

# Chapter 2 Quality of ships

## Introduction

2.1 Poor quality ships pose a safety threat to human lives, cargo and the marine environment. Examples of poor vessel quality include stress fractures, rust, insufficiently strong hatch covers, inadequate lighting, poorly maintained wires, machinery failure, and inadequate firefighting and lifesaving equipment. This chapter begins with a discussion of the relevant findings of the three previous parliamentary reports into ship safety, before outlining developments in ship quality and noting continuing problems.

2.2 The structural integrity of vessels depends on such factors as age, on board maintenance, the regularity of inspections and repairs, and loading and unloading practices.

2.3 Some vessels, such as bulk carriers, require attention as they are particularly vulnerable to structural problems. This is due to such factors as the following (Sub 1, *Submissions* pp. 24–5).

- Many bulk carriers are relatively old.
- Loading and unloading practices can cause stresses to the hull's structure. This problem can be intensified by a lack of knowledge by terminal operators and seafarers about each others practices and requirements.
- In the 1960s bulk carriers increased in size beyond the limits of operational experience and established design knowledge.
- The structure of bulk carriers tends to contain very little redundancy, meaning that all structural members are important and that when one is weakened that may create additional stresses on many other members. This makes it vital that structural integrity is maintained and corrosion is prevented.
- Some bulk cargoes, such as coal, are corrosive.
- Bulk carriers are difficult to survey effectively due to their size and design.

2.4 The committee heard evidence that important developments have been made and that vessel quality (particularly for bulk carriers) has improved.

## Previous parliamentary reports

2.5 *Ships of Shame—inquiry into ship safety* (1992) expressed strong concern about the quality of some of the vessels operating in Australian waters. Problems with construction and design were noted. These, along with flawed operational practices (see chapter 3 of this report), were said to be responsible for structural problems such as cracks and corrosion in ships (HORSCTCI 1992, pp. xv–xxi). The report also noted the existence of 'inadequate, deficient and poorly maintained safety and rescue equipment' (HORSCTCI 1992, p. ix).

2.6 These safety problems were found to be exacerbated by the practices of some of the players in the maritime chain of responsibility. Some problems and positive developments are discussed below.

## Flag states

2.7 The 1992 report noted that: 'The failure of some flag states to comply with international conventions is the major impediment to improving ship safety.' (HORSCTCI 1992, p. xviii) While the quality of International Maritime Organization (IMO) regulations was said to be adequate, some flag states chose, for commercial reasons, not to carry out their responsibilities under international maritime conventions (HORSCTCI 1992, p. ix).

2.8 This sentiment was repeated in the 1995 report, *Ships of Shame—A Sequel: Inquiry into ship safety*. That report noted that: 'The principal source of ships of shame continues to be Flag States which ignore their responsibilities under the maritime conventions they have ratified.' (HORSCTCI 1995, p. vii). That report also raised the issue of flag states which appoint a classification society to administer surveys and certification but fail to monitor and audit the society (HORSCTCI 1995, p. 25).

2.9 The 1995 report also noted that, of the three flag states with the highest number of ship losses in 1993, two of these had the fastest growing fleets (HORSCTCI 1995, p. 26).

2.10 The flag state is the country in which a ship is registered. The flag state undertakes responsibility for the implementation of international standards relating to that ship. There is supposed to be a genuine link between the ship and the flag state. The flag state is supposed to exercise effective jurisdiction over administrative, technical and social aspects of the ship's operation.

2.11 Traditionally, *national registers* (such as the Australian register) have operated according to strict nationality rules. However, increasingly, ships are registered in countries to which they have only a tenuous nationality link. These registers are intended to earn foreign currency for the country and may choose to impose minimal restrictions on the operation of their ships. Such registers are known as 'open registers' and 'flags of convenience'.

2.12 Some traditional maritime countries, such as Norway, have opened 'second registers' for ships involved in international trade. Second registers apply less onerous financial requirements.

2.13 The percentage of the world's fleet tonnage registered in a flag of convenience rose from 1 per cent in the 1940s to 30 per cent in the early 1990s (Toh and Phang 1993, p. 33). In 1993 flags of convenience accounted for nearly half of the world tonnage (William and Denton 1996, p. 2).

2.14 According to the Australian coordinator for the International Transport Workers' Federation Flag of Convenience Campaign, the existence of such registers is at the root of the shipping industry's safety problems. By being excused from the financial obligations imposed by other registers, these ships have an unfair advantage. This in turn places pressure on ships in traditional registers (Sub 17, *Submissions* p. 156). The Flag of Convenience Campaign has been in operation since 1948.

