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Ships of Shame

Inquiry into Ship Safety

Report from the House of Representatives
Standing Committee on Transport,
Communications and Infrastructure

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Cover photograph of *Kirki* provided courtesy of the Australian Maritime Safety Authority

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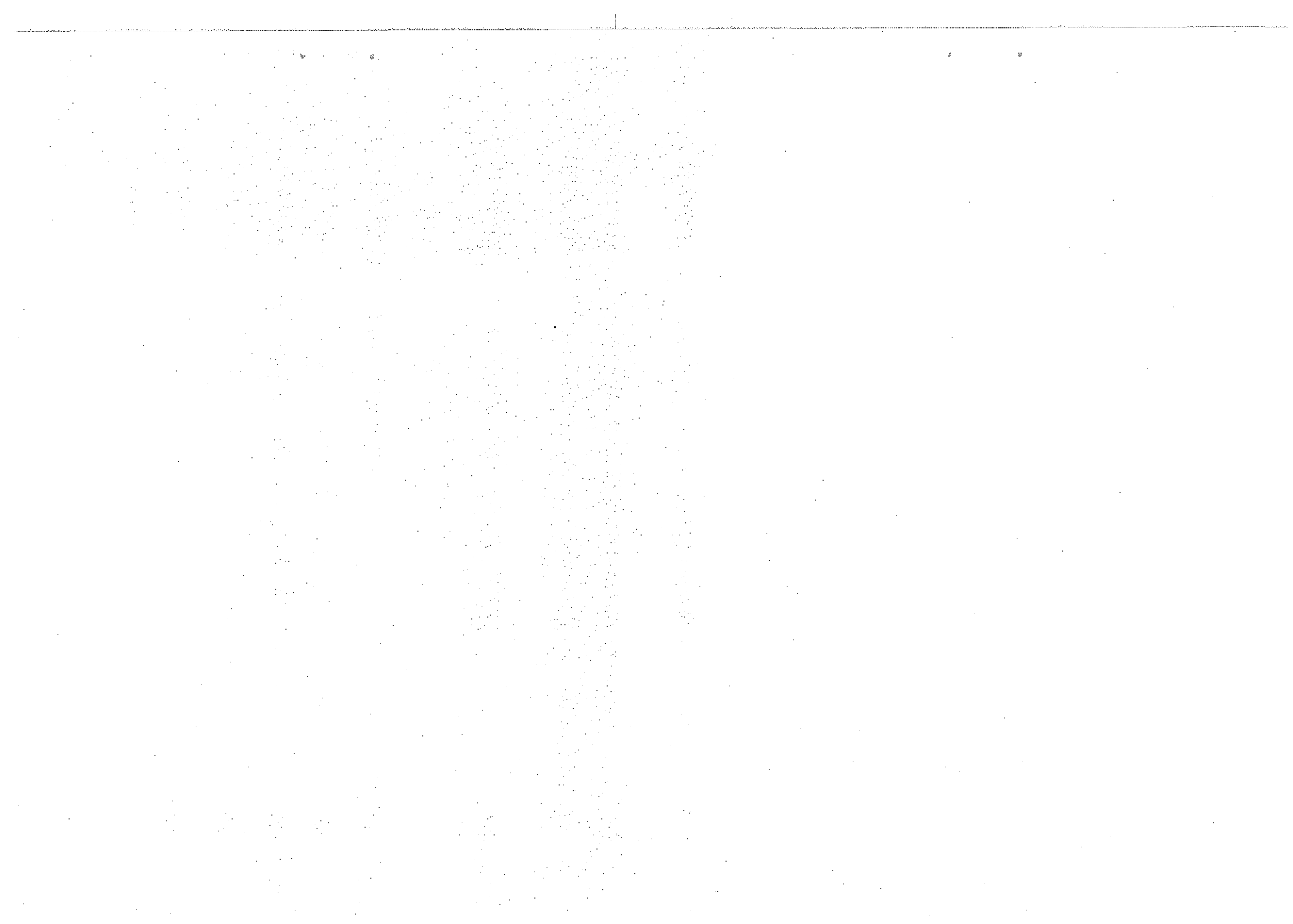


PREFACE

This report is about a minority of ships, bad ships, ships that endanger the lives of those who serve on them. Ships that are the source of major risks to the marine environment and marine facilities of the nations they visit. Ships on which seafarers are abused and exploited by officers and management alike. Ships that well deserve to be known as 'ships of shame'.

At the outset of the inquiry Committee members were generally aware that there were problems associated with some ships calling at Australian ports. They were not prepared for the sickening state of affairs associated with the operation of substandard ships that was revealed as the inquiry proceeded.

The Committee was told of:

- the operation of unseaworthy ships
- the use of poorly trained crews, crews with false qualification papers, or crews unable to communicate with each other or Australian pilots
- ships papers carrying false information
- classification societies providing inaccurate information on certificates
- flag states failing to carry out their responsibilities under international maritime conventions
- careless commercial practices by marine insurers
- inadequate, deficient and poorly maintained safety and rescue equipment
- classification societies that readily classed ships rejected by more reputable societies.
- beatings of sailors by ships' officers
- sexual abuse of young sailors
- crews being starved of food
- crew members being forced to sign dummy pay books indicating they had been paid much more than they actually received
- sailors being forced to work long overtime hours for which pay was refused
- crew members being denied telephone contact with home when family members have died
- sailors not being paid for several months and/or remittances not being made to their families at home
- sailors being denied medical attention
- officers regarding crew members as dispensable
- crew being denied basic toilet and laundry materials

An early witness summarised the scene accurately when he said, 'behind every substandard ship lies a substandard operator'.

Commercial pressure on ship operations and ship's masters quickly emerged as the major factor influencing the use of substandard ships and substandard practices.

The Committee sought to look beyond the narrow technical limits of ship design and ship building into the commercial and regulatory environment of bulk carrier shipping. A world one senior insurance executive cryptically described as, 'that murky world in which your Committee is delving'.

It is a world of too many ships that are over aged and under maintained chasing too little freight for too little return.

The problems, abuses, deficiencies and dangers associated with substandard shipping detailed to the Committee came as no surprise to the industry. Almost everyone seemed to be aware of them, almost no one was trying to assist the unfortunate seafarers. That is with the exception of seafarers unions and the Missions to Seamen, however, their limited efforts were hampered by threats of seafarers being blacklisted and intimidated by crewing agencies, ships officers, managers, owners and operators.

Like most industries international shipping is dollar driven, so the problems associated with substandard shipping must be sheeted home to the beneficiaries of those practices.

Those beneficiaries include:

- the flag states who accept ship registration fees and pay "lip service" to their international maritime obligations
- those classification societies who readily accept changes in class of vessels already rejected by reputable classification societies
- the classification societies who issue certificates which do not accord with a vessels true condition
- shipowners, operators and managers
- crewing and training agencies
- charterers, exporters and importers.

The ready availability of full information on ships offering for charter could have prevented some earlier crew and ship losses. The severe restrictions on this essential information are maintained under the cloak of 'commercial confidentiality'. It is in effect a conspiracy of silence that operates to cover up the abuses and deceptions associated with substandard shipping.

The establishment of easily accessible national and international ship information data banks by AMSA and IMO respectively should, at least, break the conspiracy of silence.

Evidence of widespread neglect of life saving appliances and procedures on bulk carriers indicates either a blind faith in unseaworthy vessels or a callous disregard for human life by ship owners, ship managers and charterers. It is a situation that should not be allowed to continue.

International pressure must be applied to flag states that do not carry out their international responsibilities. If they ratify conventions then they must perform the duties of those conventions. More frequent, consistent and more stringent port state inspections will raise the expectation of substandard ship operators that their vessels will be detected and detained.

The reality is that most deficiencies identified in port state inspections are deficiencies that with good housekeeping would never have developed.

Australia should adopt tougher measures in its own area of jurisdiction. It's positive participation in the regional port state proposal is welcome. Other measures need to be dealt with internationally and at IMO.

One thing is certain - unless substandard shipping is identified and removed, then much more drastic and disruptive measures will be forced on ship operators unilaterally. Other nations will follow the US example of imposing harsh penalties and maritime nations will walk away from IMO.

The end of this inquiry should see the beginning of a wider appreciation of the dangers and abuses of substandard shipping and an end to its practices.

To accelerate the process the Committee will initiate action in early 1993 to bring together all interested parties at a national and international level to consider the report, its recommendations and associated matters.

I thank my fellow subcommittee Members, Mr John Anderson MP, Mr Ewen Cameron MP, Mr Graeme Campbell MP and Mr Colin Hollis MP for their interest and assistance during the inquiry and in the preparation of the Committee's report. I would also like to thank Mr John Scott MP and Mr Russ Gorman MP for their valuable participation during the inquiry.

My appreciation goes to all who made submissions to the Committee and responded to the Committee's numerous requests for information. I particularly thank those international organisations for their participation and support. I also thank officers of the Australian Maritime Safety Authority for their assistance.

PETER MORRIS MHR
Chairman

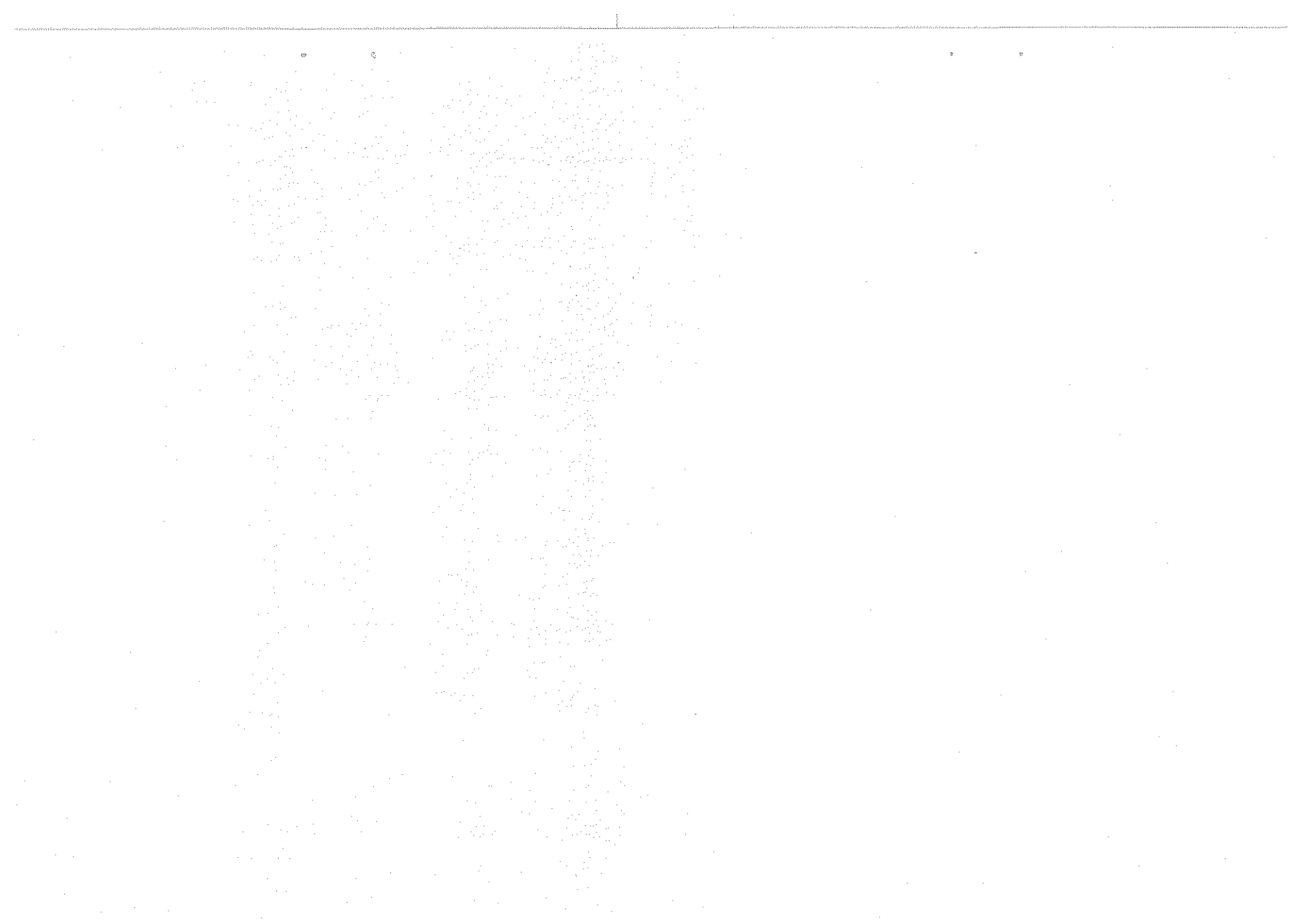
TERMS OF REFERENCE

To inquire into and report on the issue of ship safety at the national and international level, with particular reference to:

(a) The factors associated with recent vessel losses and incidents, particularly involving bulk carriers and tankers proceeding to and from Australian ports.

(b) The general standard of foreign vessels trading to Australia with particular reference to bulk carriers and tankers.

(c) The adequacy of the parameters established by international law and conventions for action by a port state in the inspection of foreign vessels.



OVERVIEW

1. The catalyst for the inquiry was the loss in close succession of six bulk carriers off the Western Australian coast between January 1990 and August 1991. During the inquiry it became clear that the loss of bulk carriers is a significant problem, posing considerable threat to the lives of seafarers, international trade and the marine environment.

2. As Australia is a major participant in the international bulk shipping trades, the loss of bulk carriers is an especially important consideration. The avoidable loss of life and property arising from shipping incidents is a matter for grave concern. Additionally, Australia has a vested interest in preventing pollution of its marine and coastal environments.

3. The Committee has received a considerable amount of evidence concerning cracks and corrosion in ships, loading and unloading practices, operational procedures and design and construction faults among many other factors. While these are obvious problems, they can also be considered symptomatic of more fundamental causes. In particular, the peculiar nature of the international shipping industry, the underlying economic base of international shipping and a breakdown in the regulatory effectiveness of flag states can be seen as fundamental problems.

4. There are many players in international shipping. They create a complex industry which is difficult to regulate. This complexity is an impediment to the application of generic solutions to ship safety problems.

5. Improvements to ship safety require a package approach rather than the application of a single prescriptive solution. An improvement in the effectiveness of the current system would appear to be the most promising of approaches to the problems identified in the inquiry.

6. The shipping industry is unusual in that organisations which are used to regulate the industry, classification societies, are also subject to market forces within the industry. Classification societies which are responsible for condition surveys have sought to maintain market share to remain commercially viable. Under these circumstances it is hardly surprising that the quality of class surveys has declined. A wide variance in the quality of classification societies allows irresponsible owners to avoid ship safety responsibilities.

7. Flag states also compete among themselves. The migration of ships from traditional flag states to 'flags of convenience' and second registries is a clear indication that ship owners will move to flag states which offer tax and investment incentives. The less stringent approach to ship inspections and compliance with IMO convention standards in some FOC states is also a lure to some ship owners to switch flag states. Indeed, the creation of second registries by Norway and France, among others, was a response to the growing popularity of 'flags of convenience'. The worrying aspect of this development is that many flag states have failed to ensure that ships on their registers comply with agreed international standards.

8. Insurance arrangements in international shipping are also unusual. There are three types of insurance. Hull and machinery underwriters insure against the loss of the actual ship. Cargo insurers insure against the loss of

cargo in the event of the loss of a ship. Protection and Indemnity Clubs (P&I) insure against damage and liability accruing to the owner in the event of loss or damage, for example, in the event of a major pollution incident.

9. The interesting thing about marine insurance over recent years is the dilatory nature of the industry's response to increased bulk carrier losses. While marine insurance has traditionally been profitable, recently insurance companies have sustained considerable losses. The insurance industry has now reacted to the loss situation and premium rates are currently rising rather dramatically and increased emphasis is being placed on ship management in the form of maintenance and crew standards.

10. A side effect of the push by insurance companies to regain earnings has been the failure to differentiate between good and bad quality tonnage. It has been argued that a fundamental change within the industry which would improve ship safety is the realignment of premiums to reflect the level of risk. In effect, rewarding good quality tonnage with lower insurance rates. If quality tonnage is not rewarded it reinforces the short term cost advantages of operating substandard vessels.

11. The international economic climate in combination with an excess of tonnage has created a situation where current freight rates are placing considerable pressure on ship operating costs and are insufficient to justify the maintenance of existing ships let alone the building of new ones. Consequently, the already old world fleet continues to age, further increasing the risk of ship loss.

12. International maritime operations are ostensibly conducted under the auspices of the International Maritime Organisation (IMO). The IMO has come under criticism during the inquiry for slow decision making procedures and lack of observation of its conventions. Keeping in mind that flag states are responsible for implementing IMO convention requirements within their registries, it would appear to be an unfair criticism of the IMO that it has been unable to enforce convention standards. The Committee has received evidence that the IMO convention standards are sufficient, the problem is non compliance with those standards.

13. The failure of some flag states to comply with international conventions is the major impediment to improving ship safety. The presence of some 'flags of convenience' and second registries, some of which have at best questionable surveying capability and administrative capacity, does not help the situation. It is clear to the Committee that while the principle responsibility for ship safety lies with flag states, the poor performance by some flag states will ensure that general standards of ship safety do not rise.

14. Considerable evidence was collected during the inquiry relating to the appropriate role for port state inspections. Port state inspections are carried out primarily to ensure that a ship's safety equipment meets international convention standards. If there are 'clear grounds' to believe that a ship does not meet the requirements of IMO conventions then a more detailed inspection may be undertaken. If hull repairs are required, the port state will call in the ship's classification society to supervise repairs.

15. There was little dispute during the inquiry that the port state inspection functions described above are acceptable. However, differing points of view were offered with regard to unilateral action by port states.

16. The most common factors associated with operational concerns are: the world economy, marine insurance, ship management, crewing, ship maintenance, vessel age, loading and unloading, marine pollution, construction and design and the ineffectiveness of the regulatory system.

17. The Committee has received volumes of evidence related to the crewing of ships. Lack of crew training and experience, the exploitation and abuse of ratings by ship owners and officers, the size of crews and the loss of crews are the issues which are of major concern.

18. The poor quality of crew training and lack of experience dominated the evidence received by the Committee. It became apparent that the crews of many bulk carriers are inexperienced and lack any formal training. The increasing use of crew members from non traditional maritime nations on very low wages was put forward as a major reason for the decline in crewing standards. This is not to suggest that nationality has anything to do with proficiency as a seaman, but rather the level of training available in these countries.

19. The treatment of many seamen from non traditional maritime countries by ship owners and operators was of considerable concern to the Committee. The Committee received evidence that on many occasions crew were underpaid and underfed with working and living conditions not meeting the minimums set down in ILO Convention 147. The Committee is of the opinion that abuse of crews is unacceptable and poses a threat to ship safety.

20. A further problem with crewing is the reduction in the size of crews operating ships. The reduction of crew size is, once again, an attempt to reduce the operating costs of ships. The Committee has received evidence that crew sizes approved by some flag states may have been reduced to the level where the crew would not be able to adequately cope with a disaster situation. This reduction in the size of crews in combination with the lack of experience and training of many crews poses a most serious threat to ship safety.

21. The reduction in the size of crews in association with a lack of training and experience and the lack of morale resulting from mistreatment has resulted in a low level of maintenance being undertaken on ships. It became clearly evident during the inquiry that a lack of routine ship maintenance is a major contributing factor to bulk carrier losses.

22. The Committee received conflicting evidence concerning loading and unloading practices with regard to bulk carriers. It appears to be the case that if proper loading and unloading practices are followed then they will not contribute to ship loss.

23. Ship design and construction has also been adversely effected by cost pressures. The increasing use of high tensile steel (HTS) received most attention during the inquiry. Ship construction with HTS involves less steel being used allowing a larger payload to be carried and reduced construction costs. While HTS is stronger than mild steel, it still corrodes at the same rate and the thinner HTS plates are prone to weakening earlier than mild steel plates. HTS has been blamed for structural failure in several vessels.

24. The Committee has also received evidence that cost pressures are adversely affecting construction methods.

25. While incidents involving oil tankers have recently received publicity, the *Kirki* for example, the Committee has not received a great deal of evidence concerning the operation of oil tankers. It is generally recognised that the condition of oil tankers is better than dry bulk carriers.

26. The Committee is concerned that such environmentally sensitive areas as the Great Barrier Reef are under threat from oil spills from tankers. The Committee recognises the action by the IMO in declaring the Great Barrier Reef a sensitive area, requiring ships passing through the reef to have a pilot. However, there are still many shipping incidents which occur in the reef area and the possibility of a major disaster is always present.

27. Access to survey history is difficult for some charterers. Easy availability of such information would reduce the probability of substandard tankers operating in Australian waters.

28. The Committee notes with interest the recent unilateral action by the USA in requiring oil tankers trading to the US to have a double hull by 2015. The Committee is undecided over the effectiveness of double hull tankers but views the development as a positive step toward improving the safety of oil tankers.

Recommendations

29. The Committee is concerned that action be taken to improve ship safety at both domestic and international levels and has made recommendations accordingly. Recommendations are aimed at improving the effectiveness of the IMO as a policy making organisation, improving Australia's port state control system, addressing the employment conditions and training of ships crews, reducing Australia's exposure to the risk of a serious pollution incident and increasing the relevance of marine incident investigation.

30. The Committee has made the following recommendations:

1. a) **Australia's representation at the International Maritime Organisation be strengthened by the inclusion of industry and trade delegates with relevant experience.**

   b) **The Australian Maritime Safety Authority meet the cost of the increased industry and trade union representation.**

   c) **The Australian Maritime Safety Authority consult with industry on the merit of appointing a permanent delegate to the International Maritime Organisation.**

2. The Secretary General of the IMO be authorised to initiate action in relation to matters of significance which arise between Council meetings at the request of a member State.

3. The Australian Government participate in and actively support at the International Maritime Organisation the following:

   a) That the Maritime Safety Committee urgently complete its inquiry into flag state compliance.

   b) That appropriate operating criteria for classification societies be devised and that only certificates from classification societies, including when a classification society acts as an agent for a flag state, which comply with those criteria be recognised as valid internationally.

   c) That IMO approve a 'seal of approval' to those classification societies meeting its set criteria.

   d) That an IMO representative participate in the International Association of Classification Societies Quality System Certification Scheme audit team.

