmaster to attend the specified training in June 2002.

Has the Agency ensured that ports and harbours have waste management plans and waste reception facilities?

2.46 Since January 1998, all port and harbour authorities have been required to have a waste management plan and appropriate waste reception facilities for dealing with oil residues and oily mixtures, noxious liquids and garbage from vessels using their ports. The Department issued guidance on what port waste management plans should contain **(Figure 16)**.

2.47 The Agency initially identified over 600 ports that would be subject to these requirements, although this number fluctuated as port and harbour authorities could draw up plans covering one or more ports. In order to prioritise its work, the Agency drew up a list of: 36 major ports, each having a throughput of more than 2 million tonnes of cargo a year; 75 intermediate ports where there was substantial shipping activity; and around 500 small ports.

2.48 The Agency set itself a target of approving the plans for all major and intermediate ports by December 1999, and for small ports by March 2001. It substantially achieved its targets, approving 102 plans for major and intermediate ports by the target date, and approving the remaining 9 in March 2000, and approving the plans for 529 small ports by the target date.

16 Key requirements of port waste management plans

The Department set out what port waste management plans should contain.

- Analyse and set out the amounts and types of waste generated
- Assess the type and capacity of waste reception facilities required
- Consider the location and ease of use of the facilities provided
- Assess whether the cost of using the facilities provides a disincentive to their use
- Ensure that the facilities are publicised effectively

Source: Port waste management planning - how to do it, Department of the Environment, Transport and the Regions, January 1998

2.49 The majority of the respondents to our survey of port and harbour authorities reported that, before the legislation was introduced, they did not have a waste management plan. Most respondents told us that the Agency had reviewed and commented on their plans, 60 per cent agreeing or strongly agreeing that the Agency's comments had improved the quality of their plan. The most common areas for improvement were in publicising the facilities and keeping records of their usage, while many authorities also had to change the location and type of facilities and increase their waste handling capacity. However, 40 per cent considered that no improvements had resulted from the Agency's review, most commonly because the Agency had made few or no comments on their plans before approving them.

Has the Agency ensured that waste reception facilities are adequate?

2.50 The Agency does not have a statutory responsibility for ensuring that ports and harbours maintain adequate waste reception facilities; maritime legislation places the responsibility on the harbour authority. However, the Agency commissioned an independent survey of waste reception facilities at 35 UK ports in July 2000 to assess compliance with the port waste management requirements, with satisfactory results. The Agency also voluntarily visits a selection of ports each year to assure itself that the required facilities are in place.

2.51 Use of port waste facilities is usually covered by the fees that port and harbour authorities charge vessels for using their ports. The master of a vessel faced with inadequate or a lack of reception facilities should bring the alleged inadequacy to the attention of the port concerned, and the Agency for investigation. Seven cases were reported to the Agency over the two years April 2000 to March 2002. The Agency identified deficiencies in four cases and required the operators of the ports to improve their waste handling procedures. The facilities were found to be adequate in the other three cases.

Helping local authorities plan for pollution incidents

2.52 Local authorities are not under any statutory obligation, nor do they receive any specific funding, to prepare and maintain a contingency plan for oil or chemical pollution affecting their shorelines. However, they do have a general duty to act in response to emergencies or disasters.

Do all local authorities have oil spill contingency plans?

2.53 The Agency collects information from local authorities to ascertain the status of their oil spill contingency plans and encourages them to put plans in place and review them on a regular basis. The Agency maintains a database of the 170 coastal local authorities in England, Scotland and Wales showing which authorities have plans and the dates when they last reviewed their plans. The Agency last updated the information for authorities in England and Scotland in January 2001, and for authorities in Wales in April 2002. The data show that all of the coastal authorities in England and most of those in Scotland and Wales were covered by a contingency plan (**Figure 17**). However:

- 42 authorities in England and Scotland and 11 in Wales had contingency plans that had been written between five and 11 years ago, before the new National Contingency Plan was published in

17 Status of oil spill contingency plans in coastal local authorities in England, Scotland and Wales

All of the coastal local authorities in England, and most of those in Scotland and Wales, are covered by a contingency plan.

Plan status	Number of authorities		
	England	Scotland	Wales
Plan in place/ under development	128[1]	23[1]	12[2]
Awaiting completion of a plan by another body before putting own plan in place	0	0	2
New plan to be developed when resources allow	0	0	1
No intention of preparing a plan	0	2	0
Not known	0	2	0
TOTAL	**128**	**27**	**15**

NOTES

1. All 128 coastal local authorities in England and 23 such authorities in Scotland had a plan in place.
2. County and District Councils in Wales were re-organised into 15 Unitary Councils in 1996. Eleven of the Unitary Councils had contingency plans inherited from their predecessor bodies; 12 Councils were developing new plans.

Source: Maritime and Coastguard Agency data as at January 2001 for England and Scotland, and as at April 2002 for Wales

February 2000 with which local contingency plans are expected to be consistent. All but one of these authorities were in the process of writing new plans;

- two local authorities in Wales were awaiting completion of a plan by another body, which they would need to take into account when developing their own plan; in the meantime, they did not have a plan in place; and
- two local authorities in Scotland had no intention of preparing a plan and another two had not provided the Agency with the relevant information to assess the status of their contingency planning.

Has the Agency taken steps to help ensure that local authorities' contingency plans are of an appropriate standard?

2.54 The Agency does not have a statutory responsibility for ensuring that local authorities' oil spill contingency plans are of an appropriate quality. However, it helps local authorities put appropriate plans in place, in recognition of the responsibility accepted by the Government that it should help authorities prepare for pollution incidents. The Agency:

- offers authorities free training courses on oil pollution, contingency planning and response; and
- provides local authorities with guidance on contingency planning and encourages them to submit their plans to the Agency for review and comment.

2.55 Every year, in different parts of the country, the Agency runs residential training courses on oil pollution, contingency planning and response for local authority managers. There is a limit of 24 places on each course in England, but places are unlimited on courses run in Scotland and Wales. Some places are taken by managers from local authority ports and organisations such as the Environment Agency and English Nature, in their role as statutory consultees in the approval of ports' and harbours' oil spill contingency plans. The courses are accredited on behalf of the Agency by the Nautical Institute. Each participant receives an accredited certificate in oil pollution contingency planning and response upon successful completion of the course.

2.56 The Agency's own data, and the results of our survey, show that local authority attendance on the Agency's training courses is not as widespread as it could be. Over the three years 1999 to 2001, 151 local authority managers attended one of the contingency planning training courses. However, these managers were from around 40 per cent of the 170 coastal local authorities around the country.

2.57 We surveyed all coastal local authorities in England, Scotland and Wales. Eighty per cent of the respondents told us that one or more of their officers had attended the Agency's contingency planning training course. Over 90 per cent of them considered that the standard of training was good and that it had contributed significantly to their preparations for dealing with an oil spill.

2.58 The Agency writes to all local authorities informing them of its training programme and inviting them to submit applications, and also posts the information on its Internet website. However, one of the main reasons for not attending was that local authorities had not been invited or were unaware of the courses. The other main reason for not attending was that contingency planning was not a statutory duty so no resources or priority had been given to it. Only one respondent mentioned attending a course provided by another body as a reason for not attending the Agency's course.

2.59 The Agency has voluntarily reviewed 52 local authority plans and has commented on many others whilst in draft. All of the respondents to our survey that had consulted the Agency on their contingency plans considered that the Agency's advice or information had been helpful when drawing up their plans.

Part 3

Dealing with major pollution incidents

3.1 The Agency needs to respond effectively to pollution incidents to save human life, protect human health and prevent or minimise damage to the environment. It also needs to ensure that "the polluter pays", by recovering the costs from, and prosecuting, those responsible for the pollution to help deter similar incidents in future. This Part of the report therefore examines the Agency's record in reducing pollution incidents and adverse impacts, and whether the Agency is successful in making the polluter pay.