2.15 However, it is not clear that flags of convenience necessarily have low standards. The Marine Incident Investigation Unit within the Department of Workplace Relations and Small Business noted that in 1996 and 1997 of the thirty nine maritime incidents it investigated, only three incidents involved substandard ships. None of these was from a flag of convenience. Similarly, it noted that no one flag could be said to be over represented in Australian marine incidents (Sub 19.01, *Submissions* pp. 187–8).

## **Classification societies**

2.16 In Australia, six reputable classification societies are authorised by the Australian Maritime Safety Authority (AMSA) to perform certain statutory surveys and issue relevant certificates. These are all members of the International Association of Classification Societies (IACS).

2.17 Formed in 1968, IACS members classify over 60 per cent of the world's fleet by number, covering over 90 per cent of the world's merchant tonnage. They '...also act as authorised agents for well over 100 Flag Administrations in respect of statutory surveys and certification.' (Sub 21, *Submissions* p. 200)

2.18 Classification surveys (involving regular inspection of a ship's hull, fixtures and fittings) are essential for ensuring structural soundness. These can be avoided by shipowners transferring their ships from one classification society to another (particularly before special surveys which are held every five years). The 1995 report noted that IACS intended to prohibit the transfer of class for ships with identified deficiencies (HORSCTCI 1995, p. 23).

2.19 The 1992 report noted that the classification regime had facilitated the existence of substandard shipping (HORSCTCI 1992, pp. xvi–xvii).

2.20 The 1995 report noted that problems remained in the area of classification. These included the incidence of ships being detained relatively soon after their special survey (HORSCTCI 1995, p. 22).

2.21 However, the report acknowledged that progress had been made. This included action by IACS and the IMO intended to reduce the scope for transferring vessels between classification societies to avoid carrying out essential maintenance (HORSCTCI 1995, p. xiii).

2.22 In 1993 IACS introduced the Enhanced Survey Programme for tankers and bulk carriers. This led to '...improvements in surveying by virtue of pre-planning surveys, better access, better lighting, identification of particular areas of ships of concern and the availability of executive survey reports on board' (Sub 21, *Submissions* p. 200).

## **Insurance**

2.23 Some marine insurers provided cover for unsafe ships. However, due to losses, insurers were increasingly vetting ships (HORSCTCI 1992, pp. 30, 61–4). The 1992 report commented that: 'The unavailability of insurance for substandard ships has the potential to be a significant factor in eradicating ship safety problems.' (HORSCTCI 1992, p. 31)

2.24 The 1995 report noted that Australia was planning to introduce a requirement for visiting ships to prove that they were covered for civil liability (such as damage resulting from oil spills). Coverage for occupational injury, disability and death was not expected to be included (HORSCTCI 1995, p. 24).

## **Maintenance**

2.25 The 1992 report commented that the incidence of poorly maintained safety equipment on some ships was 'deplorable and dangerous' (HORSCTCI 1992, p. 37). This situation was also noted in the 1995 report (HORSCTCI 1995, p. 6).

2.26 The 1992 report noted that neglect of structural maintenance was a contributing factor to ship casualties. Of particular concern were hatch covers and coamings (metal erections to which the covers are attached and which prevent water or objects from falling into the hatch), hold brackets and webs, metal surfaces, and engines and machinery (HORSCTCI 1992, pp. 38–9).

## **Action by bulk loading terminals and charterers**

2.27 The 1992 report noted that some bulk loading terminals and charterers had begun to vet ships for vessel quality (HORSCTCI 1992, p. 72).

## **Developments**

2.28 The committee concurs with the claim of AMSA in its annual report that vessel quality has improved in recent years (AMSA 1997 (a), p. 23). This is particularly so for bulk carriers.

2.29 For example, the Bureau of Transport Economics (BTE) indicated that it was possible to conclude that the quality of bulk ships visiting Australia had improved since the early 1990s, and by the greatest extent on the iron ore routes where high quality ships are most required. Further, it argued that it was reasonable to conclude that AMSA's port state control was at least partially responsible for the improvement noted in the quality of bulk vessels (Sub 28, *Submissions* pp. 240–1).

2.30 The BTE found that in 1994 the major risk factors for a vessel were found to be the following (Sub 28, *Submissions* pp. 236–7):

- commodity (iron ore carries a higher risk than coal or grain)
- route (three routes—South Africa to Asia, Brazil to Asia, and Western Australia to North Europe—accounted for a disproportionately high percentage of incidents)
- age (old ships were generally found to be more incident prone)
- flag (some flags have a history of incidents)

2.31 The BTE study did not report on human factors influencing the safety of vessels.

2.32 In 1997 bulk ships visiting Australia tended to be newer than the average for the world fleet, and newer than in 1994. For ships on the high risk Western Australia to northern Europe route, average age had dropped dramatically from 10.5 years in 1994 to 6.1 years in 1997 (Sub 28, *Submissions* p. 239). The BTE noted that the trend towards newer bulk carriers visiting Australian ports '...is in direct contrast to the world fleet which is tending to become older.' (Sub 28, *Submissions* p. 241)

2.33 The proportion of ships visiting Australia that were registered with 'bad flags' declined from 26 per cent in 1994 to 23 per cent in 1997. For the Western Australia to northern Europe route, this proportion declined from 23 per cent to 17 per cent (Sub 28, *Submissions* p. 240). This position was supported by other industry players, as the following comments demonstrate.