4. a) The Australian Maritime Safety Authority have access to sufficient funds to increase the rate and effectiveness of Port State Control inspections to the level where it ceases to be viable for substandard shipping to call at Australian ports.

   b) The Australian Maritime Safety Authority not be required to pay a dividend to Government and that these funds be used to improve the effectiveness of the port state control function.

c) The Australian Maritime Safety Authority impose a penalty surcharge on substandard shipping to fund the increased level of operations generated by these vessels.

5. a) The Australian Maritime Safety Authority publish each month the results of its port state control inspections at each port.

b) This publication should include, the name of the ship on which defects are found, the nature of defects, the beneficial owner, the manager of the ship, classification society, flag state, the dates of the latest port state control and special survey inspections, type of charter, type of cargo, charterers and the relevant AMSA surveyor's name.

c) The Australian Maritime Safety Authority ensure that information is made available promptly to parties as specified in existing Marine Orders.

6. a) It be mandatory for dry bulk carriers entering Australian ports to carry a Survey History File consisting of all documents relating to a ship's structure which contains a history of port state control inspections, structural inspections and repairs or alterations.

b) The Survey History File should be available to both port state control and classification society surveyors.

c) Full information on the commercial chain from the beneficial owner to the cargo owner should be available to AMSA so that responsibility for pollution damage can be readily determined.

7. a) The International Maritime Organisation establish an international accreditation system for crew training and subsequent issuing of qualification certificates.

b) AMSA obtain samples of crew qualification certificates from each flag state to assist in determining the authenticity of documents sighted by AMSA surveyors.

8. The Australian Maritime Safety Authority, in conjunction with the Australian Maritime College, establish training courses and assessment criteria which will improve the consistency of inspection outcomes by ship surveyors.

9. All international shipping organisations adopt IMO Resolution A647(16) as the base standard of operation for all members.

10. a) The Federal Government examine means by which the level of Australian assistance to Asian and Pacific neighbours relating to crew training can be extended.

b) The Australian Maritime College explore opportunities to raise its profile as a maritime training institution to attract increased numbers of international students to the College and associated port based Technical and Further Education Colleges.

11. The Federal Government deny entry to ships which do not meet ILO 147 standards in relation to crew employment conditions from trading in Australian waters.

12. a) The Australian Maritime Safety Authority establish a comprehensive ship information data base.

b) The data base be made available to any party with a valid interest in ship safety.

c) The IMO establish a comprehensive international ship information data base which is available to any party with a valid interest in ship safety.

13. The Australian Government require proof of possession of adequate Protection and Indemnity insurance cover as a prior condition of entry of any foreign vessel into Australian ports.

14. a) The Minister for Shipping and Aviation Support initiate an independent review of the structure and operating procedures of the Marine Incident Investigation Unit with a view to improving the breadth and consistency of its investigations and reports.

b) The conclusions of the Marine Incident Investigation Unit investigations into marine incidents be more widely publicised throughout the shipping industry, including through industry and employee association publications similar to the practice followed by the Bureau of Air Safety Investigation.

CHAPTER 1
INTRODUCTION

1.1 On 21 July 1991 the bow section fell off the Greek registered oil tanker *Kirki* while enroute from the Arabian Gulf to Kwinana in Western Australia. The *Kirki* was loaded with approximately 82,660 tonnes of light crude oil and was positioned 55 miles off the Western Australian coastal centre of Cervantes. In the event, the ship did not sink and its crew was rescued.

1.2 This ship should have been structurally sound. It was in class with a reputable classification society and had been regularly inspected. Yet it suffered a major structural failure due to corrosion which had gone undetected by the classification society, the ship's managers, charterer and the crew. Consequently, the lives of the crew were put at risk and the coast of Western Australia and the marine environment faced a major pollution threat which was only narrowly averted.

1.3 Crew competence is also a problem, clearly illustrated by the *Sanko Harvest* striking an underground pinnacle off Esperance in south Western Australia, eventually sinking, and the Panamanian flagged *Jovian Loop*, a chemical products tanker, running aground on Unison Reef in the Great Barrier Reef.

1.4 Concern over the safety of foreign shipping has been growing in Australia for some time. Between January 1990 and August 1991, six bulk carriers sank after loading iron ore in northern Western Australia. Recently,

a seventh, the *Daeyanghoney*, has gone to the bottom with the loss of all hands. In fact, worldwide between 1988 and 1991, 47 dry bulk carriers sank with a loss of 381 lives and 2.6 m tonnes of cargo. In 1991 alone, 19 of these bulk carriers sank with a loss of 149 lives (Hill;1992). These figures are alarming because they go against the trend of declining losses amongst shipping as a whole. Details of dry bulk carrier losses are contained in Appendix 1.

1.5 It was this increased threat to the lives of seafarers and international trade as well as the threat of pollution to the marine environment that was the catalyst for this inquiry.

Terms of Reference and the Conduct of the Inquiry

1.6 Following an initiative from the Committee, the then Minister for Shipping and Aviation Support, Senator the Hon Bob Collins, wrote to the Committee on 10 December 1991 requesting that the Committee inquire into the matter of ship safety. The suggested terms of reference for the inquiry were as follows:

> **To inquire into and report on the issue of ship safety at the national and international level, with particular reference to:**
>
> **(a) The factors associated with recent vessel losses and incidents, particularly involving bulk carriers and tankers proceeding to and from Australian ports.**
>
> **(b) The general standard of foreign vessels trading to Australia with particular reference to bulk carriers and tankers.**
>
> **(c) The adequacy of the parameters established by international law and conventions for action by a port state in the inspection of foreign vessels.**

1.7 The inquiry was advertised nationally on 21 December 1991. In addition to advertising the inquiry, the Chairman wrote to a number of organisations in Australia and overseas associated with the international shipping industry inviting them to make submissions to the inquiry. A subcommittee of five members was appointed to conduct the inquiry.

1.8 The Committee received 69 submissions and took evidence at 11 public hearings - in Sydney, Melbourne, Dampier, Perth, Canberra, Newcastle, Launceston and Port Kembla. Inspections were carried out in Dampier, Newcastle, Port Kembla and Launceston.

1.9 Details of the conduct of the inquiry are at Appendix 2.

Scope of the Inquiry

1.10 Shipping is an international industry. It is an industry which is regulated through multilateral international agreements. The development of these agreements has evolved over the last 100 years, although there has always been a reticence on the part of some governments to impose regulation on shipping in case economic opportunity and competitiveness were threatened.

1.11 Regulation developed from what were national requirements. However, to ensure that competition took place under the same safety standards with their associated costs, international agreements were developed. The first agreement covering safety of life at sea to be ratified was negotiated in 1929, followed by a Load Line Convention in 1932 (House of Lords;1992A;51).

1.12 This international framework for the regulation of international shipping makes the task of inquiring into the industry particularly difficult. The safety issues are well known in the industry but the Committee was repeatedly told that the solutions can only be international. In other words there is little that Australia can do to influence change on its own. The Committee understands this opinion. However, Australia's dependence on safe, reliable shipping and its moral obligations associated with international maritime conventions require that Australia act in this area.

1.13 These conventions impose obligations on Australia in relation to loss of life, injury and the conditions under which ships' crews work. It is worth noting that while safety of life is the basis for an international convention, there is no systematic recording of data on deaths and injuries. Seamen only appear to be counted if they go down with a ship (Goss;1991:1).

1.14 There is widespread public interest in the environment within Australia. The potential for pollution of the marine and coastal environments by oil or other hazardous materials was a significant concern in the course of the inquiry. The cost of a major oil spill can be enormous, not just in terms of clean up, but also in terms of lost production in fishing and tourism industries. For example, the *Exxon Valdez* accident cost Exxon $US2 billion not including amounts covered by insurance and additional compensation payments have cost $US235 million up to early 1991 (Rose;1991:175).

1.15 Australia has accepted internationally the heavy responsibility to coordinate maritime search and rescue in an area covering more than one ninth of the world's surface (Appendix 3). As this responsibility can require major expenditure, it is in Australia's interest that shipping operates safely.

1.16 The Committee has concentrated its attention on dry bulk carriers and to a lesser extent on tankers. It is generally acknowledged by the shipping industry that there is a serious problem with bulk carriers, not only with the recent increasing losses, but also in the number suffering severe structural failure, but which do not sink. Given the increasing age of the world fleet the problem is likely to worsen before it improves.

1.17 This inquiry began because it appeared that there was no concerted response to the problem. The International Chamber of Shipping acknowledged this point in its 1991/1992 Annual Review when it said that, 'there is no denying that the shipping industry as a whole was very slow to react to the disturbing problem of the loss of bulk carriers and their crews'(p.8).

1.18 The situation pertaining to dry bulk carriers was neatly summed up in a paper given at a conference of the International Union of Marine Insurance in 1991:

> Economic pressures are keeping vessels in service longer and the age profile of the world bulk fleet is steadily worsening. Vessels in a weakened condition due to age and to wear and tear are literally falling apart on the high seas due to a lethal combination of heavy cargo and heavy weather which puts an intolerable strain on the vessel's structure. (Hill;1991:1)

1.19 Of the 47 bulk carriers lost between 1988 and 1991, 80% suffered structural failure and 92% of them were over 10 years old. Interestingly, the majority were classed by members of the International Association of Classification Societies. It is obvious that there are fundamental problems with the management and operation of bulk carriers. These ships are the workhorses of the sea and it is these ships that are causing the greatest concern.

1.20 The Committee has sought to examine the role that Australia plays as a port state and how those responsibilities might be carried out more effectively. It has also examined the international aspects of shipping and the role that Australia can play to influence improvements to the international maritime conventions and the observation of those conventions.

Structure of the Report

1.21 In the next chapter we describe the various players within the international shipping industry. This is intended to provide an understanding of the regulatory and commercial aspects of the industry and an appreciation of the relationships between the two.