The UK's record in reducing pollution incidents and adverse impacts

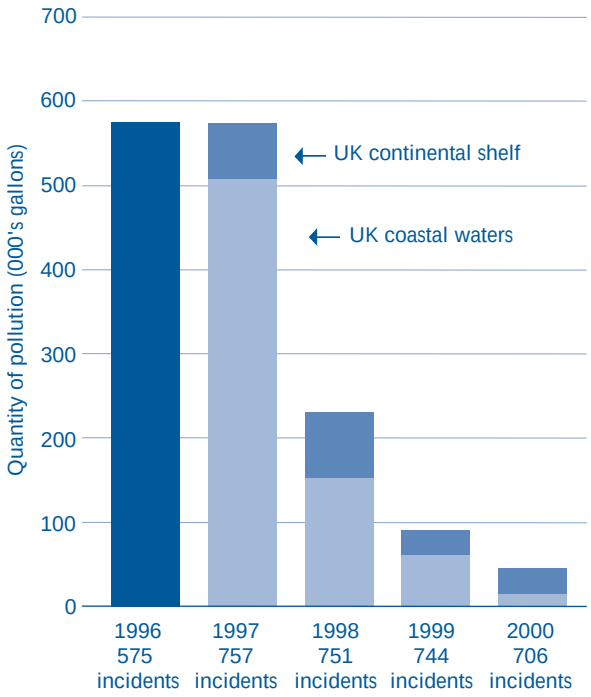
Recording outcomes

3.2 One of the Agency's key performance targets is to reduce the number of pollution incidents and the effect of oil pollution from shipping in the UK Pollution Control Zone. The Advisory Committee On Protection of the Sea (ACOPS), an international charitable organisation, carries out annual surveys of reported pollution incidents in the UK Pollution Control Zone, on behalf of the Agency. **Figure 18,** based on ACOPS data, shows that there were over 700 reported pollution incidents in the Zone each year between 1996 and 2000. Excluding the 15.9 million gallons spilt by the *Sea Empress* in 1996, which was the last major oil pollution incident in the UK, the volume of pollution spilt fell significantly over the period, from some 575,000 gallons in 1996 to 44,000 gallons in 2000. Most of the reported incidents were oil spills.

3.3 Figure 18 shows the extent of threat from ship pollution (and specifically oil pollution) and provides an indicator of the Agency's performance in preventing incidents from occurring. It does not, however, measure the Agency's performance in dealing with pollution when it occurs or the extent of the damage averted or caused.

18 Number of reported pollution incidents and gallons reported as spilt in the UK Pollution Control Zone, 1996 to 2000

There were over 700 reported pollution incidents in the UK Pollution Control Zone each year over the period 1997 to 2000, although the quantity of pollution reported as spilt fell significantly.



NOTES

The UK continental shelf is an area of the North Sea that encompasses most of the offshore installations in UK waters. Data for 1996 do not distinguish between incidents on the UK continental shelf and in UK coastal waters.

Data for 1996 do no include the oil pollution caused by the *Sea Empress*, which ran aground in Milford Haven harbour in February 1996, spilling 15.9 million gallons (72,000 tonnes) of crude oil.

Source: National Audit Office, using data from ACOPS

Measurement of outcomes is hampered by:

- **The difficulty of tracking and measuring the effects of pollution**. For example, the 44,000 gallons of oil spilt in the UK Zone in 2000 is likely to have caused some damage to marine life and to some coastline, even though much of this oil was dispersed by natural processes, but measurement of these effects is very difficult. Only the most obvious adverse impacts will be recorded. For example, the ACOPS database records that no incidents affected wildlife in 2000.
- **Working through others**. Local authorities or port and harbour authorities deal with the majority of incidents. Although the Agency helps these bodies with their contingency planning and preparations and monitors their handling of incidents, it does not record the outcomes, or assess their performance, to the same extent that it does for incidents in which it is directly involved.

Measuring Agency performance

3.4 In the absence of measures to gauge the outcomes from its counter-pollution activities, the Agency has adopted a set of published service standards to evaluate its operational performance, including three relating to responding to incidents **(Figure 19)**.

19 Service standards relevant to the Agency's performance in responding to pollution incidents

Three of the Agency's service standards are relevant to its counter-pollution activities.

- Respond to 999 telephone calls and maritime distress signals immediately.
- All helicopters to be ready to proceed:
  - by day, within 15 minutes of notification to scramble, in order to arrive at the scene of an incident up to 40 nautical miles from the UK coast within 1 hour of notification; and
  - by night, within 45 minutes of notification to scramble, in order to arrive at the scene of an incident up to 100 nautical miles from the UK coast within 2 hours of notification.
- Coastguard will arrive at an incident within 30 minutes of a response unit being activated.

Source: Maritime and Coastguard Agency

3.5 None of these standards, however, relates directly to the deployment of key counter-pollution resources. There are, however, performance criteria for the mobilisation of dispersant spraying and surveillance aircraft, Emergency Towing Vessels and counter-pollution equipment, all of which are managed under contract **(Figure 20)**.

20 Performance criteria for the mobilisation of key counter-pollution resources managed under contract

There are several performance criteria concerning the mobilisation of key counter-pollution resources.

Aerial spraying

Flying times to forward operating bases

Flying times vary between aircraft bases at Coventry and Inverness and other airports around the country used as bases for dispersant spraying operations:

- Minimum of 16 minutes from Inverness to Aberdeen.
- Maximum of 2 hours and 15 minutes from Coventry to Sumburgh on the Shetland Islands.
- Average 50 minutes.

Readiness to spray

Aircraft must be on scene ready to spray within 6 hours of call-out, anywhere within 50 miles of the UK coast.

Aerial surveillance

Standby time

- 30 minutes during the day and 2 hours at night.

Emergency Towing Vessels

Standby time

- 30 minutes notice at anchor or alongside a berth
- Immediate readiness when at sea

Time taken to arrive at location of incident

Subject to weather conditions, it would take a vessel:

- At least 10 hours to reach its boundary, at economical speed.
- 6 to 7 hours to reach its boundary, at full speed.

Counter-pollution equipment

Mobilisation of equipment for at-sea and shoreline clean up

- Contractors must be able to start mobilising equipment within half an hour of call out during normal office hours and, outside office hours, within one hour for at-sea equipment and within two hours for shoreline clean up equipment.
- The first equipment for at-sea clean up must be on its way within one hour of call out during office hours, and within two hours at all other times.

Time taken for at-sea clean up equipment and operators to reach site

- Equipment must be able to reach any part of the UK mainland within 12 hours of leaving the equipment stockpile.
- A minimum team of 8 people (for at-sea equipment) and 6 people (for shoreline equipment) must be at the scene of the incident to operate the equipment during the first 24 hours.

Source: National Audit Office

3.6 We sought to assess the Agency's performance against these criteria. However, there was a lack of data to measure performance in practice:

- The Agency has not had to deploy aerial spraying aircraft since it was established in 1998, and mobilising the aircraft on an exercise to test response times would be expensive (£6,000 an hour, for a minimum of 2 hours). There are therefore no data on real or fictional incidents to assess the performance of the new aerial spraying aircraft.
- The Agency records on its management information systems all of the cases where it tasks an Emergency Towing Vessel. Since the fourth ETV came into operation in October 2001, an ETV has been tasked on 64 occasions. However, 51 of these cases involved non-urgent tasks, such as standing by or escorting a vessel through a shipping lane or to or from port, where the ETVs were instructed to proceed at economical speed to their destinations. The other 13 cases involved urgent tasks, requiring the ETVs to proceed at full speed. The Agency does not, however, record how long the ETVs took to arrive at their destinations. There are therefore insufficient data to measure this aspect of ETV performance in practice.
- The Agency requires contractors to keep a log showing the times when counter-pollution equipment is called out, when mobilisation starts and when the equipment arrives on site. The Agency reviews contractors' performance as part of its cost recovery work. However, it has not carried out a formal analysis to demonstrate that contractors have met the mobilisation targets set out in their contracts.

3.7 Although the Agency has not collected data on all aspects of its operational performance in responding to and dealing with incidents, either the Agency or a contractor appointed by the Agency produces a report after each incident in which the Agency deploys some of its resources, setting out how well the Agency performed and whether any aspects could be improved. The Agency does not, however, use these reports to record in its management information systems the volume of pollution that it has prevented or the effects of pollution that it has mitigated in responding to incidents. We examined reports on six incidents that the Agency responded to over the period March 1999 to November 2001 (Appendix 4). None of the incidents happened in a port or harbour, and all required a national response. We found that:

- **Successful outcomes were secured:** in three of the incidents (the *Gudermes*, the *Coastal Bay* and the *Lysfoss*), the pollution occurred at the start of the incident and the Agency could do nothing to stop this pollution. In the other three cases, the Agency helped prevent marine pollution from taking place in the days that followed.
- **The Agency adopted a range of counter-pollution measures:** the mobilisation of key counter-pollution personnel and aerial surveillance aircraft were consistent features of the six incidents. However, the Agency drew on a range of other resources depending on the nature and risks posed by the incidents. For example: Coastguard helicopters were used to winch crew to safety from the *Multitank Ascania*, which was on fire; booms and other equipment were deployed to contain the risk of oil pollution to fish farms in the area of the *Lysfoss* incident; the Agency's Chemical Strike Team was deployed to advise on appropriate chemical response measures in the case of the *Norwegian Dream*; and the Agency deployed an Emergency Towing Vessel to stand by whilst escorting the *Gudermes* to safe anchorage. These cases illustrate the breadth of resources that the Agency uses to deal with pollution incidents.
- **The Agency took sensible precautionary action:** in two cases (the *Gudermes* and the *Coastal Bay*), the Agency took appropriate steps - mobilising equipment and personnel - to ensure that it would have been ready to respond had the incidents become more serious. In both cases, the Agency expended only a limited amount of its resources and was able to recover almost all of its costs from the vessels' owners, demonstrating the reasonableness of the Agency's response.
- **Lessons were learned and applied, but more could be done:** the Agency identified what worked well and any aspects that could be improved. However, the evaluation reports pointed out that in some key respects the Agency could do more to ensure that action is taken to improve how incidents are dealt with in future **(Figure 21 overleaf)**.

