PREFACE

Port State control continues to be a key element in maintaining a safe international marine transport industry. Despite the extensive political and public debate concerning maritime safety, some sections of industry continue to jeopardise life, property and the environment by operating unsafe ships and using less than competent crews.

The Australian Maritime Safety Authority (AMSA) conducts an extensive port State control program in an open, objective and accountable manner. Port State control has a cost in terms of resource allocation, however, given the need to protect both life and the environment, the program is readily justified. The adoption of a regional approach to port State control, particularly the sharing of information, can only assist in the aim of enhancing maritime safety standards.

This report outlines the operation of AMSA's 1993 port State control program. The inspection rate has increased over previous years, which is evidence of the additional resources channelled into the program. However, the inspection rate achieves more than simply indicating the number of ships inspected : it is a strong tangible signal to the owners and operators of unsafe ships that such ships risk detention should they visit an Australian port.

AMSA will continue to implement a rigorous port State control program in 1994. The owners and operators of safe vessels have nothing to fear from an AMSA control inspection. However, unsafe ships will be detained in accordance with AMSA's commitment to IMO's objective of safe ships and cleaner seas.

P M MCGRATH
Chief Executive
Australian Maritime Safety Authority

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OVERVIEW

In accordance with international law each State has the right to exercise control over foreign flag ships within its territorial jurisdiction. In addition to territorial jurisdiction, international authority allows control inspections of foreign flag ships based on a number of maritime conventions adopted by the International Maritime Organization (IMO) and the International Labour Organisation (ILO).

The object of these conventions is to improve maritime safety, protect property, life and the marine environment and to promote and ensure compliance with acceptable on-board living and working conditions. The responsibility for ship safety and pollution prevention lies primarily with the flag State, the ship's owner and operator and its crew. However, many flag States are either unable or unwilling to maintain full and continuous control of their ships and increasing responsibility is placed on the port State. Port State control is likely to continue to be required for a considerable period of time.

Long term viable solutions to problems associated with substandard and unseaworthy vessels are achieved only through international action by individuals, organisations and governments taking responsibility for ship safety. The answer lies in all owners or operators and flag States implementing convention requirements to acceptable levels. If such effective action is implemented there should be no room on the international shipping scene for the shipowner who seeks to operate ships which do not comply with the relevant international conventions.

In addition to these conventions, IMO Resolution A742(18) - 'Procedures for the Control of Operational Requirements Related to the Safety of Ships and Pollution Prevention' sets out procedures for the port State to assess the ability of foreign ships' crews to carry out basic safety functions and operational requirements. Resolution A742(18) provides a logical extension to the existing action by port State administrations.

PORT STATE CONTROL - APPLICATION

Control inspections, under the authority of international conventions, are carried out to ensure that foreign flag ships are seaworthy, do not pose a pollution risk, provide a healthy and safe working environment and comply with relevant conventions.

A primary inspection consists of a visit on board to verify that necessary certificates and documents are valid, as well as giving the surveyor an opportunity to judge the general appearance and condition of the vessel. Where certification is invalid or where there appears to be clear grounds to suspect that the ship and/or its equipment may not be in substantial compliance with the relevant convention standards a more detailed inspection is undertaken to determine whether the ship is substandard and/or unseaworthy.

Experiences regarding primary inspections gained by the Australian Maritime Safety Authority (AMSA) suggest that appropriate assessment of a ship's condition cannot always be ascertained from a general visual inspection of the ship and scrutiny of its certification. Consequently, a number of areas of the ship or items of equipment or machinery are identified by the surveyor for inspection in order to establish whether the ship's general condition and/or its equipment is in accordance with the standards implied by its certificates.

Grounds for carrying out a detailed inspection may consist of any of the following: a report or notification from another authority; report or complaint from the master, a crew member, or any person or organisation with a legitimate interest in the safe operation of the ship or in the prevention of pollution; and the detection of serious deficiencies during a primary inspection.