1.22 Chapter 3 examines the underlying causes of the decline in ship safety, particularly with regard to bulk carriers. The issues covered in this chapter were all raised in the course of the inquiry including:

. commercial pressure on shipowners and other industry players

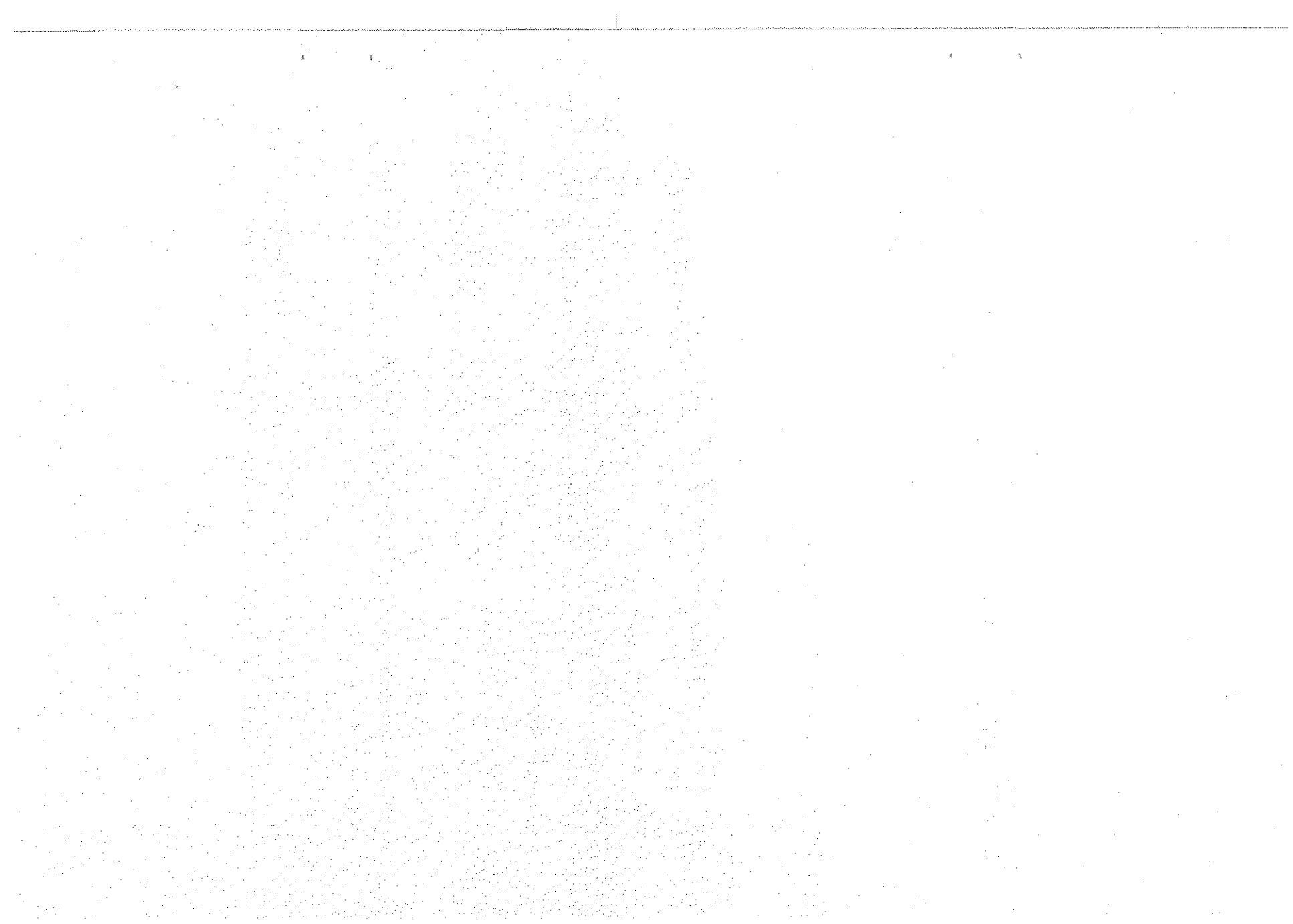
. the wider impact of those commercial pressure and resultant attempts to cut costs

. fundamental problems that have emerged in terms of ship management.

1.23 Chapter 4 focuses on the regulatory regime and seeming inability of the international regulatory system to cope with the problems that have arisen through the recession in the shipping industry and the resultant serious decline in standards.

1.24 Chapter 5 examines recent initiatives from industry to address some of the issues dealt with in Chapter 3.

1.25 Chapter 6 outlines the Committee's conclusions and recommendations.



CHAPTER 2
THE PLAYERS AND THE INDUSTRY

The Participants in the Shipping Industry Concerned with Maritime Safety

2.1 The international shipping industry can be viewed from several perspectives. Firstly, the business of owning and operating vessels and moving freight together with associated activities of marine insurance, construction and maintenance. Second, the business of owning a vessel and chartering it out for others to operate. Third, the regulatory framework both at international and national levels dealing primarily with the safety of life and property and the protection of the marine environment.

2.2 The regulatory and commercial activities of international shipping are not mutually exclusive, in fact they are inextricably linked and change in one will impact on the other. It is important to understand these relationships in order to gain an appreciation of the issues raised in the inquiry.

International Maritime Organisation

2.3 The International Maritime Organisation (IMO) is a specialised agency of the United Nations. IMO has a small secretariat and performs the majority of its technical work through the Maritime Safety Committee (MSC) and the Marine Environment Protection Committee (MEPC).

Membership of the principal committees and subcommittees is open to any member state of the IMO.

2.4 The fundamental role of the IMO is the protection of the marine environment and safety of life and property at sea. Due to the international nature of the shipping industry, the conventional wisdom is that safety in shipping operations can be more effectively achieved at the international level than by individual countries acting unilaterally. Such an approach also facilitates the smooth operation of international trade.

2.5 The principal international conventions of IMO concerning ship safety and pollution are:

- The International Convention for the Safety of Life at Sea 1974 and the Protocols of 1978 and 1988 (SOLAS)

- The International Convention on Load Lines 1966 and the Protocol of 1988 (LL)

- The International Convention on the International Regulations for Preventing Collisions at Sea 1972 (COLREGS)

- The International Convention on Training, Certification and Watchkeeping for Seafarers 1978 (STCW)

- The International Convention for the Prevention of Pollution from Ships, 1973 and the Protocol of 1978 (MARPOL).

2.6 Detailed descriptions of these conventions are provided at Appendix 4.

International Labour Organisation

2.7 The International Labour Organisation (ILO) is a specialised United Nations agency which has determined conventions dealing with the employment conditions of seafarers, including issues dealing with hazards to safety and health on board ships.

2.8 The principal convention dealing with the conditions for seafarers is Convention 147. As of 1990, 20 countries had ratified the Convention and it had been declared applicable to 18 non metropolitan territories (ILO;1990:4). These 38 countries covered 45% of world shipping gross tonnage.

2.9 Convention 147 involves a commitment to:

. safety standards

. social security measures

. established shipboard conditions of employment and living conditions. (ILO;1990:3)

2.10 Standards under ILO 147 must be substantially equivalent to the Conventions or Articles of Conventions referred to in its Appendix (Appendix 5).

2.11 Additionally, ILO 147 requires that:

- effective jurisdiction or control must be exercised over home registered vessels
- there must be adequate procedures for the employment of seafarers
- seafarers must be properly qualified and adequately trained
- maritime labour standards must be enforced, principally by inspection
- there should be an inquiry into any serious marine casualty
- advice should be provided to nationals of states which have ratified the Convention on the problems of working a vessel flagged in a state which has not ratified the Convention
- port states may take action to rectify clearly hazardous deficiencies on board and may notify the country of registration.

(ILO;1990:3)

2.12 Recommendation 155, an adjunct to Convention 147, proposes the continued extension of the list of what should be considered minimum labour standards in merchant shipping and improvement in national provisions to reach a standard which is at least equivalent to specified requirements under ILO 147 (ILO;1990:4).

2.13 Legislation is currently before the Parliament for ratification of ILO Convention 147. The Committee believes that this process should be concluded as soon as possible.

Flag State

2.14 The flag state is the country in which a ship is registered and which undertakes the responsibility for the implementation of international conventions relating to that ship. Under the Geneva Convention of the High Seas every state has the right to sail ships under its flag.

2.15 There is supposed to be a genuine link between the ship and the state whose flag it flies and the state is supposed to exercise effective jurisdiction over administration, technical and social matters concerned with the ship's operation. The interpretation of what is a genuine link varies between states as does the extent of jurisdiction.

2.16 Traditionally, national registries including Australia have had very strict nationality rules. However, the registers of many states, for example Cyprus and Malta, are now open to a wide variety of ships and the nationality link is tenuous. The terms 'open register' and 'flag of convenience' (FOC) refer to such arrangements.

2.17 The growing use of these registers led some traditional maritime countries to develop second registers. These registers are generally meant to be available only to ships involved in international trades. The intended purpose of second registers is to relieve shipowners of some financial requirements associated with full national shipping, but maintain effective

oversight of safety standards. An example of such a register is the Norwegian International Register.

Port State

2.18 The term port state is used to describe the country in which that port is located. International maritime safety and pollution prevention conventions permit a state to inspect a foreign ship in one of its ports to ensure that it substantially complies with the standards for the international certificates it is required to carry.

2.19 The following IMO international conventions provide for port state control inspections:

- SOLAS, Chapter 1, Regulation 19
- LL, Article 21
- MARPOL, Article 5
- STCW, Article X. (Submission;18:35)

2.20 Procedures for the conduct of port state control inspections are contained in the following IMO Resolutions:

- A.466 (XII) "Procedures for the Control of Ships"
- A.542(13) "Procedures for the Control of Ships and Discharges under Annex 1"

. A.597(15) "Amendments for the Control of Ships"

. MEPC 26(23) "Procedures for the Control of Ships and Discharges under Annex 1". (Submission;18:35)

2.21 Internationally agreed procedures are based on the assumption that a ship will comply with all Convention requirements. If a ship's certificates are valid and general impressions and visual observation confirm a good standard of maintenance, the inspector should generally inspect only reported deficiencies. If the inspector believes there are 'clear grounds' that a ship may be substandard, a more detailed inspection may be undertaken (Submission;18:35).

2.22 It is important to recognise that port state control (PSC) inspections are a secondary measure designed to supplement flag state regulatory control. The nature of PSC inspections which are primarily concerned with ship safety equipment does not allow for a proper structural examination to be conducted (Transcript:308,309, Submission;18:35). PSC inspections are not designed to detect major structural faults.

2.23 If defects are found, port states have a responsibility to ensure they are corrected. In the case of Australia, defects may be required to be repaired before proceeding to sea. Exact repair requirements are based on the seriousness of the defect. The vessel may be detained until the repairs have been effected, carried out within a certain time frame or at the next port of call (Submission;18:26).

The Role of Commonwealth and State Governments

2.24 The Commonwealth Government is responsible for trading vessels engaged on interstate voyages and all vessels (other than pleasure craft) on international voyages. The States are responsible for fishing vessels, pleasure craft and trading vessels engaged on intrastate voyages.

2.25 The Navigation Act 1912 and various Acts relating to marine pollution are the basis for the Commonwealth's responsibilities. Matters relating to maritime safety are administered by the Australian Maritime Safety Authority (AMSA).

2.26 These Acts embrace all relevant international conventions and empower AMSA to make Marine Orders to amplify the convention requirements and to embrace all other relevant Australian standards, regulations and orders. These Orders contain the standards and operational procedures which give effect to international convention requirements and relevant Australian standards and requirements. Details of these enactments can be found in Appendix 6 (Submission;18:5, Submission;18:Appendix 3).

Australian Maritime Safety Authority

2.27 AMSA is obliged to ensure that Australian ships under their jurisdiction comply with at least international standards and that foreign vessels trading to Australian ports substantially meet convention requirements.

2.28 AMSA usually surveys safety and pollution prevention equipment. Hull and machinery surveys are mainly carried out by one of the six approved classification societies, AMSA is accountable for the work carried out on its behalf by the societies (Submission;18:10).

2.29 This accountability is spelled out in a memorandum of understanding entered into with each of these approved classification societies which details the respective obligations and responsibilities (Appendix 7). Although the option to undertake an audit program of the societies' surveys on Australian ships exists, AMSA does not conduct formal audits of hull inspections but rather relies on close examination of the class reports to ensure that the convention requirements have been met.

2.30 Foreign vessels visiting Australian ports are subject to AMSA port state control inspections. In this area AMSA has two broad responsibilities:

(i) when at Australian ports all vessels may be subject to control inspections by AMSA

(ii) where hazardous cargoes are being loaded, unloaded or transported AMSA has a responsibility for safety of life, property and protection of the environment (Submission;18:10).