Ensuring that the polluter pays

Does the Agency recover the costs of dealing with pollution incidents?

3.8 The Agency recognises that the taxpayer should not have to pay for the costs of dealing with pollution incidents, and that the persons or bodies responsible for causing the incidents should meet the costs, in accordance with the "polluter pays" principle. The Agency has a policy of using its best endeavours to recover all of the costs that it reasonably incurs in dealing with an actual or threatened pollution incident. Where recovery of costs is delayed through no fault of the Agency, the Agency also seeks repayment of interest on the monies due. Local authorities, commercial companies and individuals affected by a pollution incident may make their own claims against polluters.

21 Areas of incident response requiring further improvement

There are areas of incident response that require further improvement.

Dealing with ship-to-ship chemical transfer

- The *Multitank Ascania* was the first incident in Europe that involved ship-to-ship transfer of chemicals. There is scope for the Agency to issue a code of best practice on ship-to-ship chemical transfer to ensure that lessons are learned for future cases.

Ensuring that vessels' owners and masters do not take unilateral action without Agency agreement

- In the case of the *Norwegian Dream* and *Ever Decent* in August 1999, the owners of one of the vessels brought Dutch salvors and fire-fighting crew on to the vessel to extinguish a fire, without the Agency's agreement.

Ensuring that Marine Casualty Officers are equipped and at the ready at all times

- The *Gudermes* incident showed that surveyors could respond more quickly to incidents by having the necessary equipment at the ready to respond to an incident at any time. Kit and equipment bags should be available to the 10 surveyors who have recently been appointed Marine Casualty Officers by April 2003.

Source: National Audit Office

3.9 The Agency has pursued claims for all 26 incidents that it has dealt with since it was established in April 1998. It has also pursued the 9 claims that it inherited from the former Department of the Environment, Transport and the Regions. **Figure 22** shows that the Agency has recovered some 90 per cent of its costs in the 23 claims that it has settled, or 84 per cent when the 7 ongoing cases over a year old are included; in 5 of these 7 cases, the Agency faces difficulties in recovering claims worth some £625,000. By March 2002, there were 12 ongoing cases worth some £1.2 million.

3.10 Almost all of the £1.7 million written-off or abandoned was on the *Sea Empress* case. We examined the Agency's handling of the *Sea Empress* claim and progress on the 12 ongoing claims.

3.11 In the *Sea Empress* case, the Department and the Agency engaged in protracted and detailed negotiations with the International Oil Pollution Compensation (IOPC) Fund, which administers the international oil pollution compensation regime, claiming some £11.4 million for costs incurred in dealing with the incident. Other parties affected by the incident made their own claims for compensation. The Department and the Agency settled their claim for £9.7 million, plus a further £3 million in interest. They abandoned £1.7 million (15 per cent) of their claim primarily because of a lack of supporting documentation and the hire or charter of vessels at rates that were too high to be accepted by the IOPC Fund **(Figure 23)**.

3.12 Although the *Sea Empress* incident happened before the Agency was set up in April 1998, the case highlighted key lessons that the Agency has learned. In particular, the Agency:

- has adopted robust procedures for recording costs incurred whilst dealing with pollution incidents and for preventing duplication of claims;
- sources any charter vessels through independent brokers at rates laid down by the insurers and salvors of vessels, and therefore acceptable to the IOPC Fund, and compares these rates with the rates being offered by member states of the Bonn Agreement, to ensure that the rates are reasonable; and
- clarified the items that may be included in cost recovery claims, excluding items such as public relations costs and research and development costs (which were included in the *Sea Empress* claim).

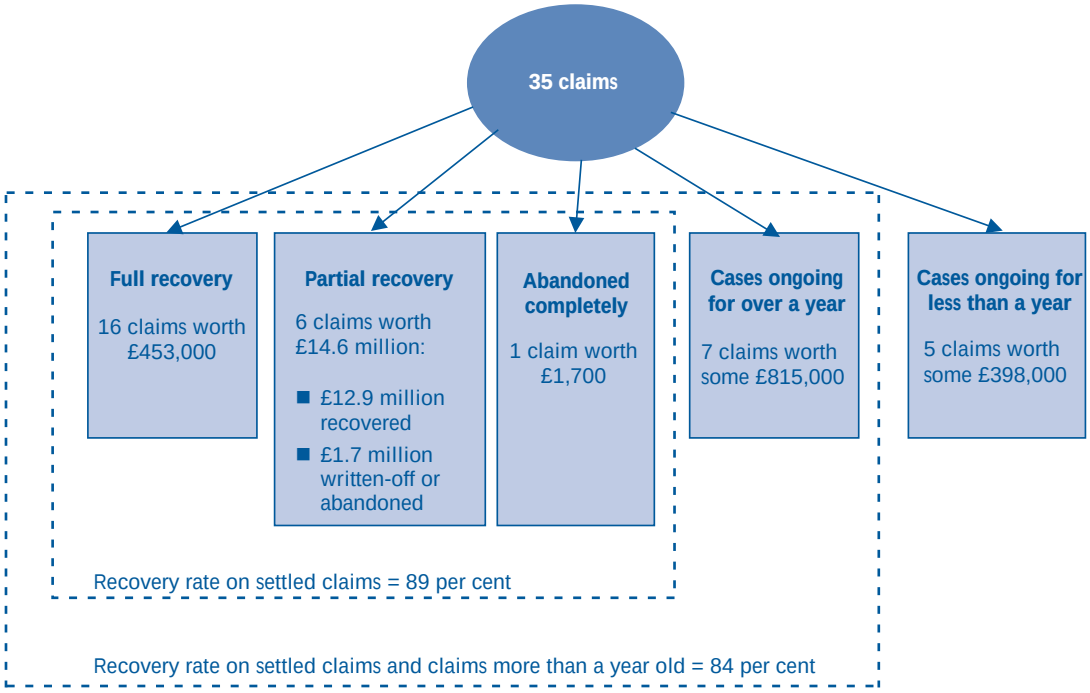
3.13 More recently, the Agency has also adopted a policy of agreeing with the insurers of vessels, during the course of a pollution incident, a Letter of Undertaking (LOU) by which the insurers irrevocably undertake to agree to pay the Agency's claims within an agreed time period, provided those claims are supported by the necessary documentation. These agreements provide the Agency with financial security as it deals with pollution incidents, precluding the need for the Agency to arrest or detain vessels as security against its claims. The Agency has agreed an LOU in each of the last six incidents in which it has been involved.

3.14 The other 12 cases illustrate difficulties that the Agency faces in seeking the speedy recovery of its costs:

- **Delays in compiling claims:** it can take a long time for the Agency to compile a claim. For example, it took the Agency eight months to issue its claims in two cases - the *Multitank Ascania* and the *Lagik*. At the time of our testing in November 2001, the Agency had still not issued claims in another five cases that were then between six months and over a year old; the Agency eventually issued four of these claims between December 2001 and March 2002, up to 17 months after the incidents took place. In two of these cases, the Agency delayed the compilation of its claims whilst it considered legal and financial issues, concerning foreign ownership of vessels and the use of "pay to be paid" insurance policies by "one ship companies" (see below). In other cases the Agency has to pay for any external contractors used on an incident before seeking recovery. However, in the case of the *Erika*, the contractor invoiced the Agency in April 2000 and the Agency did not seek recovery of these costs from

22 Cost recovery claims since April 1998

The Agency has recovered over £13.3 million in full or partial settlement of 22 claims, writing off or abandoning £1.7 million, and is pursuing 12 outstanding claims worth £1.2 million.



Source: National Audit Office

the French authorities until three months later; and the Agency did not issue a claim for its own internal costs until September 2001, 21 months after the incident took place in December 1999.

- **Limited international compensation arrangements:** under an international system of compulsory insurance, the Agency may claim compensation from the insurers of the vessels where the pollution has been caused by tankers' cargoes of crude, or heavy fuel, oil. There are, however, no international compensation schemes in force for spills of other types of oil, of hazardous substances or of fuel carried as bunkers from other types of ship or for spills from offshore installations; UK maritime legislation or civil common law applies in these cases. Only two of the 11 on-going cases involved oil tankers and were therefore covered by international compensation schemes. International conventions on liability and compensation arrangements for pollution by hazardous and noxious substances and for pollution by bunker oil were agreed in 1996 and 2001 respectively. The UK government is leading a working group at the International Maritime Organisation, looking at the implementation of the convention on hazardous and noxious substances perhaps by 2006. The Department is waiting for the next Shipping Bill to pass through Parliament to bring the bunker oil convention into UK law. However, there are no shipping bills currently in the forward legislative programme.