PORT STATE CONTROL IN AUSTRALIA

Australia is one of an increasing number of countries with an active and clearly defined program of port State control inspections in accordance with the authority derived from and obligations under SOLAS, MARPOL, Load Line and other relevant conventions. Port State control inspections of foreign flag ships visiting Australian ports were commenced by the Department of Transport and Communications in 1986. In February 1987 this was extended to cover health and safety standards based on the International Labour Organisation's Merchant Shipping (Minimum Standards) Convention, 1976, No 147 (ILO 147). The responsibility for, and operation of, control activities has since been transferred, along with the majority of other functions previously performed by the Maritime Operations Division of the Department, to AMSA following its establishment in 1991.

AMSA, which is managed by a Board appointed by the Minister for Transport, is responsible for a number of maritime operational and regulatory functions and administers Australian law which gives effect to international safety and pollution prevention conventions. In addition to head office staff some 45 AMSA surveyors are located in 15 coastal ports.

Australia has an obligation to implement and administer various conventions to which it is a signatory. Under its port State control regime, AMSA aims to inspect at least 25% of foreign ships visiting Australia. This percentage is based on the number of individual ships visiting Australian ports during a given year. Inspection figures by port for 1993 and for the two previous calendar years are shown at Table 1.

These figures represent inspections made by AMSA personnel. In addition, Customs officials inspect statutory certificates of all foreign vessels on arrival and departure from Australia. These non-technical certificate inspections approach 100% of all ships engaged on international voyages to and from Australia.

AMSA's 'Instructions to Surveyors' concerning port State control inspections provide guidance on the selection of ships for inspection and for uniformity of inspections. The selection system is aimed at providing the most efficient use of surveyor resources by targeting those classes of ships which experience dictates are likely to have a high risk profile. The target inspection level is designed to achieve a minimum coverage for eligible ships of 25%. For this purpose eligible ships means ships which have not been inspected by AMSA within the 6 months (3 months for passenger ships) immediately preceding the date of arrival at a port.

It is important that such inspections, as far as possible, are carried out in a uniform manner. Included in the 'Instructions to Surveyors' is an inspection guide for primary inspections and more detailed instructions related to hull and structure.

The information on control inspections carried out by AMSA is stored and collated in a computer system (SHIPSYS) which operates on a minicomputer located in Canberra.

On-line and multi-user data entry is provided via AMSA's local area network, leased lines or through public lines via modems. Details of inspections are recorded by the inspecting surveyor immediately an inspection is completed. This information is then readily available to all AMSA surveyors throughout Australia, reducing the number of visits to previously inspected ships.

The system is being continuously reviewed to ensure the integrity of the data and to simplify input procedures for users. During the year facilities were provided to increase information output, to connect all remote ports staffed by AMSA surveyors directly into the system and to improve the available range of report formats. A major overhaul of the system is likely to be undertaken in 1994 and a specialist Systems Administrator has been recruited for this.

Australia is committed to an active port State control inspection program. In the opinion of the House of Representatives Standing Committee on Transport, Communications and Infrastructure (the Committee), which conducted an inquiry into ship safety, Australia's reputation for conducting port State control inspections was tangible proof that a vigorous port State control inspection system can be effective in deterring substandard ships from coming to Australia. Further, this was deemed a major area in which Australia could directly influence levels of ship safety. The Committee's Report, 'Ships of Shame', provided further thrust to the program.

In the past the program has been carried out with little contact with other countries in the Asia-Pacific region. The introduction of an Asia-Pacific regional port State control scheme in 1994 should further strengthen the effectiveness of inspections.

Importantly, the regional port State control inspection system should serve as warning to ship owners and operators that unseaworthy and/or substandard ships will be detected and possibly detained.

PORT STATE CONTROL - INTERNATIONAL SCENE

Introduction

Widespread and growing concern caused by increasing numbers of unsafe ships has been reflected in discussions at IMO. During these discussions it was agreed that an effective method for combating the risk posed by substandard ships is port State control. It was also recognised that port State control procedures must be uniformly applied in all parts of the world to prevent unsafe ships being diverted to ports where port State control standards are either minimal or not enforced.