Classification Societies

2.31 Classification societies originally evolved to carry out surveys of ship's hulls on behalf of insurance underwriters. This role has changed and

today classification societies carry out these responsibilities on behalf of owners and in some cases as agents for flag states.

2.32 Classification involves approval of the ship's construction plans, testing of materials and survey during construction. Periodic surveys are a condition of maintaining a ship's classification, commonly referred to as class. The information collected becomes the property of the ship owner and is held on a confidential basis.

2.33 Classification societies do not issue convention certificates in their own right, flag states do. The flag state accepts the responsibility that a ship complies with convention standards. The role of a classification society is to verify, on behalf of the shipowner, the construction and ongoing standard of the vessel.

2.34 Selected classification societies are also authorised by some flag states to issue some or all international certificates on their behalf. In Australia only six classification societies are authorised to perform certain statutory surveys and issue relevant certificates. They are:

- American Bureau of Shipping
- Bureau Veritas
- Det Norske Veritas
- Germanischer Lloyd
- Lloyd's Register of Shipping
- Nippon Kaiji Kyokai.

2.35 The larger and more reputable societies have formed the International Association of Classification Societies (IACS). Members of the IACS are:

- American Bureau of Shipping
- Bureau Veritas
- China Classification Society
- Det Norske Veritas
- Germanischer Lloyd
- Korean Registry of Shipping
- Lloyd's Register of Shipping
- Nippon Kaiji Kyokai
- Polski Rejestr Statkow
- Registro Italiano Navale
- USSR Register of Shipping.

Associate members:

- Deutsche Schiffs - Recision und - Klassifikation
- Jogoslavenski Registar Brodova.

2.36 Most IACS members have considerable resources and expertise. They operate on a world wide basis and generally provide services using their own staff.

2.37 In addition, some countries have formed their own classification societies to provide safety services to their own national fleets and in some cases owners are compelled to use these societies (Submission;18:3). The resources and expertise available to these societies is variable.

2.38 There are also a number of societies not formed by individual countries which are also not members of IACS. These societies generally have limited expertise, however, they may still be authorised by flag states to issue convention certificates on their behalf (Submission;18:3). An example of this is the twelve non IACS members authorised by the Government of Panama to act on its behalf in administration of load line matters (LL.2/Circ.100).

Shipowner

2.39 The shipowner or operator is still regarded as having prime responsibility for the safe operation of their ships. To the responsible ship owner, maintenance of safety standards is part of good operational practice. In charter tonnage the traditional shipowner is no longer dominant and increasingly, the owner is now an entrepreneur or syndicate with the responsibilities of the shipowner being carried out by a ship management firm (House of Lords; 1992:12). The ship manager carries out the traditional operational functions of a shipowner. However, ship management companies may not operate with the level of concern for a vessel as did traditional owners, nor does the same rapport with the crew exist (House of Lords;1992:12).

Charterer

2.40 Charterers contract ships to carry particular cargoes. Several types of charter are commercially available.

2.41 Bare boat charter is where a charterer has the use of a vessel for a set period of time, usually a number of years for an agreed price. During this time the charterer is responsible for the operation of the ship, crewing and insurance.

2.42 Time charter is where a vessel is chartered for a specific period of time. Under this system the operation of the ship may be the responsibility of either the owner/operator or the charterer depending on the nature of the agreement.

2.43 A single voyage or spot charter is where a vessel is chartered for a specific voyage. Under this system the owner/operator is responsible for ship operations, while the Master remains under an obligation to undertake the voyage as the charterer instructs. However, the Master has an overriding responsibility for the safety of life, property, the environment and complying with international convention requirements and the charterer can not instruct the Master with regard to any of these.

2.44 The position adopted by charterers in the past is that if a ship has valid International Convention certificates and is offered in the market, it will be in a satisfactory condition. This assumption has been increasingly questioned in recent years and some charterers are now taking steps to independently confirm that ships considered for charter are in a satisfactory condition (Paragraph:5.39-5.44).

Insurance Providers

2.45 Insurance providers fall into three categories: hull underwriters, cargo insurers and Protection and Indemnity Clubs (P&I clubs).

2.46 Hull underwriters insure the ship's hull and may cover machinery. Cargo insurers underwrite the loss of cargo. In the event of a ship being lost or suffering severe structural damage cargo insurers are responsible only for the loss of cargo. Cargo insurers deal with the cargo owner not the shipping company.

2.47 Liability cover is known as protection and indemnity (P&I) cover, and is usually provided by a P&I club. Each club is a non profit making mutual insurance company owned collectively by the shipowners whose shipping liability it covers. The clubs charge each ship owner an annual fee, known as a call, for each ship in the club. Fees are related to the level of perceived risk a ship represents in liability terms. In the event of unexpected claims the club can make a further call on members to finance shortfalls (Submission;67, AttachmentA:1).

2.48 Each club employs managers who carry out the administrative, underwriting and claims handling functions of the club on behalf of the Board of Directors who control the club on behalf of its members (Submission;67, Attachment A:1).

2.49 Major areas of liability covered by P&I clubs are:

. loss of life and personal injury claims

. hospital, medical and funeral claims arising from inquiry claims

. sickness and repatriation of distressed seamen

. damage to piers, wharves and other stationary objects

. environmental damage

. claims in respect to the wrong delivery of cargo

. cost of raising wrecks.

The International Maritime Industry

2.50 Shipping operations fall into two broad categories:

(i) Liner shipping: which is largely regular, scheduled services on fixed routes carrying higher value general cargo (much of it containerised) for a large number of individual shippers

(ii) Bulk shipping: which generally carries 'ship load' lots of uniform non-packaged lower value cargoes. Bulk shipping divides between dry bulk operations (grain, iron ore, coal etc) and bulk fluid tanker operations (oil, chemicals etc).

2.51 The majority of dry bulk cargoes, and a substantial share of tanker operations, are carried in chartered vessels. For some shippers for whom ship ownership cannot be justified in terms of size and regularity of their shipping requirements, chartering is the primary means of moving goods to markets.

2.52 For shippers who normally rely on their own ships to transport their cargoes, as in vertically integrated industries, there can be occasions when additional shipping capability is required. This can arise as a result of short term fluctuations in cargo demand or simply because of ship 'down time' for maintenance.

2.53 In going to the market, shippers look to charter vessels appropriate to their particular task in terms of size, timing of availability, special characteristics (eg self-discharge facilities) and cost.

2.54 For dry bulk ships, particularly those operating on the spot market, commercial imperatives and the lower pollution potential of the cargo often militate against similar scrutiny. Reliance is placed on the charter party contract to ensure the required standards are met.

2.55 Usually the contract provides for the transport of a specific tonnage of a commodity from a place to another place, over an agreed period and on basic terms and conditions. How the task is managed is left to the carrier who would be remunerated on a volume or tonnage basis in return for arranging appropriate shipping resources.

2.56 Usually charters are arranged through an intermediary known as a ship broker who will canvas the market for the lowest price or hire offered for set criteria. A series of offers and counter offers lead to a 'fixture' and a charter party is then drawn up.

2.57 Prominent among the various major shipping centres are London, New York and Tokyo which handle most of the international charter market.

2.58 Shippers are now also looking to the quality of the charter shipping available (Paragraph:5.39-5.44). This is partly related to the need for reliable and efficient movement of sometimes extremely valuable cargo. It also reflects increasing awareness of possible repercussions associated with incidents arising from the standard of the ship such as a major pollution incident.

2.59 The major oil companies, the main charterers of tanker tonnage, have introduced ship inspection and or vetting guidelines to ensure that vessels used by the companies or using their facilities meet acceptable standards of construction, operation and maintenance (Paragraph:6.36).

CHAPTER 3
THE ISSUES

Introduction

3.1 It became apparent early in the inquiry that the causes underlying the decline in ship safety were economic. Cost cutting in response to commercial pressure has led to a decline in the quality and standards of ship management, as some ship owners/managers sought to avoid essential ship safety issues. Currently, traditional ownership values of maintaining a well found ship and crew are being sacrificed by some ship owners and management companies in the search for quick financial returns. This decline in ship safety standards has been exacerbated by the failure of many ship owners and flag states to observe convention standards of the international ship safety regulatory system. Additionally, the IMO has been powerless to ensure observance of its conventions.

3.2 The ship safety system is locked in a vicious circle. Due to commercial considerations some owners/managers operate substandard ships, flag states and classification societies are failing to observe shipping standards because of competitive pressures, while this lack of effective regulation results in the standard of shipping declining even further.

3.3 The Committee acknowledges that a number of ship safety issues are being addressed by the industry, these developments will be examined in Chapter 4.

World Economic Situation

3.4 Witnesses and submissions to the inquiry suggested that the current downturn in the world economy, while not being the cause of ship safety problems is certainly sustaining conditions which enable those problems to persist (Submission;32:6,7, Transcript:152,382). The Australian Chamber of Shipping (ACOS) points out that as a result of the global economic downturn there has been a dramatic reduction in ship income:

> If one restates the General Freight Index at 100 in 1979, then ignoring inflation, by 1986 it had fallen to 57.03 and by 1990 it had risen to no more than 89.47 (Submission;32:7).

3.5 The current global economic downturn in combination with excess tonnage and the operation of substandard ships by irresponsible owners has forced some freight rates down to a level where ship operating costs are under considerable pressure (Submission;32:6,7).

3.6 In response to commercial pressure substandard ship owners/managers are accepting lower freight rates, leaving responsible ship owners/managers who are unable to operate at the lower freight rates with a declining market share. This is particularly evident in the bulk trades (Transcript: 263,264). The acceptance by charterers of the low freight rates available through the operation of substandard shipping exacerbates this situation.

3.7 However, owners/managers may be their own worst enemies as they relet contracts attempting to secure the widest possible margin in freight rates (Transcript:263,264). That is, an operator may secure a contract to ship freight at a certain price and may then subcontract the charter out at a reduced rate, pocketing the difference. For example, securing a $.5 margin on a 100,000 tonne charter results in a $50,000 return for doing little other than arrange the charter.

3.8 Low financial returns, which do not justify new ship buildings, have resulted in an ageing of the world fleet, despite the highest delivery of new tonnage since the mid seventies (Transcript:376, Submission; 32:6). However, the International Chamber of Shipping suggests that it appears that the average fleet age may have stabilised, in tonnage terms, at around 12.8 years (ICS;Annual Report:1992). It will later be shown that age is a significant factor in ship casualties (Paragraph:3.39-3.43).

3.9 The Committee has heard that cost pressures do not allow for routine maintenance to be carried out properly (Transcript:406). Where maintenance is not carried out it may be a case of the captain and crew not being provided with the necessary resources rather than poor onboard procedures (Transcript:406). Maintenance problems are discussed in more detail in paragraphs 3.35-3.42.

Marine Insurance

3.10 An area of commercial ship operation which has come under considerable scrutiny during the inquiry is marine insurance. Regrettably, Australian marine insurers declined to appear before the Committee,

although the Insurance Council of Australia met requests for written material. It was not necessary for the Committee to take further action in this regard as an appreciation of the market and its effects on ship safety was obtained from international sources.