23 Key elements of the £1.7 million abandoned on the *Sea Empress* claim

The Department and the Agency abandoned £1.7 million of their Sea Empress claim for a variety of reasons, primarily because of a lack of supporting documentation and the hire or charter of vessels at rates that were too high to be accepted by the IOPC Fund.

Amount abandoned	Reason for abandonment
£670,848	Lack of supporting documentation.
£609,488	Hire/charter rates unacceptably high.
£292,744	Inclusion of items that did not contribute to the clean up operation and that were therefore inadmissible.
£104,894	Duplication of invoices already paid by the IOPC Fund.
£1,677,974	

Source: Department of Transport, Local Government and the Regions

- **"Pay to be paid" insurance policies:** in addition to, or instead of pursuing claims against vessel owners, the Agency may make claims against the insurers of the vessels. However, the insurers of three of the vessels in our review - the *Multitank Ascania*, the *Sonia* and the *Lagik* - operated "pay to be paid" indemnity insurance policies, which meant that they were only liable for a claim once it had been paid by the owners of the vessel. The Agency could therefore not go directly to the insurers for compensation, but had to seek recovery from vessel owners. In one of these cases, the owners disputed liability and refused to pay the Agency's claim, requiring the Agency to go to court to recover its costs. In the other two cases, the owners had been a "one ship company" until their respective vessels had been scrapped and therefore had no other assets that could be used or arrested to pay the Agency's claims.

- **"One ship companies":** the Agency usually pursues its claims against the owners of a vessel. However, the owners of the *Sonia* and the *Lagik* were "one ship companies", which meant that, after these ships were wrecked and scrapped, they had no other registered assets that the Agency could pursue in settlement of its claims. The Agency told us that there has been a growth in the number of "one ship companies" in recent years, as a means of avoiding the full impact of maritime authorities' powers of arrest. Authorities may arrest vessels involved in pollution incidents or their sister ships, as security against their claims for compensation. "One ship companies" do not have any sister ships that authorities can either seek to arrest or pursue as assets in settlement of their claims. The financial gains from exercising powers of arrest are further limited where ships are wrecked and have only a scrap value. Authorities have no powers to seize cargoes as security. The 1999 International Convention on Arrest of Ships is intended to strengthen the existing 1952 Arrest Convention, by allowing authorities to arrest and re-arrest a ship until the full amount of security obtained equals the value of any pollution claim. However, as yet, not enough states have ratified the new Convention to bring it into force and the Government are considering whether they should ratify it. In particular, the new Convention does not address the problem of "one ship companies".

Multitank Ascania (a Tuvalu-registered chemical tanker), March 1999

Caught fire on the Pentland Firth, presenting a threat of significant pollution from the vessel's cargo of 70 tonnes of fuel oil and the 20 tonnes of diesel oil carried as bunkers, compounded by its cargo of 1,750 tonnes of vinyl acetate and an imminent risk of explosion.

- The owners had **"pay to be paid"** insurance cover, which meant that the Agency was not entitled to claim against the insurer, but had to claim instead against the owners.
- However, the owners disputed the Agency's claim of £153,000. They argued that, in the **absence of compensation arrangements for pollution by hazardous and noxious substances**, only the costs of dealing with the oil pollution threat were admissible and that the Agency had mostly responded to the chemical threat rather than the threat of oil pollution.
- The National Audit Office reviewed this case and concluded that the threat of oil pollution was real and that the Agency's actions were reasonable in response to the threat of significant oil pollution. The Agency will take the owners to court in October 2002, seeking full recovery of its claim, plus costs and interest.

Sonia (a St Vincent and Grenadine-registered grain carrier), September 1999

Took seawater into its engine room and was in danger of sinking 2 miles off the Isle of Wight, with 450 tonnes of fuel oil and 120 tonnes of diesel oil on board.

- The vessel was towed into Southampton docks, where it was arrested to obtain security for claims from the owners of the cargo; these claims were subsequently settled. However, the Agency did not arrest the ship as security for its own claim, and the vessel was towed to Spain where it was sold for scrap.
- The Liberian owners of the vessel were a **"one ship company"** that did not have any other assets after the *Sonia* was scrapped and therefore were unlikely to be able to pay the claim. The insurers also operated a **"pay to be paid"** policy. In view of these constraints and the legal costs of mounting a court case, the Agency is taking legal advice on how best to proceed with this case.

Lagik (an Antigua and Barbuda-registered cargo vessel), December 2000

Ran aground across the River Nene outside the Port of Sutton Bridge in Lincolnshire, carrying 27,000 litres of diesel oil, 1,600 litres of lubricating oil, 400 litres of hydraulic oil and 2,300 tonnes of steel. As the tide went out, the vessel broke its back, releasing up to 4,000 litres of oil and completely blocking the River.

- The Secretary of State's Representative (SOSREP) issued a Direction to the owners of the vessel to unload and discharge all oils and cargo from the vessel and appoint salvors to remove the vessel so that it no longer presented a pollution risk. The vessel's owners did not comply with the Direction, which was a criminal offence, and abandoned the vessel. However, the owners were German, and were therefore **outside the UK's jurisdiction**. The owners also disputed liability for the incident, arguing that the incident was due to negligence on the part of the harbourmaster, the river pilot and the port authority.
- The owners were a **"one ship company"** that did not have any other assets after the *Lagik* had been wrecked, and were therefore unlikely to be able to pay the claim. The insurers also operated a **"pay to be paid"** policy.
- The Agency has entered into an innovative agreement with Fenland District Council, the owners of the port in which the incident took place, and the Council's insurers. Under the agreement, the Council's insurers are seeking full cost recovery from the vessel's insurers. The Agency will be entitled to around 20 per cent of any monies recovered, against its claim of £222,000.

Does the Agency prosecute offenders for pollution incidents?

3.15 The Agency has a policy of prosecuting offenders for significant breaches of marine pollution legislation that threatened, or have caused, significant pollution. In deciding on whether to prosecute, the Agency considers whether there is sufficient evidence and whether prosecution is in the public interest, in accordance with the *Code for Crown Prosecutors* published by the Director of Public Prosecutions. The Agency has a dedicated Enforcement Unit to investigate significant breaches and, where approved by the Secretary of State, take legal action.

3.16 **Figure 24** shows that the Agency has brought prosecutions in 3 of the 26 incidents (see paragraph 3.9) that it has dealt with since it was established in 1998. None of these was for a pollution offence; all 3 prosecutions were for unsafe operation of the vessels concerned.

3.17 Of the other 23 incidents, 15 were outside the Agency's normal jurisdiction:

- three involved pollution from offshore installations. The agency assisted the Department of Trade and Industry, which regulates the offshore industry, in the successful prosecution of one of these cases;
- six occurred inside ports (which ports and harbours have the necessary powers to prosecute and which the Agency therefore does not normally prosecute); and
- five involved foreign vessels outside UK waters and one involved pollution from a land-based oil refinery, all of which were outside the Agency's jurisdiction.

3.18 Of the other eight cases, three were subject to ongoing investigations as at the end of March 2002. No further action has been taken on the other five cases:

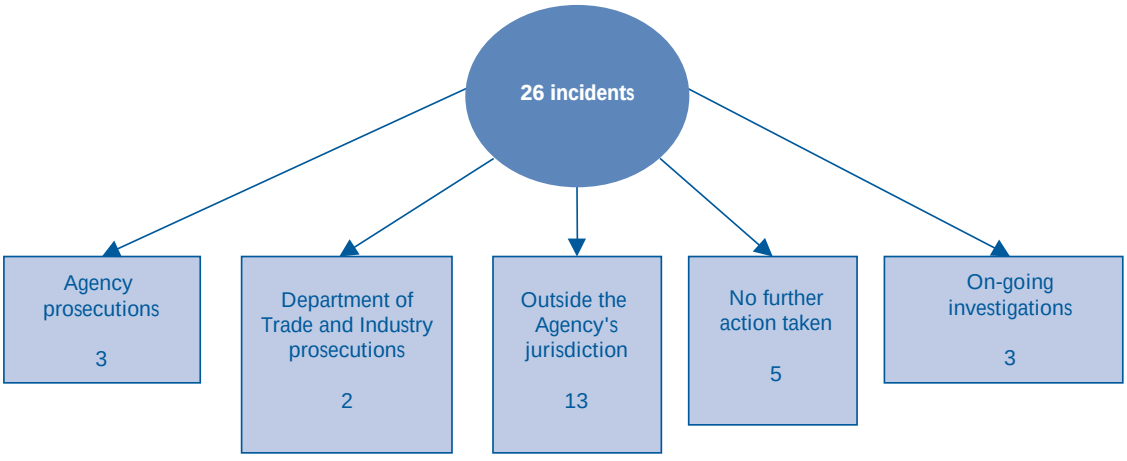
- in three of these, no oil pollution occurred and there was no significant breach of maritime legislation; and
- in another two there was no charge to answer, the pollution having been caused either by mechanical failure or damage to the vessel, which are statutory defences against prosecution.

