

# Ship Surveys and Inspections

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL  
HC 338 Session 2000-2001: 23 March 2001



# executive summary & recommendations

- 1 In 1989 the passenger vessel *Marchioness* and the dredger *Bowbelle* collided on the River Thames. The *Marchioness* sank and 51 people lost their lives. In September 1999 the Deputy Prime Minister appointed Lord Justice Clarke to carry out a wide-ranging public inquiry into safety on the Thames and the circumstances surrounding the *Marchioness* disaster. In his interim report in December 1999, Lord Justice Clarke commented on the substantial changes that had occurred more generally in the field of ship safety over recent years, particularly developments in the ship surveys and inspections regime. He noted that no comprehensive external audit or assessment had been carried out of the regime since 1994 and recommended that the National Audit Office or some other suitable body should carry out such an audit. He suggested that this should encompass the survey and inspection of Class V passenger vessels and also extend to survey and inspection procedures in general. He did not make this recommendation because of concerns about the performance of the Maritime and Coastguard Agency - since April 1998, the principal body for enforcing ship safety standards in the UK. Rather, he recognised the importance that the public attached to the safety of transport systems, including shipping, and considered that every organisation should have its systems independently audited from time to time. This report is our response to Lord Justice Clarke's recommendation.



- 2 Our report focuses on the Maritime and Coastguard Agency (the Agency), an executive agency of the Department of the Environment, Transport and the Regions (the Department). The Agency is responsible for developing, promoting and enforcing high standards of marine safety in the UK; in particular, for surveying and inspecting UK-registered vessels and inspecting foreign vessels visiting UK ports. Surveys are carried out when vessels are built or when they transfer to the UK register, and periodically thereafter when safety certificates expire; inspections are spot checks targeted on particular ships and are selective in the safety aspects that they cover.
- 3 The Agency spends around £9 million a year carrying out its surveys and inspections and receives survey fees of some £5 million from vessel operators. This work is carried out by around 100 surveyors working in 16 marine offices around the UK; a further 60 surveyors are based in the Agency's Southampton headquarters. In addition, the Agency delegates 80 per cent of statutory survey work on UK vessels to classification societies, which verify compliance with international conventions in order for maritime authorities to issue statutory certification.



## The UK has one of the best safety records in the world, to which the Maritime and Coastguard Agency makes a major contribution

- 4 The safety record of British-registered vessels is one of the best in the world. Very few British vessels have been lost over the last ten years and deaths have been rare, except in the fishing industry. The Maritime and Coastguard Agency is one of the world's leading maritime authorities with a world-wide reputation for its professionalism and for the significant contribution that it makes towards improving ship safety. The Agency's international standing is particularly evident from the senior posts that its staff hold in international maritime bodies and from the training and technical assistance that the Agency provides to other maritime authorities around the world. The Agency's surveyors advise vessels' officers and crew on safety-related issues during their surveys and inspections. The Agency makes the results of its work available to other maritime authorities and classification societies around the world, while publicity also helps to deter unsafe shipping in UK waters.
- 5 The Agency also leads most other maritime authorities in prosecuting significant breaches of maritime legislation that have caused, or threatened, loss of life, serious injury, significant pollution or damage to property or the environment. It has its own Enforcement Unit to investigate reports of significant breaches and take legal action where appropriate. We looked at how other maritime authorities handled prosecutions. Few had enforcement units comparable to the Agency's. Industry representatives commended the Agency's policy on prosecutions, which helped to maintain the credibility of the UK's maritime legislation and presented a real deterrent against unsafe shipping.

## The Agency could nonetheless make a greater contribution by focusing more of its work where there is the greatest risk

- 6 The Agency has met its targets for the volume of inspections it carries out. Over 12,000 UK vessels are subject to the survey and inspection regime. The Agency agrees with the Department an annual target for the number of inspections of UK vessels, together with inspection targets for six categories of UK vessel and a seventh target for dangerous goods. In 1999-00, the Agency carried out 3,711 inspections, exceeding its target of 3,354. The Agency is also expected to meet an international target, set under the 1980 Paris Memorandum of Understanding (Paris MOU), of inspecting the equivalent of 25 per cent of the foreign ships that visit UK ports each year. It has exceeded this target in each of the past five years, inspecting over a quarter of the 7,000 foreign vessels visiting UK ports each year. It inspects more foreign vessels than all but one of the other 17 maritime authorities bound by the Memorandum.
- 7 However, the Agency has not been able to complete the development of a model to assess the risks posed by different types of UK vessel and to help it set its annual inspection targets. Nor does the Agency set out the other factors that influence its inspection targets. And, by setting targets for six broad categories of UK vessel, the Agency does not distinguish the riskiest types of vessel within those categories. The Agency has now applied the risk-based approach outlined in this report in its target setting process for 2001-02. It has also sub-divided its target categories for UK vessel inspections in order to distinguish the riskiest types of vessel, including a separate category for Class V passenger vessels.