3.11 There has been intense competition within the marine insurance industry and it is not surprising that the Committee received evidence which suggests that unsafe ships are being insured (Transcript:195,421,436,449-453,638). Under IMO conventions a ship which has valid class certificates is to be assumed to be in good condition unless there are 'clear grounds' for thinking otherwise (SOLAS Chapter 1,Regulations 17,19). Insurance cover is provided on this basis (Transcript:431,436).

3.12 However, with the failure of flag state control regulatory procedures and classification societies to detect and eradicate much substandard shipping, accepting international load line classification certificates as a guarantee of structural soundness is no longer conducive to good ship safety or the continued commercial viability of marine insurers. It is clear to the Committee that marine insurers have failed to properly align actual risk in both structural and liability terms with premium levels.

3.13 Given the roles of flag states and classification societies, the Committee accepts that it is not the responsibility of insurance companies to inspect ships for structural soundness. However, the Committee fails to see how it is sensible commercial practice for insurance companies to insure unsound, poorly crewed and inadequately maintained ships. This has been belatedly recognised and marine insurers, having sustained substantial losses, are now taking a proactive role in assessing the suitability of ships for insurance (Hill;1991:4,5).

3.14 The Committee welcomes the growing practice of insurance companies vetting ships that are to be insured (Paragraph:5.2-5.10). The vetting process entails analysing factors associated with a ship's history, such as age, class, changes of class, owner, changes of owner, cargoes carried, sea conditions in area of operation, competence of crew and incident history. If, after completing the vetting process, an insurer is undecided about the standard of a vessel then a structural survey may need to be carried out.

3.15 The unavailability of insurance for substandard ships has the potential to be a significant factor in eradicating ship safety problems.

Ship Management

3.16 A responsible ship owner or manager will ensure that shipping operations comply with the relevant international maritime convention requirements, while seeking a return for shareholders. To achieve this, the vessel and all equipment should meet international requirements and should be adequately maintained. Safe and efficient ship operations require a well trained and experienced crew. A responsible ship owner will ensure that the crew is well treated and that sufficient resources are available for them to operate the ship efficiently and effectively (Submission:32;12).

3.17 The Committee is especially concerned with ship management practices as they represent the human element which has proven to be a significant determining factor in ship casualties (Transcript:463).

The Ship's Master

3.18 The ultimate responsibility for the safety of a ship and the lives of those on board rests with the ship's master (House of Lords;1992:21). At the same time the master is responsible to the owner or manager for the efficient operation of the ship. These dual roles can be contradictory.

3.19 Owners concerns with cost factors have resulted in increasing pressure on ship's masters. In fact it was suggested that masters are under considerable pressure from owners to perform and that if they do not, they can be replaced (Transcript:392). Pressure may be in the form of accepting unsafe loading practices to minimise time in port, maintain speed in heavy weather conditions to meet deadlines and to sail an unsafe ship to avoid the cost of repairs or to move the ship to where repairs can be carried out more cheaply (Transcript:631). In some instances the captain is merely the driver of a ship rather than the master.

3.20 Increasingly, pressure being placed on masters is being associated with management companies rather than with traditional owners (Submission;18:2). This reflects the breakdown in traditional ship management values and the increasing incidence of ships being used to generate short term returns. The Committee considers such practices to be a threat to safety of crew, vessel and the marine environment.

Crewing

3.21 There are several major issues associated with crewing: the level and quality of training available to crews, communications problems between

officers and ratings, the abuse and exploitation of some crews hired from non traditional maritime nations, the reduction in the size of crews and the threat of a shortage of crews in the years to come.

3.22 It has been put to the Committee that the training of crews from non traditional maritime countries is in some cases practically non existent and that this situation poses a serious threat to ship safety (Transcript:295-297,438). The level of training of both officers and ratings, though purporting to comply with STCW requirements, is in many cases insufficient to ensure the safe operation of a large ship. Considering that human factors are a major contributor to ship accidents and incidents this is a matter for serious concern (Transcript:365).

3.23 It has been suggested that some ship casualties would have been avoided *if the ship had a well trained, experienced crew* (Submission;23:4). This may be for several reasons such as the master and officers having a better appreciation of sea conditions or the crew being better able to conduct temporary repairs. It has been generally recognised that a good crew may save a bad ship in a time of crisis and alternatively, a bad crew can ruin a good ship. It is undeniable that the quality of crew training is a central factor in maintaining ship safety.

3.24 Possession of forged qualification certificates by some crew members and the failure of others to have appropriate certificates are also a matter of concern. For example, it has been reported that in a recent crackdown by the Japanese Ministry of Transport, 25 officers on board 11 foreign vessels were found to have no proper qualification certificates (DCN:11 August 1992). Many of these officers had only certificates from

their country of origin rather than from their ships country of registry, seven had certificates which had expired and two had no certificates at all (DCN:11 August 1992).

3.25 The possession of forged certificates poses problems for several reasons. First, possession of a forged certificate may suggest that a crew member does not have the requisite training and experience necessary to perform his/her tasks properly, so affecting the safe operation of the ship. Second, forged certificates undermine the effectiveness of port state control as the inspection of crew competency certificates is an integral part of the inspection.

3.26 The Committee was told during the inquiry that forged qualification certificates could be purchased in some countries (Transcript:223,224,323,324). As qualification certificates have to be accepted at face value during a PSC inspection there is no way of detecting when certificates are forged or genuine. It is not suggested that this is a common occurrence, but where dummy documents do occur they pose an obvious threat to the safe operation of a ship.

3.27 An adjunct to the crew training issue is the reduction in the size of ship crews. The reduction in crew sizes is not seen as a problem on more modern ships where technology and higher trained crews compensate for reductions in numbers and where maintenance programs take into account the reduced ability of the crew to conduct regular onboard maintenance.

3.28 The situation has now arisen where it is questionable that crew sizes approved by some flag states in respect of older less automated vessels would be able to operate the ship in an emergency situation (Transcript:48,49). Additionally, a reduction in crew sizes on such ships may not enable routine maintenance to be properly carried out (Transcript:219,220). Obviously, a combination of reduced crew sizes and a lack of training has the potential to be a significant determining factor in ship safety.

3.29 An additional problem with crewing which has been brought to the Committee's attention is the polyglot nature of some crews. It has been suggested to the Committee that in numerous instances witnessed by ship's pilots at Australian ports, ship's officers were unable to communicate with ratings because in many cases they lacked a common language (Transcript:611-613). In some cases there may be up to four different nationalities on board a ship (Transcript:615). This difficulty in communication extended from the pilot to ship's officers, from officers to ratings and the crew to the tug boat. Exacerbating this problem is the traditional separation between officers and ratings on older traditionally manned vessels, which acts as an additional barrier to effective communication.

3.30 Unlike the aviation industry, where English is the prescribed language, international shipping does not use a common language. The Committee understands that English is the preferred language for international shipping, however, it appears that many seafarers are unable to communicate in English.

3.31 The Committee was told on several occasions that crew members have been shockingly treated by owners and ship's officers (Submissions; 21,50,51). The extent of this maltreatment extends to:

- the denial of food and the provision of inadequate food
- bashing of crew members by ships officers
- maintenance of two pay books, one for official records of ITF levels of pay, the other for the real lower level of pay
- under or non payment of wages and overtime
- inadequate accommodation and washing facilities
- sexual molestation and rape
- depriving access to appropriate medical care
- crew members being considered as 'dispensibles'.

(Transcript:585-589,882,884)

3.32 Usually, crews from non traditional maritime nations are those which work in inadequate conditions, are poorly paid and whose living quarters are substandard (Transcript:585-589). Evidence has been received that mistreated crew members are reluctant to complain as they will be black listed by crewing agencies and will be refused work as a seaman (Transcript:590, Submission 51). Many crew are now forced to sign contracts

which forbid them to contact the ITF (Transcript:885), if they do they are instantly dismissed and threatened that they will never work as a seaman again. Additionally, crew members have often had to pay a fee to crewing agencies in order to secure employment and are reluctant to jeopardise their job security because of unemployment at home and the substantial investment made. This fee can be as high as $ US 4000 (Transcript:884).

3.33 The Committee views the exploitation of any crew as being totally unacceptable. Substandard ships operated by an irresponsible owner, worked by crews that are poorly led, inadequately trained, under paid and abused, lowers morale to a level where such ships pose a grave threat to the lives of seafarers, property and the marine environment.

3.34 Aside from the treatment of crews, information has been provided to the Committee indicating that there is currently a shortfall of 50,000 ships officers and by the end of the century there will be a major deficiency in the availability of both trained officers and ratings (ISF:4). It is a matter of some significance to safe ship operations that in the future there will be a shortage of trained and experienced crew.

Maintenance

3.35 In association with the treatment of crews by some owners the Committee considers the incidence of poor maintenance of safety equipment on board some ships as deplorable and dangerous. During PSC inspections by AMSA in 1991, 841 cases of missing or defective ship safety equipment were found, with an alarming number of deficiencies in life saving appliances (Submission 28;Appendix A:Table 10A). These deficiencies in life saving

appliances representing 29% of the total deficiencies identified (Submission 28;Appendix A:Table 9A). Among these 173 related to life boats and 143 to life boat inventory, accounting for over 10% of deficiencies.

3.36 It is a matter of grave concern that ship owners or operators holding such scant regard for the safety of their crews and ships are operating in the international shipping industry. It is an unfortunate reflection on the state of the international shipping industry that this practice should even exist let alone be allowed to continue to the extent that it does at present.

3.37 Apart from the failure to maintain ship safety equipment it appears that neglect of structural maintenance is also common on substandard vessels (Transcript:158). There may be several reasons for this development. Cost pressures have forced ship owners to cut maintenance costs to a minimum (Paragraph:3.27). Crew sizes may not be sufficient for routine maintenance to be carried out. Also, some ship owners are buying a ship, operating it until its first special survey and then selling the ship (Transcript:920). Under this system the lowest possible levels of maintenance are carried out in order to minimise costs and maximise returns.

3.38 A lack of maintenance may impact on all areas of a ships structure, specifically:

. hatch coamings and hatch covers which are regularly damaged during loading and unloading

- hold brackets and webs which can be damaged by bulldozers or jackhammers during unloading

- all metal surfaces which can be effected by corrosion, particularly ballast tanks and holds in which corrosive material is carried

- all engines and machinery.

3.39 The Committee has received extensive technical evidence concerning the structural soundness of ships. All mention the above problems as contributing factors to ship casualties (Submission;5: Attachment A, Submission;38, Submission;62). This lack of regular maintenance is a significant contributing factor to ship safety problems (Transcript:536).

3.40 The Committee believes that the application of anti corrosive coatings to metal surfaces will improve the durability of a ship's structure and reduce the amount of maintenance required (Transcript:6,405,536). However, it is imperative that coatings are maintained to a high standard or their usefulness is diminished (Transcript:406).

3.41 Considering the significant investment entailed in a large bulk carrier the Committee is surprised that an owner would choose not to protect such an investment by having appropriate protective coatings applied. The lack of internationally agreed specifications for the thicknesses and types of coatings which should be applied to metal, is a serious defect in ship design specifications (Transcript:6).

3.42 The Committee notes that IACS members have now imposed conditions for new tankers to coat ballast tanks. For example, Lloyd's Register of Shipping has instituted a requirement for ballast tanks to be coated, with the durability and quality of the coating determining specifications and the frequency of inspection (Submission 5,Attachment B;Part 6:17).