3.19 In two of the cases that occurred inside port limits and in one of the ongoing cases, although all three involved pollution, the Agency could not prosecute for pollution offences because of limitations in the Merchant Shipping legislation:

- The pollution occurred landward of the baseline designating the start of the UK's 12-mile territorial waters; the Merchant Shipping Prevention of Oil Pollution Regulations 1996 do not apply to discharges in these areas around the UK coast **(see the blue shaded areas in Figure 25)**.
- Nor was prosecution possible under the Merchant Shipping Act 1995 because the masters of the vessels took reasonable steps to reduce or stop the pollution after their vessels had been damaged, which is a statutory defence against prosecution under the Act. Such a defence applies irrespective of whether the damage occurred through negligence.

24 Outcome of investigations into the 26 pollution incidents involving the Agency since April 1998

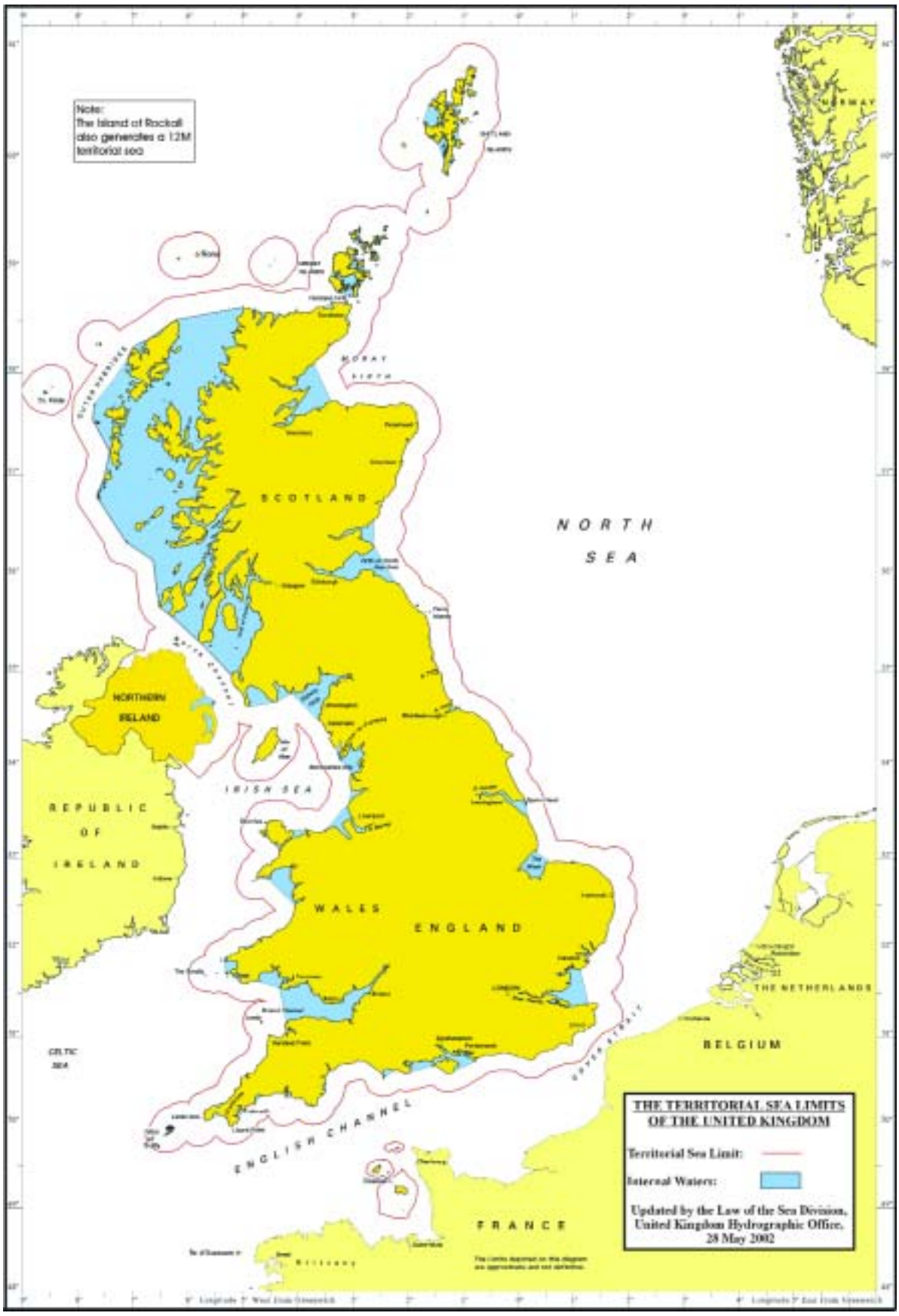
The 26 incidents in which the Agency has been involved since April 1998 have resulted in five successful prosecutions by the Agency or the Department of Trade and Industry. However, in 5 cases, no further action was taken after investigation.



Source: National Audit Office

25 Areas landward of the baseline designating the start of the UK's 12- mile territorial waters, that are not covered by the UK's oil pollution regulations

Major areas around the UK coast (shaded in blue) are not covered by the Merchant Shipping Prevention of Oil Pollution Regulations 1996 because they are landward of the baseline designating the start of the UK's 12-mile territorial waters.



Source: United Kingdom Hydrographic Office (UKHO)

3.20 In addition to incidents in which the Agency becomes directly involved, there are around 700 incidents reported to it each year. Most are from offshore installations, occur in port or harbour areas, or are from unknown sources. In the first two types of case, it would fall to the Department of Trade and Industry or the port or harbour authority, respectively, to prosecute the offenders. Where pollution is from an unknown source, however, prosecution is impossible. The Agency therefore focuses its enforcement work on reported incidents at sea, involving a vessel, and where there appears to have been a significant breach of marine pollution legislation. The Agency aims to investigate all such reported incidents.

3.21 Since 1999, the Agency has investigated 34 such cases **(Figure 26)**. It sought and achieved prosecutions in five cases and issued an Official Caution or Letter of Concern in another two cases, after deciding that it would not be in the public interest to prosecute. Five cases were the responsibility of another maritime authority or UK local authority. By March 2002 there were three ongoing investigations. In another 19 cases, no further action by the Agency was possible or warranted:

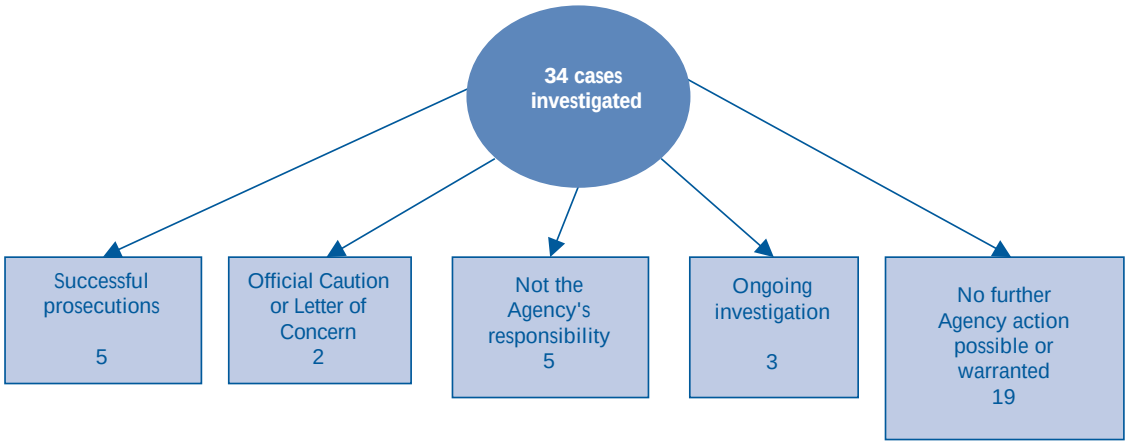
- 13 cases were dropped because there was insufficient evidence. Where oil slicks are reported to the Agency, collection of samples to trace offenders is not practical at sea and, in the absence of such evidence, the Agency needs to have clear photographic evidence of the vessel in the act of polluting to prove who is responsible for the pollution;
- in five cases there was no charge to answer: in two of these cases, the vessels' owners were rectifying a mechanical failure that caused the pollution, which is a statutory defence against prosecution; in two cases, the Agency found that the pollution incidents involved permissible discharges; and the fifth case was a minor incident not warranting any further action by the Agency; and
- in one further case pollution occurred when a vessel hit an island as it was leaving port. The island was landward of the baseline designating the start of the UK's 12-mile territorial waters, where the Merchant Shipping Prevention of Oil Pollution Regulations 1996 do not apply (see paragraph 3.19 above). The incident occurred off the coast of Scotland. The Agency therefore made a full report to the Procurator Fiscal for him to consider prosecution of the master for unsafe operation of the vessel. However, Scottish law requires corroboration of evidence in order to achieve a successful prosecution. Corroboration was not available, so the Procurator Fiscal decided not to pursue the prosecution.