- 8 In addition, there is scope to improve the targeting of inspections on individual vessels posing the greatest safety risk:
  - the Agency uses an internationally adopted system to assess the risks posed by individual foreign vessels using UK ports. The Agency is good at targeting the riskier vessels and better than many other maritime authorities. However, over half of its foreign vessel inspections are of the lowest risk vessels, while very few are of high risk vessels; and
  - surveyors select UK vessels for inspection based on local knowledge about vessels in their areas. The Agency is better at selecting the riskiest UK vessels than at selecting the riskiest foreign vessels. However, with a quarter of UK vessel inspections identifying no deficiencies, there is scope to improve the selection of UK vessels for inspection. In particular, the Agency should adopt a risk assessment system for selecting all UK vessels for inspection, along the lines of the one it uses for selecting foreign vessels that use UK ports.
- 9 Although Class V passenger vessels in particular now have one of the best safety records amongst the main types of vessels using UK waters, the number of unannounced inspections of such vessels has declined significantly over recent years. In 1999-00 the Agency made unannounced inspections of 39 per cent of the Class V fleet, appreciably less than the inspection rate of once a year reported by Lord Justice Clarke. In 1999-00 around half of the Agency's inspections of Class V vessels were carried out as part of the vessels' pre-arranged annual surveys. Although these inspections are still worth carrying out, they are not as valuable as unannounced inspections. And, with eight of the 16 marine offices inspecting less than half of the Class V passenger vessels in their areas, many such vessels are unlikely to be subject to an unannounced inspection.
- 10 Marine offices cover wide geographic areas and many ports are in remote parts of the country. Although the Agency does well in visiting some 185 ports and other locations around the country, some ports receive disproportionately high coverage while others are seldom visited despite their handling large volumes of traffic. Furthermore, surveyors rarely inspect vessels at weekends even though the shipping and fishing industries operate seven days a week. There is therefore a risk that unsafe vessels could minimise the chance of being inspected by using more remote ports and harbours, and by timing their arrivals and departures at weekends.



## Recommendations

11 The Agency should therefore:

- a) use a more risk-based approach to establish the number of inspections for different categories of vessel necessary to achieve the Agency's marine safety objectives, drawing as appropriate on its risk assessment model once this is completed;
- b) adopt a risk assessment system for selecting UK vessels for inspection, similar to the one it uses for selecting foreign vessels that use UK ports;
- c) whilst maintaining a credible level of deterrence at all times, shift more of its inspection work towards the riskier UK and foreign vessels and, where the additional costs are justified by vessels' potential risks, do more of its inspections at remote ports and at weekends; and
- d) clarify its policy on the number of Class V passenger vessel inspections each year and ensure that, as far as possible, such inspections are unannounced, rather than carried out as part of the vessels' pre-arranged annual surveys and that such vessels have a reasonable chance of being inspected wherever they are located.

## The Agency should give greater attention to human factors in ship safety

12 It is widely accepted that the vast majority of shipping accidents are attributable to human error and that the human element plays a part in virtually all accidents. Since the early 1990s, the Agency has been checking on the operational aspects of vessels, such as emergency preparedness, bridge procedures and cargo operations. The Agency now also applies an international standard - the International Safety Management (ISM) Code - which is being phased in to ensure the safe management and operation of all large merchant and passenger vessels using foreign ports. In addition, the Government has decided to introduce a domestic safety management system for all UK



passenger vessels from June 2001; over a third of the UK merchant fleet will then be covered by a statutory safety management system. The ISM Code will become mandatory from July 2002 for the 314 other large cargo vessels trading internationally, and the Agency anticipates that around half of the UK merchant fleet will then be covered. The Department and the Agency also aim to have in place by January 2002 a system by which a vessel's officers or crew may report safety deficiencies in confidence.

- 13 Despite the importance attached to introducing the ISM Code, the Agency could not demonstrate that enough of its inspection work looked at the human factors affecting the safe management and operation of vessels, rather than at vessels' equipment, appliances and structure. The vast majority of surveys and inspections take place while vessels are in port; very few are carried out while vessels are at sea. There are practical difficulties and additional costs associated with carrying out inspections while vessels are at sea; such inspections require surveyors to remain on board vessels until the next port of call and not all of their time is therefore productive. However, these inspections might bring extra benefits in ensuring the safe management and operation of vessels. Although some marine offices carry out incognito checks on vessels, the Agency does not have sufficient staff to carry out such checks on a routine basis and has no other means of gathering first hand intelligence, for example through surveillance of officers and crew when vessels are in port, about shortcomings in the management and operation of vessels. The Agency also needs to ensure that it has sufficient surveyors in each of its marine offices with the right skills and experience to undertake ISM surveys and inspections. And, the Agency's policy of requiring surveyors to ask the owners of vessels being surveyed overseas to arrange and pay for surveyors' travel and accommodation leaves surveyors' professional judgements open to question.