Vessel Age

3.43 Not surprisingly the age of a ship has been identified as a major factor in ship losses (Hill;1991:2, Transcript:265,371-373). The age of the world fleet has been rising but appears to be stabilising at around 12.8 years, after several years of persistent increase (ICS, Annual Review; 1991/1992:7).

3.44 As a ship ages there is a general deterioration in condition which is ultimately irreversible. Ships are kept in service too long, suggesting that the inexorable ageing process is more of a factor in ship structural soundness than it has previously been (Transcript:372). This can be clearly seen in the ageing of the world fleet and its correlation to ship casualty statistics (Alvaraz;1992:37,38, Submission 67;Attachment B).

3.45 The central reason why age is a problem with ship losses is that it allows an accumulation of stresses to build up (Transcript:468). While a ship may be serviceable for a period of time, stresses begin to accumulate and take a toll on structural soundness. This accumulation of problems is an especially important consideration with bulk carriers as they are generally acknowledged as being the hardest working ships in the international fleet (Transcript:468).

3.46 It was argued however, that the age of a ship is not necessarily an automatic indicator to structural weakening (Transcript:907,908,924). An older ship which has been well maintained may be more structurally sound than a much younger vessel which has not been well maintained (Transcript:924, 932). It is apparent that while vessel age is a general indicator to possible structural weakness the history of the individual vessel and more importantly its owner and management history is the vital factor in possible structural failure.

3.47 A particular aspect in relation to the ageing of ships which concerns the Committee is the re-entry into service of ships which have been sold for scrap. Evidence has been received that unseaworthy ships sold for scrap are later brought back into service (Transcript:573,574). The Committee views this practice where it occurs as reprehensible and considers that it poses a serious threat to the lives of seafarers, ports and the marine environment.

Loading/Unloading

3.48 Considerable evidence related to the loading and unloading of bulk cargo was presented to the Committee. Several issues were highlighted: loading rates at bulk terminals, issues surrounding the provision of loading plans to terminals, alternate hold loading and the use of heavy grabs, jackhammers and bulldozers during unloading.

3.49 Loading plans are designed to ensure that loading stresses are within design limits. The Committee has received conflicting evidence in relation to the provision of loading plans to terminals by ships and the

extent to which terminals alter loading plans which have been submitted. It was suggested that bulk loading terminals adhere to loading plans (Transcript:284). On the other hand, it was also suggested that terminals may alter loading plans to better accommodate their own operational requirements or some problem with the vessel (Transcript:13,96). Despite claims of loading facilities that they strictly observe the vessel's loading plan and the Master's instructions, information received by the Committee showed plans were not always followed (Transcript:531).

3.50 An issue with loading rates is the number of passes made during loading operations. The number of passes to be employed in the loading process is outlined in the loading plan. A large number of passes minimises the possibility of overloading individual holds and reduces the possibility of over stressing the ship (Submission;5:Attachment A,Part1:10). Cautious operators ensure they employ a large number of loading passes to reduce the possibility of overloading.

3.51 It was also suggested that loading rates may effect the structural integrity of ships, principally because loading rates may exceed a ships design capability to deballast and create stresses exceeding the ship's design limits (Transcript:284,474). It is necessary for a ship to balance the rate of loading with deballasting to reduce the amount of bending moments a ship is subject to. These increased stress levels may not be apparent while the ship is in port but the cumulative effect over a period of time may result in structural failure in a seaway (Submission;5 Attachment A, Part 1:10).

3.52 Unloading practices using heavy grabs and bulldozers are also a contributing factor to ship structural damage. Hatch coamings, bulkheads and the lower regions of main frame lower brackets are being damaged by these unloading practices. Considering that ships must endure the repeated impact of grabs which can weigh up to 35 tons substantial damage seems inevitable (Submission 5;Attachment A;Part 1:4)

3.53 The Committee did not receive evidence which showed conclusively that loading practices when carried out according to an accurate loading plan seriously effected ship safety. Unloading practices are acknowledged as contributing to the accumulation of stresses and structural damage which may ultimately result in catastrophic structural failure.

Construction/Design

3.54 The Committee received conflicting evidence in relation to the use of high tensile steel (HTS) in the construction of bulk carriers. It was argued that problems arose because HTS scantlings are not as thick as those required with the use of mild steel, but HTS corrodes at the same rate, meaning that corrosion is a problem much earlier than with mild steel (Transcript:205-207). The cost advantage of HTS is that less steel is required in the construction, making the vessel cheaper and it allows a ship to carry increased deadweight tonnes as the ship itself is lighter (Transcript:535). As cost pressures have impacted on ship operations and maintenance is neglected and ships are kept in service longer, the corrosion problems associated with HTS have become more prevalent.

3.55 HTS need not pose a problem. A responsible owner/manager who maintains vessels to a high standard and takes into account the properties of HTS should not have any problems with corrosion induced structural failure (Transcript:535). It is further suggested that HTS when used in conjunction with a quality anti corrosive coating is a useful development in ship design (Transcript:207). The evidence suggests that HTS when well maintained does not pose a significant threat to a ship's structural soundness.

3.56 It was suggested during the inquiry that bulk carriers could be designed and constructed so as to facilitate inspection of the ships structure (Transcript:639,640). Specific details were not supplied but the idea impressed the Committee as a practical design feature which could improve the quality of structural inspections. The Committee considers that the ability to inspect ship structure should be taken into account during ship design.

Marine Pollution

3.57 The Committee has received a limited amount of evidence in respect to the operations of oil tankers and associated oil pollution issues. What evidence the Committee has received, with the exception of Greenpeace Australia (Submission:66), suggests that while there are some minor problems, generally oil tanker operations have not posed a significant threat to the Australian coastal and marine environments.

3.58 What is of more concern is the pollution of the sea by oil discharged or spilt by ships and terminals in the course of their operations. In 1985 the US National Academy of Science estimated that 48.5% of oil pollution was the result of shipping and terminal operations, of this only 12.5% was the result of tankers accidents, while 21% was the result of tanker operations and 11% the result of non tanker shipping (cited,Rose; 1991:176). It is clear that while the emphasis in tanker operations has been tanker accidents, a tightening in tanker operations will result in a more substantial reduction in oil pollution.

3.59 There are a number of international conventions which address oil pollution problems, most of which have been acceded to and implemented in Australia. These Conventions are:

- International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution 1969

- International Convention on Civil Liability for Oil Pollution Damage 1969

- International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage 1971

- International Convention on the Dumping of Wastes at Sea 1972

- International Convention for the Prevention of Pollution from Ships 1973 as amended by 1978 Protocol

- International Convention on Limitation of Liability for Maritime Claims 1976 (Rose;1991:178).

3.60 There are also two industry liability and compensation schemes:

. Tanker Owners' Voluntary Agreement Concerning Liability for Oil Pollution 1969 (TOVALOP)

. Contract Regarding an Interim Supplement to Tanker Liability for Oil Pollution 1971 (CRISTAL) (Rose;1991:179,180).

3.61 Australian legislation is complex with both State and Commonwealth Acts covering the area (Rose;1991:187). The major Commonwealth Acts are:

. Environment Protection (Sea Dumping) Act 1981; dealing with the deliberate disposal of oil and other wastes into the sea

. Protection of the Sea (Prevention of Pollution from Ships) Act 1983; dealing with the discharge of oil and other noxious substances

. Protection of the Sea (Powers of Intervention) Act 1981; dealing with oil pollution resulting maritime casualties

. Navigation Act 1912, Division II, Part IV; these provisions dealing with collisions and groundings may be relevant in some circumstances

. Protection of the Sea (Civil Liability) Act 1981; dealing with civil liability for tanker sourced oil pollution damage (Rose;1991:187,188).

3.62 These Acts which embrace international conventions clearly include all aspects of inadvertent or deliberate discharge of oil or waste by ships. It is important that the provisions of these Acts are rigorously

enforced to prevent the many small discharges which are occurring in Australian waters.

3.63 Legislation came into force on 1 October 1991 under the *Great Barrier Reef Marine Park Act 1975*, requiring compulsory pilotage in the inner route of the Great Barrier Reef and the Hydrographers Passage, Queensland. These requirements have been accepted by the international maritime industry and a reporting system has worked well in the first quarter of 1991/92 with few incidents of non compliance being reported (AMSA Annual Report; 1991/92:18).

3.64 Recently, there has been argument over the respective benefits of several methods of tanker construction designed to minimise the loss of oil from holds in the event of a marine casualty. There are three main contenders, double hull, mid-deck and the 'E3' designs. Evidence on which of these designs is most effective is inconclusive (House of Lords; 1992:29,30).

3.65 The issue of double hull oil tankers was raised during the inquiry, mainly in association with the US OPA Act 1990 (Transcript:25,538). Given the conflicting claims of the merits of potential designs the Committee does not endorse a particular design, however, the Committee considers that improvement in tanker design to minimise the loss of oil into the sea is of the utmost importance and suitable designs should be determined by the IMO.

3.66 The Committee considers that the recent cases of the *Kirki* and the *Exxon Valdez* clearly demonstrate that disaster is never far away and that prevention of pollution of the sea by oil is a far better option than cure.

CHAPTER 4
REGULATORY SYSTEM

International Maritime Organisation

4.1 The root cause of the IMO's problems is the slowness with which it reacts to significant issues. Major decisions require consensus among member states, it appears that this is difficult to arrange at the IMO as some member states protect vested interests (Transcript:247). The IMO has performed a valuable role in establishing conventions and codes of conduct to regulate international shipping, for example, SOLAS and STCW. It is generally agreed that the standards set are adequate but that compliance with the standards by some flag states, classification societies and ship owners/managers is inadequate (Submission:41;3). Many provisions of international maritime conventions are honoured in the breach rather than the observance.

4.2 Accepting that the IMO has produced acceptable conventions and codes and that non compliance is the problem, the Committee is concerned about the length of time taken for these conventions and codes to be agreed to by the member states of the IMO. For example, the Committee has received advice that it can take up to 5 years for a convention to be approved and can then take many more years to be ratified. While the Committee has heard that unilateral action may in the long term harm international ship safety regulation, it can not help considering that a major reason for unilateral action is the relative slowness with which the IMO is able to react.

4.3 The *Exxon Valdez* oil spill which was the catalyst for the United States Oil Pollution Act 1990 is a clear example of a nation taking unilateral action to protect its own interests (Transcript:109,171, 318,685). For the US this is a viable course of action as it is powerful enough economically to enforce this legislation (ICS Annual Review;1991/1992:10). What concerns the Committee is that ships which are now inappropriate for the US trade will operate in those areas which are less capable of regulating them. This situation would not improve the ship safety problem as much as pass it on to those nations least able to do something about it.

4.4 The Canadian Government is reported to have instituted an inspection regime aimed at specific vessel types of selected flag states (Exhibit 7). Specifically, Canada will target all bulk carriers more than 10 years old between 40,000 - 100,000 deadweight tons flying the flags of Cyprus, Panama, Liberia, Iran, Croatia, Malta, Bahamas and the Philippines. Unlike the US action, the Canadian move would not be considered unilateral as it falls within the auspices of PSC inspections allowable under IMO conventions.