3.22 The Agency achieved convictions for pollution offences in all five cases that it took to court **(Figure 27)**. Court cases took place between two months and a year after the date of the incidents. In magistrates' courts, fines for pollution offences can be up to £250,000. The owners of the *Sirte Star* were initially fined the maximum amount, although the fine was later reduced to £25,000 on appeal on the grounds that the level of the fine was not commensurate with the pollution offence. In all five cases, the Agency prosecuted the owners of the vessels rather than the officers or crew, in line with the Agency's policy of prosecuting the owners or operators of vessels where possible and only prosecuting ships' officers where they are personally culpable.

3.23 Ports and harbours have the necessary powers to prosecute for pollution offences that occur in their waters. The Agency therefore does not normally prosecute in such cases (see paragraph 3.17). Neither the Agency nor the Department know the extent to which ports use their powers or the number and seriousness of pollution offences that are not being prosecuted. However, amongst the three ongoing investigations summarised in Figure 26, the Agency is bringing a prosecution in one case against the owners of a vessel that discharged 155 tonnes of diesel oil and kerosene into the waters of a port in September 2001, where the port authority declined to prosecute. The Department recognises that there needs to be a clear agreement about the respective responsibilities of the Agency and ports and harbours for enforcing marine legislation, including counter-pollution regulations, in ports and the circumstances under which ports and harbours will bring prosecutions. The Department hopes to reach an agreement with the ports industry by December 2002.

26 Outcome of investigations of significant reported pollution incidents, 1999 to 2001

The 34 significant reported pollution incidents investigated by the Agency over the period 1999 to 2001 resulted in the Agency pursuing five prosecutions and issuing an Official Caution or a Letter of Concern in two further cases. However, in 19 cases, no further Agency action was possible or warranted.



Source: Maritime and Coastguard Agency

27 Prosecutions by the Agency, 1999-2001

Luckyman (a Cypriot bulk carrier), June 1998

18-mile oil slick spotted 40 miles off the coast of Wick, Scotland, by a Dutch coastguard aircraft.

The vessel's owners were fined £7,500 plus £1,000 costs, in January 1999.

Liliane J (a UK fishing vessel), January 1999

A Dutch coastguard aircraft spotted this fishing vessel discharging an oily mixture into the sea forming a **slick approximately 9 kilometres long**, and only 12 miles off shore.

The vessel's owners were fined £9,000 plus £1,000, in March 1999.

Sirte Star (St. Vincent and the Grenadines cargo vessel), April 1999

Spotted by a Dutch surveillance aircraft after the vessel had discharged a **3 mile oil slick** off the Norfolk coast.

The vessel's owners were fined £250,000 plus £1,200 costs, in September 1999. The fine was later reduced to £25,000, on appeal.

Crystal Rubino (an Italian chemical tanker), August 1999

Spotted by fisheries surveillance aircraft, operated by the Department for Environment, Food and Rural Affairs, as the vessel was **discharging tank washings in water less than 25 metres deep** - the minimum permissible depth for this type of discharge.

The vessel's owners were fined £18,500 plus £2,500 costs, in July 2000.

Stena Alexita (a Norwegian shuttle tanker), June 2000

Spotted by the Scottish Fisheries Protection Agency's surveillance aircraft trailing a **3.5-mile long slick**. Investigations concluded that **about 1.5 tonnes of oily water had been pumped overboard** during a routine operation when there was a breakdown in the ship's procedures. The vessel's owners were fined £7,000 plus £3,000 costs, in November 2000.

Appendix 1 Key legislation relating to pollution from ships

The Merchant Shipping Act 1995

This Act is the primary piece of UK legislation governing pollution from ships, incorporating the International Convention on Oil Pollution Preparedness, Response and Co-operation 1990 (OPRC) and the International Convention for the Prevention of Pollution from Ships 1973, as modified by the Protocol of 1978 (MARPOL). Under the Merchant Shipping Act, the government has issued Statutory Instruments to implement these conventions, the main ones to be considered in this report being as follows:

The Merchant Shipping (Oil Pollution Preparedness, Response and Co-operation Convention) Regulations (Statutory Instrument 1998 No. 1056)

Oil pollution emergency plans

All operators of offshore installations in UK waters and designated areas and those UK ports, harbours and oil handling facilities that fall into the categories outlined below must prepare oil pollution emergency plans:

a) any harbour for which there is a statutory harbour authority having an annual turnover of more than £1 million;

b) any other harbour offering berths alongside, on buoys, or at anchor, to ships of over 400 Gross Tonnage or oil tankers over 150 Gross Tonnage;

c) any other harbour served a notice by the Secretary of State stating there is a significant risk of discharge of over 10 tonnes of oil; and

d) any other harbour served a notice by the Secretary of State stating it is in an area of significant environmental sensitivity, or an area in which discharges could cause significant economic damage.

The Statutory Instrument required these plans to be submitted to the Maritime and Coastguard Agency by August 1998 for its approval. New harbours, facilities and installations subject to the Regulations must submit a plan two months before operation commences. Where the Agency considers that a plan is not compatible with the National Contingency Plan or not appropriate for dealing with incidents, it may direct that the plan be altered accordingly.

Every harbour authority and operator must fully review its plan no later than 5 years after its submission and re-submit a new plan. A new plan must also be submitted within 3 months of a major change affecting an existing plan.

Reporting of pollution incidents

The master of a UK vessel must report any discharges of oil at sea. A harbourmaster who is aware of the presence of oil in the sea must report it to HM Coastguard. Any harbour authority, operator or person required to report a discharge who fails to comply is guilty of an offence.

The Merchant Shipping (Port Waste Reception Facilities) Regulations (Statutory Instrument 1997 No. 3018)

Port waste management facilities and plans

Every port, harbour, terminal, installation, marina, pier and jetty in the UK must:

- provide adequate facilities for the reception of oil residues and oily mixtures, noxious liquids and garbage from all ships that visit them; and
- be covered by a waste management plan, prepared in consultation with persons prescribed by the Secretary of State and in compliance with other requirements set out in Merchant Shipping Notice 1709.

Port and harbour authorities must submit their waste management plans to the Secretary of State for his approval.

Where it appears to the Secretary of State that a harbour has no waste facilities or inadequate waste facilities, he may direct the harbour authority to provide them. The Secretary of State may also direct the harbour authority to prepare a waste management plan.

Authorities were required to submit their initial waste management plans to the Maritime and Coastguard Agency by 30 September 1998, and submit revised plans at two-yearly intervals following formal approval of the plan.

The Merchant Shipping (Prevention of Oil Pollution) Regulations 1996 (Statutory Instrument 1996 No. 2154)

These Regulations lay down requirements concerning:

- survey and certification of vessels and keeping an oil record book on board vessels;
- controlling discharges of oil during vessel operations;
- the segregation of cargo;
- limiting the size, arrangement and subdivision of cargo tanks on oil tankers to minimise oil pollution due to damage to the side or bottom of tankers;
- the design and construction of oil tankers;
- offshore installations; and
- vessels' oil pollution emergency plans.

They also set out:

- powers to inspect and detain vessels and the penalties for pollution offences; and
- proceedings for pollution offences committed outside UK waters.

Appendix 2 Roles and responsibilities of key organisations involved in responding to pollution incidents

The National Contingency Plan sets out the roles and responsibilities of the many organisations that might be involved in responding to a pollution incident in UK waters:

Department for Transport, Local Government and the Regions (DTLR)

DTLR has policy responsibility for marine pollution from shipping. It also has policy responsibility for the ports industry. It is responsible for assessing the effectiveness of the Maritime and Coastguard Agency's approach to marine pollution incidents. The Department also has a Marine Accident Investigation Branch, responsible for investigating accidents involving, or occurring on board, UK registered ships or other ships using UK waters.