## Recommendations

**14** The Agency should therefore:

- a) assess whether it is giving sufficient attention to operational and management issues on board vessels and ensure that there are a sufficient number of fully qualified ISM surveyors in each of its marine offices;
- b) consider the case for carrying out a proportion of its inspections while vessels are at sea rather than in port, so that the management and operation of vessels can be observed and checked more directly;
- c) consider the case for gathering first hand intelligence about shortcomings in the management and operation of vessels through, for example, more incognito checks on board vessels and surveillance of officers and crew when vessels are in port; and
- d) discontinue its policy of asking owners to pay for the travel and accommodation costs associated with overseas surveys, and instead require Agency staff to arrange surveyors' travel and accommodation and recharge the costs to vessel owners as it does for survey fees.

## The Agency needs to modernise its information systems and improve the way that it manages knowledge within the organisation

**15** There is scope for the Agency to improve the information that it gathers and to make better use of the knowledge at its disposal to ensure its inspections are well-targeted:

- the Agency does not have central databases containing details about all UK vessels and their certificates that can be accessed by surveyors in marine offices. Information is held on local databases in the 16 marine offices, but this is incomplete and inaccurate and the databases are not linked so information cannot be shared between offices;
- the Agency needs to improve the guidance and advice that it provides to surveyors through its computer systems, particularly on aspects of maritime legislation that are open to interpretation. It has not issued its surveyors with aides memoir to help them focus their work on the right issues. Nor does it require surveyors to record the areas of the vessel that they have checked and found to be satisfactory; only deficiencies are recorded. Surveyors record findings in their own hand-written notebooks, so a great deal of useful information and knowledge is not shared or made best use of by the Agency; and
- the Agency also needs to upgrade its resource management system so that management can readily analyse how resources are being used nationally and in individual marine offices.

**16** The Agency has recognised that it needs to improve its management information systems and is developing an information management strategy intended to rationalise its disparate computer systems and provide better information. However, it is likely to be two to three years before new systems are fully in place.



- 17 The Agency also needs to establish systematic arrangements for ensuring that port authorities and harbour pilots provide its surveyors with complete and timely information about vessels arriving at and departing from their ports. Only one of the marine offices we visited had a system for ensuring that all of its ports provided the information required. The quality and scope of information available to surveyors therefore varied considerably across the offices. Nor did any offices retain information to show all of the vessels that had visited their ports and how they had assessed their risks. There was therefore no direct means of verifying that surveyors had selected vessels for inspection based on evidence about the risks that they posed.

## Recommendations

- 18 To improve its information systems and knowledge management the Agency should:
- a) provide surveyors in its marine offices with access to better information and support (for example, by establishing a central database of information on UK vessels and their certificates and by reviewing and clarifying its policy advice on the areas of marine legislation with which surveyors have most difficulty);
  - b) maintain better records of inspection checks and outcomes (for example, through aides memoir), to ensure surveyors focus on the right issues and record the reasons why they selected a vessel for inspection and all of the areas checked, whether found to be satisfactory or deficient;
  - c) regularly obtain data from marine offices (for example, on the average time taken for different survey types and on the risk profile of vessels inspected), to enable the Agency to benchmark the relative efficiency and effectiveness of offices, and to identify and disseminate good practice through the investigation of significant variations; and
  - d) obtain at each marine office complete, timely and consistent information from port authorities on vessels entering ports, and review periodically the basis on which each office has selected vessels for inspection to satisfy itself that inspections are well-targeted.

### Links to relevant Internet websites

- 19 For further information about this report, the Agency and maritime safety more generally, the following Internet websites might be of interest:

Organisation	Internet website
National Audit Office	<a href="http://www.nao.gov.uk">www.nao.gov.uk</a>
Maritime and Coastguard Agency	<a href="http://www.mcga.gov.uk">www.mcga.gov.uk</a>
Department of Environment, Transport and the Regions	
- Shipping	<a href="http://www.shipping.detr.gov.uk">www.shipping.detr.gov.uk</a>
- Maritime Statistics	<a href="http://www.transtat.detr.gov.uk/shipping">www.transtat.detr.gov.uk/shipping</a>
Marine Accident Investigation Branch	<a href="http://www.maib.detr.gov.uk">www.maib.detr.gov.uk</a>
European Commission - Maritime Transport	<a href="http://www.europa.eu.int/comm/transport/themes/maritime/english/mt_en.html">www.europa.eu.int/comm/transport/themes/maritime/english/mt_en.html</a>
International Maritime Organization	<a href="http://www.imo.org">www.imo.org</a>
Paris MOU	<a href="http://www.minvenw.nl/extdomein/parismou">www.minvenw.nl/extdomein/parismou</a>