2.34 Of the world situation, the International Chamber of Shipping wrote:

Statistical evidence suggests that the concentration of effort in recent years on eliminating substandard ships and unsatisfactory performance in general has had a real effect. Pollution figures continue to reduce, as do the figures for ship losses. After some years of increase with better targeting, port state control detentions appear to have peaked and to be slowly declining. The substandard ships still exist, but the pressure on them to be up-graded or scrapped steadily grows. (Sub 16, *Submissions* p. 150)

2.35 The Minerals Council of Australia and the National Bulk Commodities Group submitted that:

The quality of ships servicing Australia's trades has improved. This is a result of the conclusion and implementation of IMO instruments, the compliance of those instruments by the majority of flag states, port state control by AMSA and Australia's bulk cargo owners requiring ships to comply with IMO standards when arranging for the shipment of bulk cargoes. (Sub 20, *Submissions* p. 194)

2.36 The Queensland Coastal Pilot Service Pty Ltd commented that:

Statistics on detained vessels and anecdotal evidence from our pilots indicate there has been a considerable improvement in the quality of vessels trading to Australian ports. It is apparent from discussions with our pilots their greatest concern is with the competency and ability of watchkeeping officers and ship crews rather than shortcomings of the vessels themselves. (Sub 2, *Submissions* p. 61)

2.37 Australia's rigorous and highly regarded port state control program (see chapter 4 of this report) can take much of the credit for the improvement in vessel quality in Australian waters. At a global level, the shipping industry's concerted effort to improve the quality of ships has also been significant. The committee heard that the IMO, the classification societies and industry associations have all taken action to improve vessel quality since the last parliamentary inquiry. Some of these initiatives are discussed below.

## **International Maritime Organization**

2.38 The IMO's work in this area has been crucial because flag states have been identified as a potentially weak link in the chain of maritime responsibility (Sub 16, *Submissions* p. 151). Concern at the IMO at the low level of flag state compliance led to the establishment of the Flag State Implementation (FSI) subcommittee in 1992.

2.39 Issues of state sovereignty have meant that progress in this subcommittee has not been immediate. For example, AMSA noted that at a meeting of the FSI subcommittee in June 1998:

... after much opposition from a number of nations, it was agreed that a flag state self-assessment form would be developed and referred to its parent committee for approval. We in Australia expect that self-assessment form to come under considerable opposition in the parent committees in December this year at a meeting in London. It is by no means certain that the assessment form will go on. (*Transcripts*, p. 17)

2.40 Nevertheless the subcommittee provides an important forum in which to further the objective of encouraging flag states to fulfil their international obligations. AMSA continued that:

...it is a first step in terms of the IMO recognising that, for the IMO to have a long-term future, it must address the problem of flag state compliance. Without the flag states complying, some of the IMO conventions are not worth the paper they are written on. (*Transcripts*, p. 17)

2.41 As a member of the FSI subcommittee, Australia has been active in proposing measures to encourage compliance. For example, in 1996 Australia suggested that a new convention be adopted. This would '...clearly set out the responsibilities of flag states and would establish criteria against which their operation could be measured.' (Sub 1, *Submissions* p. 21).

2.42 Australia also argued that technical assistance should be available to flag states which take their responsibilities seriously but lack the resources to carry them out (Sub 1, *Submissions* p. 21). Australia noted that such assistance could be more effectively targeted if performance criteria were available. The subcommittee failed to reach consensus. Nevertheless, it did produce comprehensive (non binding) guidelines to assist flag states in meeting obligations imposed by international conventions (Sub 1, *Submissions* pp. 21–2).

2.43 AMSA went on to comment that the FSI subcommittee was having difficulty '... coming to terms with whether or not it has a political mandate or whether or not it is a technical committee' (*Transcripts*, pp. 23–4).

2.44 The IMO also added Chapter XII to the International Convention for the Safety of Life at Sea (SOLAS). The requirements are expected to come into force for new bulk carriers on 1 July 1999 and will be phased in for existing ships, commencing at 15 years of age. The measures are intended to improve the structural safety of bulk carriers, and address such issues as damage stability, structural strength, loading instruments, self unloaders and the enhanced survey program (Sub 1, *Submissions* p. 25).