Maritime and Coastguard Agency (MCA)

The MCA is responsible for responding to maritime emergencies 24 hours a day and minimising the impact on UK interests when pollution occurs. The Agency is responsible for counter-pollution and clean up operations at sea, and for maintaining the UK Government's stockpiles of equipment. The Secretary of State's Representative (SOSREP) controls salvage operations involving the threat of significant pollution.

Department of Trade and Industry (DTI)

DTI is responsible for licensing exploration, and regulating development, of the UK's oil and gas resources, including prevention of oil pollution and environmental issues. It approves oil spill response plans for the offshore industry, subject to MCA advice on whether those plans deal adequately with marine pollution.

Department for Environment, Food and Rural Affairs (DEFRA)

DEFRA has responsibilities for protecting fisheries and the marine environment. It approves any dispersants or other oil treatment products used in waters in England and Wales. The Department's approval must be sought before any such products may be used in shallow or coastal waters; the Department also advises on their use in deeper waters.

Scottish Executive Environment and Rural Affairs Department (SEERAD)

SEERAD is responsible in Scotland for the protection of the marine environment and fisheries.

Environment Agency, the Scottish Environment Protection Agency and the Northern Ireland Environment and Heritage Service

The Environment Agency and the Scottish Environment Protection Agency are responsible for protecting the whole of the environment within UK controlled waters up to three miles off the UK coast. They regulate discharges to controlled waters, the disposal and management of waste and some coastal and estuary flood defences. Their equivalent in Northern Ireland is the Environment and Heritage Service, which also prepares local counter-pollution contingency plans and undertakes clean-up work in the same way that local authorities do in the UK.

Health and Safety Executive (HSE)

HSE is responsible for regulating health and safety on board vessels and on offshore installations. The Executive provides advice, support and information in the event of a major offshore emergency.

Meteorological Office

The Meteorological Office provides weather forecasts that enable the calculation of the likely wind drift and direction of pollution at sea.

Port and harbour authorities

Port and harbour authorities have a statutory duty to prepare for, and respond to, marine oil pollution incidents within their waters. If they cannot contain the incident using their own resources, they may rely on additional resources available through mutual support agreements with other port or harbour authorities, oil companies and local authorities, or through formal agreements with oil spill contracting companies as set out in their oil spill response contingency plans. They may also call upon the MCA for help.

Local authorities

Local authorities do not have a statutory duty to plan for, or carry out, shoreline clean-up after pollution incidents. They do have, however, a general duty to act in response to emergencies or disasters.

Ministry of Defence (MOD)

The MOD is responsible for dealing with pollution caused by naval or other MOD ships, wherever they might be, and with pollution within naval base waters. In other cases not involving MOD ships, the MOD may provide assistance to the MCA, such as equipment, reconnaissance and spraying ships, on a cost reimbursement basis. It may also provide equipment and personnel to shoreline local authorities to assist in dealing with shoreline pollution, again on a cost reimbursement basis.

Nature conservation organisations

Four organisations deal with nature conservation issues in Great Britain: English Nature, Countryside Council for Wales, Scottish Natural Heritage and the Joint Nature Conservation Committee. As part of a response to a marine pollution incident, these organisations work together through an Environment Group, providing advice to the MCA, ports and local authorities on the environmental impacts of a spill.

The oil industry

Major oil companies have resources for oil recovery and other counter-pollution operations. They might be able to provide tankers and other ships on charter to help with clean-up. They also have contingency plans for dealing with spills in their own oil terminals.

The International Oil Pollution Compensation Fund (IOPC Fund)

The IOPC Fund provides compensation, up to a limit, for pollution damage caused by persistent oil carried by tankers if, and to the extent that, compensation available from the ship owner is inadequate.

The International Tanker Owners Federation Limited (ITOPF)

ITOPF has technical experts to respond to marine oil spills anywhere in the world. Its principal role is to give advice on what counter-pollution operations are reasonable, including clean-up techniques to mitigate damage to the environment, normally at the request of ship owners.

The British Oil Spill Control Association (BOSCA)

BOSCA is the trade association that represents the oil response industry in the UK. Its members include equipment manufacturers, service contractors and consultants. They have expertise in oil pollution prevention, control and clean-up at sea, along coastlines and inland. BOSCA has a service contract with the MCA, for maintaining the national equipment database for use in spill incidents.

Other organisations that may have a role to play in responding to pollution incidents include:

- health authorities and NHS Trusts, who are responsible for responding to the public health aspects of pollution incidents;
- national park authorities whose boundaries include coastlines; and
- non-governmental organisations, such as the Royal Society for the Prevention of Cruelty to Animals (RSPCA) and the Royal Society for the Protection of Birds (RSPB).

Appendix 3 Study methodology

Our key methods	
Data analysis	We analysed data on: ■ Reported pollution incidents and volume of pollution recorded in the UK Pollution Control Zone over the period 1996 to 2000, using the database of the Advisory Committee on Protection of the Sea (ACOPS). ■ The probability of different sizes of oil and chemical spills occurring around the UK coast, using Agency data. ■ The Agency's reviews of oil spill contingency plans prepared by ports and harbours and offshore installations. ■ The location and timing of aerial surveillance flights over the nine geographical regions within the UK Pollution Control Zone. ■ The Agency's reviews of Port Waste Management Plans prepared by ports and harbours. ■ The status of local authority oil spill contingency plans, using the Agency's headquarters' database of 170 coastal authorities in England, Scotland and Wales. ■ The location and take up of the Agency's training courses on oil pollution, contingency planning and response for local authority managers. ■ The tasking of Emergency Towing Vessels by the Agency since the fourth ETV came into operation in October 2001. ■ Claims by the Agency to recover costs incurred in responding to pollution incidents, and investigations and prosecutions for pollution offences.
Review and testing of procedures	We visited the Agency's headquarters in Southampton, the four Principal Counter Pollution and Salvage Officers (PCPSOs) and Marine Offices in Aberdeen, Dover, Swansea and Great Yarmouth. We examined in particular: ■ the Agency's performance in compiling and pursuing claims for cost recovery; ■ the Agency's performance in prosecuting offenders; ■ the review and approval of oil spill contingency plans and Port Waste Management Plans by PCPSOs and Marine Surveyors respectively; and ■ information on visits to ports and harbours to observe exercises and review port waste management facilities.
Review of key documents and interviews with key staff	We interviewed key personnel and reviewed key documents in the relevant sections within the Agency.
Surveys of port and harbour authorities and coastal local authorities	We sent a questionnaire to all major ports and harbours around the UK and another one to all coastal local authorities to ascertain the extent to which they had plans and resources in place to deal with pollution incidents and their views on the Agency's counter-pollution activities.

Appendix 4 National Audit Office reviews of six major pollution incidents involving the Agency

Case 1:	Fire on board the *Multitank Ascania* (a Tuvalu-registered chemical tanker) in the Pentland Firth, March 1999
The Incident	Fire broke out as vessel was carrying 1,750 tonnes of vinyl acetate in the Pentland Firth. The ship's engines were shut down and the ship started to drift only a few miles from land. The fire meant a risk of explosion of the cargo, which could release toxic fumes, and the ship was also carrying 90 tonnes of fuel.
Outcome	No pollution occurred. The fire had been brought under control by the ship's own systems, but the Agency took action to bring the vessel to a safe haven where its cargo was successfully transferred to another vessel.
What Worked Well	■ This was the first time that the new SOSREP function was used in a real incident. ■ This was the first ship-to-ship transfer of chemicals in Europe involving a 'dead' ship. ■ Regular national training exercises (one of which took place only a few days before the incident) proved their worth in ensuring personnel could respond effectively to this incident.
What could be improved	■ More guidance needed on how to respond to chemical incidents, particularly the science of potential releases to the air. ■ Drawing up a code of best practice for ship-to-ship transfer of chemicals would ensure that the Agency learnt from its success in this case. ■ Proformas needed to be drawn up during the incident to deal with the administration of Temporary Exclusion Zones and Danger Areas.
What action has been taken	Proformas were drawn up to deal with Temporary Exclusion and were found to be useful in the *Ever Decent* incident a few months later.

Case 2:	Collision between the *Norwegian Dream* cruise ship and the *Ever Decent* container vessel off the Margate coast, August 1999
The Incident	The cruise ship and container vessel collided 20 miles north east of Margate in a slight sea with good visibility. The cruise ship suffered severe damage to her bow but was able to sail to port. The container ship suffered severe damage and assumed a significant list. A fire broke out on some of the containers on board, and some of the containers carried toxic and potentially explosive materials.
Outcome	The fire initially spread along the ship and toxic plumes were emitted into the air. The Agency oversaw the mobilisation of fire-fighting tugs and personnel, but the owners of the vessel brought Dutch salvors and fire-fighting personnel onto the vessel to extinguish the fire. The ship then sailed to Zeebrugge for repairs.
What Worked Well	■ The response was considered successful, particularly in terms of international and inter-departmental co-operation. It was also the first time that a Salvage Control Unit and Environment Group had been set up in response to an incident. ■ The integration of functions within the relatively new Agency was noted, in particular the use of surveyors to monitor on behalf of the SOSREP the work of the salvors. ■ The proformas to deal with Temporary Exclusion Zones recommended during the earlier *Multitank Ascania* incident were found to work well.