The experience and success of the countries participating in the Paris Memorandum of Understanding on Port State Control has shown that greater effectiveness can be achieved through regional cooperation in achieving a high level of inspections and consequential reduction in substandard ships. It enhances the effectiveness of identifying unsafe ships, coordinates action to ensure that serious deficiencies are rectified in port, and ensures that all deficiencies are rectified within an appropriate time scale.

IMO Resolution A.682(17) - 'Regional Cooperation in the Control of Ships and Discharges' recognises the important contribution to maritime safety and pollution prevention made through regional cooperation and invites Governments to consider concluding regional agreements on the application of port State control measures in cooperation with IMO.

Port State Control Initiatives in the Asia-Pacific Region

As a result of IMO Resolution A.682(17), Asia-Pacific regional cooperation on port State control has now advanced to the point where a Memorandum of Understanding (MOU) on Port State Control in the Asia-Pacific Region was adopted and signed by 16 regional States, including Australia, at the 4th and final preparatory meeting in Tokyo on 1 December 1993. The first meeting of the Port State Control Committee is to be held in Beijing in April 1994 when the Memorandum of Understanding will be open for acceptance.

Port State Control Initiatives in other Regions

Latin American countries have also put in place a Memorandum of Understanding on Port State Control, which is almost identical to the Paris MOU. Preliminary discussions on Regional Port State Control are also taking place in the Caribbean.

SIGNIFICANT DEVELOPMENTS DURING 1993

Developments Resulting from the 'Ships of Shame' Inquiry

The Report of the House of Representatives Standing Committee on Transport, Communications and Infrastructure (the Committee), 'Ships of Shame', was published in December 1992. With reference to port State control inspections, the Committee was of the view that port State control was a key element in ensuring acceptable levels of maritime safety.

The Government responded to the Report in August 1993 and accepted the general thrust of the recommendations. In some cases AMSA had already instigated changes to procedures prior to the Report's release and the safety program now benefits from those changes.

Following the inquiry a review of surveyor resources was carried out in the Pilbara region of Western Australia. To increase capabilities in this area a naval architect position was transferred from Canberra to Fremantle and an additional surveyor stationed in Karratha.

To improve the consistency of inspection outcomes by AMSA surveyors a professional development program was developed by the Australian Maritime College under contract to AMSA. The first course commenced in July 1993.

AMSA also provided monthly port State control inspection reports to a number of interested parties within the industry. This reporting system is being extended to cover additional elements recommended by the Committee, taking into account liability and privacy considerations.

Asia-Pacific Regional Cooperation on Port State Control

One significant outcome from the second preparatory meeting on Asia Pacific Cooperation on Port State Control, held in Sydney in November 1992, was the acceptance by the meeting of the offer from AMSA to fund an interim Secretariat for a period of twelve months to act as a focus for the development of cooperative port State control arrangements in the region. The interim Secretariat was established in Melbourne with effect from 1 February 1993.

During the year, the interim Secretariat developed a range of papers for the consideration of the third and final preparatory meetings held in Vancouver and Tokyo respectively. It also worked towards promoting the regional cooperative arrangements through the presentation of papers at a number of seminars and conferences both within the region and internationally, including the 22nd meeting of the European Port State Control Committee held in May 1993.

The third preparatory meeting, to further develop a cooperative approach to port State control in the Asia-Pacific region and lead towards the signing of a Memorandum of Understanding, was held in Vancouver in June 1993. One of the decisions reached at this meeting was to establish a data exchange system that will store and collate information related to all port State control inspections carried out within the Asia Pacific MOU region, operated by the Canadian Coast Guard and linked to the Paris MOU database.

The final meeting was held in Tokyo from 29 November 1993 to 2 December 1993 and resulted in:

- a Memorandum of Understanding for regional cooperation known as the Tokyo MOU;
- a target annual inspection rate of 50% of the total number of ships operating in the region by the year 2000;
- the regional PSC Secretariat of the MOU being permanently located in Tokyo.