4.5 The Committee considers the IMO to be the appropriate forum for the formulation of international ship safety regulations, however, the relevance and speed of the IMO's response to ship safety requirements must be improved.

4.6 The inability of the IMO to implement policy and sanction those flag states which do not comply with international convention requirements was raised as a cause for concern (Submission:41;3,4,5, Transcript; 111,134,183,246-248). The Committee recognises that the IMO is a forum for

the formulation of policy. Implementation of policy and sanctioning of non compliance is a matter for flag states. Consequently, the inability of the IMO to enforce convention requirements is of lesser importance than its ability to formulate policy quickly.

Flag States

4.7 The prime regulatory responsibility for ship safety rests with flag states, many of which either by intent or ignorance are failing to detect and eradicate substandard shipping (Submissions;18:6,24:8,41:3).

4.8 There is a continuing trend for ship owners to reduce ship operating costs to the lowest possible level and a significant cost reduction can be made by transferring vessels to a 'flag of convenience' (FOC) (Transcript:179). These FOC registries offer investment incentives and lower tax and wage costs, in fact, some nations establish a registry in an attempt to gain foreign currency (Submission;32:7). The Committee has no argument with the establishment of registries to gain foreign currency if standards of ship safety are maintained. Most FOC registration rules are flexible enough to allow easy mobility between flags (Submission;21:25,26,Transcript:773). The worrying aspect of this development is that many of these flag states have a poor reputation for enforcing IMO convention standards (Submission;21:25, Transcript:70,71,104).

4.9 While ship owners are transferring vessels to some of these lower cost FOCs, non compliance will continue to be a problem especially where irresponsible ship owners/managers are involved. As more ships move to FOCs the potential for further decline in ship safety standards increases.

The establishment of second registries offering financial advantages, while maintaining safety and operational standards, is an attempt by traditional maritime nations to combat the move to FOCs (Transcript:230,231).

4.10 Developments in some flag state operations are similar to those in the operating methods of some classification societies. As long as competition between flag states enables irresponsible owners to easily move substandard ships from flag to flag, as they can with some classification societies, safety standards will continue to decline.

4.11 The Committee is not opposed to FOCs or second registries as a matter of principle. If FOCs and second registries conduct their operations in accordance with international convention requirements the Committee sees no reason why they should not exist. The Committee's concern is with the unsatisfactory level of compliance of some FOCs with international conventions rather than the competitive pressure they may place on traditional flags.

Classification Societies

4.12 There are approximately 49 classification societies. Of these 49, eleven are members of IACS and cover 90% of the world fleet (Submission 41:5). Of these eleven, there are six major societies: American Bureau of Shipping (ABS), Bureau Veritas (BV), Det Norske Veritas (DNV), Germanischer Lloyd (GL) and Nippon Kaiji Kyokai (NKK) Lloyd's Register of Shipping (LR) (Transcript:735).

4.13 Traditionally, a classification society was associated with a flag state, for example, Lloyd's Register of Shipping with the UK flag (Transcript:443,444). Under these arrangements ships carrying a certain flag would use a particular classification society providing a guaranteed and valuable client base for the classification society (Transcript:443,444).

4.14 With the widespread 'flagging out' of ships to open registries, the traditional association between classification society and flag state broke down (Transcript:444). The response of classification societies to the declining number of clients available through association with a particular flag has been to become more active in securing clients and more circumspect about losing them (Transcript:443-445). There seems little doubt that the quality of classification society inspections declined as societies sought to maintain their client base. It is abundantly clear to the Committee that while classification societies remain subject to unregulated commercial competition there is the possibility of inspections not being properly carried out. Put bluntly, ample evidence was put to the Committee that the quality of inspections has gone down as the intensity of competition for clients has gone up. The requirement for classification societies to accommodate both regulatory responsibilities and the desire to respond to market pressures explains the decline in classification survey standards.

4.15 There is a wide variation in levels of performance of classification societies (Transcript:607). All major classification societies have problems (Transcript:734,785).

4.16 Serious questions have been raised concerning the quality of some IACS classification societies. The Committee has been told that when quality assurance programs are implemented by IACS several members may have trouble complying with requirements (Transcript:786, 787).

4.17 The small amount of the world fleet covered by non IACS societies makes it difficult to precisely assess levels of competence. In some instances classification societies have been established to service a particular trade, type of vessel or flag state. The one sure thing about the standard of many non IACS classification societies participating in the international shipping industry is that it is not good (Transcript:734,735).

4.18 Differing levels of performance among classification societies is a problem in that if a classification society refuses to class a substandard ship an owner can transfer to a society which is prepared to class the ship (Transcript:527, 774). Under international conventions, load line certificates issued by any class society authorised by a flag state are equally valid. This creates ample scope for an irresponsible ship owner to avoid ship safety responsibilities. The Committee is concerned by this situation and views differing levels of performance between classification societies, in combination with the readily available option to swap societies, as a major impediment to raising the general standard of ship safety.

4.19 It is of further concern to the Committee that in some of the 'open registries', classification societies carry out flag state functions on behalf of the flag state (Transcript:479,550). Obviously, under these circumstances classification societies may come under political as well as economic pressure to inappropriately issue class certificates (Transcript:627).

Even worse, in some 'open registry' flag states it seems that a classification society has been created by the State which does not have the necessary resources and personnel to properly carry out the functions of a classification society (Transcript:73,74,578).

4.20 Another area of concern is the quality of classification society surveyors. The Committee has received much evidence suggesting that there can be a lack of competency exhibited by surveyors (Transcript;732). The probable explanation for this inconsistency is the lack of internationally agreed formal qualifications for classification surveyors (Transcript:232,233). It is worth noting that there are different skill and theoretical requirements for class surveyors and marine surveyors such as those working for organisations like AMSA. Class surveyors are required to be much more familiar with ship structures than are marine surveyors. The Committee considers the absence of internationally agreed and recognised qualifications for classification surveyors as detrimental to ship safety.

4.21 The use of non exclusive surveyors by classification societies is also a problem. It appears that in many cases where non exclusive surveyors have been used ship deficiencies were subsequently identified. It was suggested that non exclusive surveyors may not be suitable to carry out detailed structural surveys and should be retained only for less detailed inspections (Transcript:522,523). It was also suggested that the background and experience of a non exclusive surveyor should be taken into account when assessing which tasks are to be undertaken (Transcript:522,523).

4.22 Varying views on a suitable background for marine administration surveyors and how background may effect surveyor effectiveness were offered (Transcript:638,749). The two major schools of thought suggested that either a surveyor with a master mariner/engineer officer or ship construction background would be the most effective. The Committee is unconvinced that either is superior as effectiveness as marine administration surveyors would rest on personal qualities which are not dependent on a particular background.

Port States

4.23 Australia has a reputation for being one of the more vigilant conductors of PSC inspections (Transcript;43,332,370). It was argued during the inquiry that Australia's strict PSC inspection system has deterred substandard vessels from coming to Australia (Transcript:43,332). The fear of being delayed in Australia because of compulsory repairs resulting from PSC inspection is preventing ships in poor condition from trading to Australian ports (Transcript:370). If this is the case, the Committee considers it tangible proof that a rigorous PSC inspection system can be effective.

4.24 The Committee was told that any unilateral action on the part of Australia would adversely affect international competitiveness. Witnesses were invited to provide cost estimates of freight increases per tonne kilometre that would arise if ships were required to adhere to appropriate international standards. No estimates of such increased costs were received. In the absence of sound estimates such comments can only be regarded as assertions. No evidence was provided to the Committee that adherence to international maritime standards would substantially increase per tonne kilometre costs.

4.25 Australia has a target of inspecting on average 25% of all ships visiting Australian ports. This target is being achieved (Submission 18:27).

4.26 As with classification society inspections, the quality of PSC inspection surveyors was called into question (Transcript:233). It was suggested that some surveys were not conducted properly and that there is an inconsistency in inspection standards between various Australian ports (Transcript:43,233).

4.27 There has been much discussion during the Inquiry concerning the role of PSC inspections (Transcript;117,118,200). Some asserted that PSC inspections should not become a substitute for flag state regulatory responsibilities and remain a secondary form of regulation (Submission 7:4, 24:6). On the other hand, due to the ineffectiveness of flag state control, it was argued that PSC inspections be given an enhanced role in identifying and rectifying substandard shipping (Transcript:240).

4.28 The Committee believes that there is room for an enhanced PSC inspection regime in Australia. An improved Australian PSC inspection system would be further strengthened by the development of a regional approach such as that adopted in Europe (Paragraph:5.32-5.33).

4.29 Further, PSC inspections would also be improved if full information on the commercial chain extending from beneficial owner of the ship to cargo owner was readily available to PSC inspectors at the time of inspection. This would ensure that recourse could be had to the appropriate party in the event of a pollution incident.

Ship Incident Investigation

4.30 With the establishment of AMSA on 1 January 1991, the responsibility for ship incident investigations remained with the Department of Transport and Communications. The Marine Incident Investigation Unit (the Unit) is responsible for investigating the causes of marine incidents with the purpose of preventing similar occurrences (Submission;34:1).

4.31 Under the Navigation Act the Unit has the jurisdiction to investigate casualties involving:

- an Australian flag vessel, to which the Navigation Act applies, anywhere in the world
- a foreign flag ship in waters within the territorial sea or where pollution from an incident outside the territorial sea threatens the Australian environment
- a ship on an intrastate voyage carrying Commonwealth certificates
- any vessel involved in a casualty with a ship to which the Act applies.

(Submission;34:2)

4.32 Given the objective and jurisdiction of the Unit, the Committee was disappointed with the results of marine incident investigations undertaken. It has become obvious during the Inquiry that commercial considerations are an important factor in marine incidents. To that end the Committee considers that information such as ship owner, changes of ship owner, classification society, changes of class, charterer, cargo, commercial

arrangements, structural history including class and PSC inspections, crewing arrangements and ports visited is of vital importance to any investigation.

4.33 The *investigation process appears to be focused on narrow* technical or operational causes for marine incidents. The quality of the Unit's investigation of these factors is not in question. However, while these considerations are important, the more fundamental considerations of the commercial, regulatory and economic circumstances are important if a wider appreciation of the factors contributing to incidents is to be gained.

4.34 Analysis of 8 inquiries into incidents by the Marine Incident Investigation Unit revealed the following (Exhibit 8):

ITEM	COMMENT
Name of Vessel	Every Case
Age of Vessel	Every Case
Flag at Time	Every Case
Flag Change Noted	3 Cases. No mention in 5 cases
Class at Time	Every case
Class Change Noted	No Mention Any Case
Date of Incident	Every Case
General Location	Every Case
Latitude/Longitude	5 Cases
Type casualty	Every Case
Type Ship	Every Case
Size in DWT	3 Cases
Cargo	Every Case
Load Port	Every Case
Discharge Port/s	4 Cases
Charterer	3 Cases
Commercial Arrangements	2 Cases
Crew Size	6 Cases
Crews Nationalities	7 Cases, (Officers only)
Onboard Language	2 Cases
Certificates of Competency	3 Cases
Specific Mention Pollution	1 Case

4.35 Clearly, the absence of consistency in Unit reports does not allow for a discernible pattern of economic, regulatory or commercial activity which is contributing to incidents to be identified. It is important that these circumstances be identified to allow PSC inspections to be more accurately targeted toward these factors.