Case 2:	*Continued*
What could be improved	■ The ship's owners and master took some unilateral actions, without the agreement of the Agency. ■ There need to be improved measures for analysing oil composition quickly, either through sampling of vessels' cargoes or through information obtained from ports.
What action has been taken	The Agency has taken several steps to improve its analysis of oil composition. It has issued revised guidance and standard bottles for collecting samples, and for obtaining assay sheets on oil cargoes and bunkers from ship owners. It has also put in place call-off contracts to courier samples and results to/from laboratories and to analyse samples.

Case 3:	The grounding of the container ship *Coastal Bay* off Holyhead, July 2000
The Incident	This ship, carrying mixed containers and 71 tonnes of diesel oil, ran aground on a beach near Holyhead. The immediate impact resulted in the leakage of a small amount of the diesel oil. A concern was that the ship needed to be refloated before the high spring tides came to an end.
Outcome	Further pollution was avoided by discharging the remaining fuel to another tank. The Agency's remote sensing aircraft reported that only a light pollution sheen extended a small distance from the ship. Beach cleaning equipment was mobilised as a precautionary measure, but the ship was re-floated and towed to dock.
What Worked Well	The ship was successfully re-floated with no further pollution and the Agency response was integrated and served as a useful precursor before the national exercise in February 2001.
What could be improved	Digital charts should be made available. These had been requested a year before this incident took place.
What action has been taken	Since April 2001, the Agency has obtained electronic charts from the UK Hydrographic Office.

Case 4:	Collision involving the merchant tanker *Gudermes* in the Dover Strait, April 2001
The Incident	The merchant tanker *Gudermes* and a French fishing vessel collided in the Dover Strait. This resulted in a 6 by 2 metre gash on the *Gudermes'* side and her fuel oil cargo started to leak out. Up to 116 tonnes of fuel oil cargo were initially reported as lost.
Outcome	The Agency's surveillance aircraft estimated that around five tonnes of fuel oil cargo had been lost, though this was largely on the immediate impact, and that the oil was dispersing naturally and no further oil was lost. Although equipment and personnel were mobilised, no active counter-pollution measures were necessary.
What Worked Well	■ The Oil Spill Information System to predict any spill movement worked well with the small amount of oil pollution before it naturally dispersed. ■ Persuading the master of a damaged vessel to co-operate with the Agency rather than resort to the more time-consuming formal powers of direction was found to help achieve a more rapid response.
What could be improved	■ Surveyors could save time in responding to incidents by being equipped with bags of essential equipment to carry around at all times. ■ Procedures, such as Chapter 5 of the National Contingency Plan, should be translated into several different languages and shown to the vessel's master so he is fully aware of what is happening. ■ The potential of the advisory Environment Group was demonstrated, although its role as a strictly advisory body, with a clearly predefined membership, needed to be clarified.
What action has been taken	Recognising that its staff were increasingly having to deal with masters, crew and ship owners who did not speak English or whose English was poor, the Agency let a contract in January 2002 for interpreting services to be made available over the telephone.

Case 5:	Grounding of the container vessel *Lysfoss* in the northern region of the Sound of Mull, May 2001
The Incident	This ship ran aground in the northern region of the Sound of Mull, rupturing an oil tank. The ship was carrying 170 tonnes of fuel oil and some of its containers carried packaged chemicals.
Outcome	Some of the fuel oil leaked out upon impact, killing shellfish in a limited area and leading to minor oiling of the shoreline. Booms protected fish farms in the area and the oil dispersed naturally. Further minor amounts of oil were lost on refloating, but the remainder of the oil was pumped off and the ship towed away for repairs.
What Worked Well	The main pollution control measures were successful.
What could be improved	This was the first time that an Environment Group had been set up in Scotland, and the boundaries between the Agency's technical response and the purely advisory nature of the Group needed to be clarified.
What action has been taken	The Agency has issued detailed guidance on the purpose, scope and key tasks of the Environment Group. The guidance is available on the Agency's Internet website.

Case 6:	Explosion aboard the general cargo vessel *Bilbao* in the North Sea off the Kent coast, November 2001
The Incident	This ship, carrying 3,200 tonnes of ferrosilicon, suffered an explosion in her hold on passage from Norway to Spain, which left the forward section open to the elements. When exposed to moisture, ferrosilicon gives off flammable and toxic gases.
Outcome	The ship was taken into the Medway channel where the situation was stabilised. No pollution or further explosions occurred.
What Worked Well	No specific points are identified in the evaluation report.
What could be improved	■ It was difficult to obtain advice on the chemicals involved and to obtain gas measurement equipment. ■ More knowledge was needed on understanding and modelling gas plumes and potential air pollution from ships. ■ Information was not available on whether some of the Agency's stockpiled anti-pollution equipment was intrinsically safe for use here. ■ The Environment Group over-reacted and were unhelpful. The Group's remit and objectives needed to be kept tight and the working arrangements where an incident occurs in more than one Group's area needed to be clarified.
What action has been taken	As at January 2002, officers' equipment was being reviewed, consideration was being given to extending the call-off contract list to include advisors and equipment suppliers for specialised cargoes, and the Agency was auditing and cataloguing all stockpiled equipment for its intrinsic safety.

Appendix 5

Key results of National Audit Office surveys of port, harbour and local authorities

National Contingency Plan				
Do you understand the part your organisation plays in the National Contingency Plan?			**Yes**	**No**
Ports and harbours			74 (86%)	12 (14%)
Local authorities			87 (95%)	5 (5%)
Port and harbour oil spill contingency plans				
Did you already have an oil spill contingency plan before you were required to have one under UK maritime legislation?			**Yes**	**No**
			46 (53%)	41 (47%)
	Significantly	**Partially**	**Minimally**	**Not at all**
To what extent has your port had to change its oil spill contingency plan to meet the Agency's requirements?	25 (55%)	18 (39%)	2 (4%)	1 (2%)
To what extent do you agree or disagree with the following statements about the review and approval of your oil spill contingency plan?	**Strongly agree**	**Agree**	**Disagree**	**Strongly disagree**
The Agency's comments improved the quality of the plan.	4 (6%)	45 (69%)	14 (22%)	2 (3%)
Comments from other bodies we have consulted improved the quality of the plan.	5 (8%)	39 (64%)	13 (21%)	4 (7%)
Has your port or harbour carried out any exercises to test your oil spill contingency plan?			**Yes**	**No**
			45 (61%)	29 (39%)
Port and harbour waste management plans				
Did you already have a port waste management plan before you were required to have one under UK maritime legislation?			**Yes**	**No**
			33 (38%)	54 (62%)
Has the MCA reviewed and commented on your waste management plan?			80 (91%)	8 (9%)

Port and harbour waste management plans continued				
	Strongly agree	**Agree**	**Disagree**	**Strongly disagree**
MCA comments have improved the quality of our plan.	3 (4%)	40 (56%)	26 (36%)	3 (4%)
	Significantly	**Partially**	**Minimally**	**Not at all**
To what extent has your port had to improve its port waste management facilities to meet the requirements?	8 (15%)	21 (41%)	12 (23%)	11 (21%)

Appendix 6

Other National Audit Office recommendations for improving the Agency's counter-pollution activities

Our principal recommendations are set out in the Executive Summary. Other recommendations are as follows. The Agency should:

i) Strengthen its monitoring visits of ports and harbours to check their oil spill contingency planning exercises along the lines suggested in this report (paragraph 2.14, Figure 10).

ii) To enable proper review and follow-up of the work undertaken in checking ports' and harbours' oil spill contingency planning exercises, retain key information including changes recommended; disseminate common lessons from such exercises to all parties involved in oil spill contingency planning.

iii) Check on a six monthly basis that aerial surveillance aircraft are targeting areas of the UK Pollution Control Zone that pose the greatest risk and examine the case for the aircraft making more surveillance flights at night.

iv) Record and monitor contractors' performance against performance criteria whenever Emergency Towing Vessels, dispersant spraying and surveillance aircraft and counter-pollution equipment are put into operation.

v) Establish at a senior level a monitoring process to ensure that action is taken on the lessons learned from the Agency's own reviews of major incidents, and whether changes have been disseminated sufficiently to all relevant parties within and outside the Agency.

vi) Set a target for handling claims for future incidents (for example that such claims should be submitted within 6 months of the conclusion of the incident) and monitor performance against the target at a senior level (including current outstanding cost recovery claims).