## **Classification societies**

2.45 The International Association of Classification Societies (which classifies over 90 per cent of the world's fleet by tonnage and over 50 per cent of the world's fleet by number of vessels) has taken action to ensure the integrity of its members' processes.

2.46 IACS also suspended from full membership the Polish classification society [Polski Rejestr Statkow] because it failed to meet the society's standards (*Transcripts*, p. 17). It was readmitted as an associate member.

## Industry associations

2.47 The International Chamber of Shipping noted that it was considering developing guidelines on the selection of flag states (Sub 16, *Submissions* p. 151, *Transcripts*, p. 23).

## Continuing issues

2.48 The committee heard evidence that, despite these important developments, Australia's port state control program '...continues to identify a large number of ships with major deficiencies.' (Sub 1, *Submissions* p. 21) Together with continuing narrow margins in the shipping industry, this suggests that further vigilance is warranted.

## Classification

2.49 While progress had been made in this area, it was put to the committee that a problem remained in terms of ships not being covered by any classification society (*Transcripts*, pp. 63–5).

## Flag state compliance

2.50 Port state control is not a substitute for flag state control. The flag state has a responsibility to ensure that its ships are operated and maintained in a manner that minimises risk to seafarers, the marine environment and cargoes. While many flag states operate in a responsible manner, some flag states fail to meet their international obligations.

2.51 AMSA has been an active participant in the FSI subcommittee. It has promoted the development of a global culture of responsibility in which obligations and performance criteria are clearly set out, and flag states are assisted, where appropriate, to meet their responsibilities. This is an important role through which Australia can actively contribute to improving ship safety throughout the world.

### 2.52 **Recommendation 1**

**The committee recommends that the Commonwealth seeks to have the International Maritime Organization (IMO) give priority to the development of:**

- **effective means of ensuring that flag states meet their responsibilities under safety and pollution prevention conventions**
- **mechanisms for**
  - **flag states to demonstrate compliance**
  - **IMO to audit and publish regular lists of compliant states.**

## Maintenance

2.53 Continued high quality maintenance is essential if the quality of a vessel is to be maintained or improved. While age is one indicator of ship quality, regular maintenance (along with appropriate crewing) can allow a relatively old ship to meet a high standard of safety. For example, the International Transport Workers' Federation (ITF) purchased a 21 year old vessel for its Flag of Convenience Campaign. Properly crewed and maintained, such a vessel can operate safely (*Transcripts*, p. 22).

2.54 Where a ship has a smaller crew than was originally intended, inadequate maintenance can occur (*Transcripts*, p. 22). [This is not necessarily the case because a team can be brought to a ship specifically to carry out maintenance on a regular basis.] In a climate of narrow commercial margins and an ageing world fleet, it is important that priority is given to vessel maintenance.

## Insurance

2.55 The committee is concerned that ships visiting Australia do not always have sufficient Protection and Indemnity (P&I) insurance cover. P&I insurance covers a shipowner for a variety of matters, including loss of life and personal injury claims, damage to stationary objects, damage to the environment and the cost of raising wrecks (HORSCTCI 1992, p. 23). United Salvage and the New South Wales Government both argued that coverage for oil spills was imperative (Sub 26, *Submissions* p. 227, *Transcripts*, pp. 108–9).

2.56 Legislation to be introduced into the Commonwealth parliament will ensure that visiting ships will be covered for damage from oil spills. However, no such protection would be provided to injured or abandoned seafarers or the families of deceased seafarers. The ITF argued that these people should be protected (Sub 17, *Submissions* p. 158).

2.57 As expressed in chapter 6 of this report, the committee has grave concerns about the neglect and exploitation of seafarers. The committee believes that visiting ships should be compelled to ensure that seafarers and their families are protected in the event of accident, illness or death.

### 2.58 Recommendation 2

**The committee recommends that the Commonwealth expeditiously introduce legislation requiring ships visiting Australian ports to have protection and indemnity insurance.**

**Further, the committee recommends that this legislation also require that ships' crews are insured for occupational illness, injury, disability and death.**

## **Conclusion**

2.59 The committee notes the significant developments in vessel quality in Australian waters, particularly for bulk carriers. This improvement is due to the efforts of the Australian Maritime Safety Authority (AMSA) as well as a range of industry participants.

2.60 The committee is concerned that some flag states are still failing to undertake their international obligations, and supports AMSA's work in the International Maritime Organization's Flag State Implementation subcommittee. Other concerns include standards of maintenance and liability cover for ships visiting Australia, which for some need to be improved.