Representatives from Australia, Canada, People's Republic of China, Fiji, Hong Kong, Indonesia, Japan, Republic of Korea, Malaysia, New Zealand, Papua New Guinea, Philippines, Russian Federation, Republic of Singapore, Solomon Islands, Thailand, Republic of Vanuatu, and the Socialist Republic of Vietnam as well as observers from the United States of America, the Paris MOU Secretariat, ILO and IMO have participated in these meetings. Sixteen of the eighteen authorities have signed the Tokyo MOU. The two outstanding, from the People's Republic of China and the Republic of Vanuatu, have indicated that they will sign the MOU at the inaugural meeting of the PSC Committee in Beijing in April 1994. The MOU is also open for acceptance from 1 April 1994.

Developments within the International Maritime Organization

IMO has recognised that not all flag States are able to ensure that their ships are fully maintained to international standards, thus placing an increased burden on port States. As part of IMO's more active approach to the safety of ships and their crews and the protection of the marine environment the Sub-Committee on Flag State Implementation (FSI) was formed.

Important objectives of the Sub-Committee are to assess the current level of implementation of IMO instruments by flag States, to assess problems being experienced by States in implementing instruments, to identify the reasons for such problems and to make proposals to assist parties to implement and comply with the provisions of the instruments.

Non-compliance with IMO instruments is an issue identified in the 'Ships of Shame' Report as being the cause of many problems of modern shipping.

The first session of the Sub-Committee was held in London in April 1993. Major issues considered were:

- guidelines for the effectiveness of flag States
- the effectiveness of bodies delegated by flag States to perform functions under IMO conventions on their behalf
- port State control
- casualty statistics and investigations
- guidelines for the control of operational requirements.

The 18th Assembly of IMO, in October/November 1993 adopted a series of resolutions designed to improve maritime safety and prevent pollution from ships. These are:

- Guidelines for the Authorisation of Organisations acting on behalf of the Administration
- Interim guidelines to assess flag States
- Procedures for the operational requirements related to the safety of ships and pollution prevention
- Guidelines on the enhanced programs of inspection during surveys of bulk carriers and oil tankers.

During the course of the 18th Assembly, the Maritime Safety and Marine Environment Protection Committees (MSC and MEPC) considered a proposal for the establishment of an IMO International Ship Information Database (ISID). It is hoped that by combining information from various national and regional databases the ISID would greatly assist efforts to improve the implementation of IMO standards by such means as port State control. A steering committee was formed to conduct a feasibility study into the establishment of the database, and report its findings and recommendations to the MSC and MEPC in 1994.

Crew Competence

The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), which is concerned with crew competence, is currently under extensive review due to the lack of internationally accepted competence criteria. This absence of criteria is inhibiting AMSA from taking a more proactive stance in the area of crew competence. This review should correct the situation and assist AMSA in its implementation of control measures to assess the ability of crews to safely operate their ships.

PORT STATE CONTROL INSPECTIONS 1993

Inspections

During 1993, inspections were carried out on 2003 ships registered in 74 countries. Table 1 gives the number of inspections carried out in each port. The total number of individual ship visits to all Australian ports during 1993 is estimated to be 17700. Many of these visits were made by regular traders and ships calling at more than one port. It is estimated that 5010 'eligible' ships (eg a foreign ship not inspected during the previous six months) visited Australian ports during 1993. This gives an inspection rate for the year of approximately 40%.

The number of ships inspected according to flag State are listed in Table 2a.

The types of ships inspected are summarised in Table 3. It will be noted that well over half the vessels (64.70%) inspected were bulk carriers. This is higher than last year's figure of 59.70%. This may be attributed to Australia's trading position as a major exporter of coal, iron ore and other bulk cargoes. Tables 4, 5 and 6 indicate the number of inspections carried out by port, including return visits, differentiating between those with and without deficiencies. The total hours of a ship's delay is also indicated.

Detentions

A ship is detained under the Navigation Act when the deficiencies observed during an inspection are considered by the inspecting surveyor to render the ship unseaworthy.

When intervention action is taken to detain a ship, AMSA follows the international convention requirements of informing the Consul or the nearest diplomatic representative of the ship's flag State and the appropriate classification society. Details of the intervention are reported to the IMO.

A ship is not deemed to be seaworthy under the Navigation Act unless:

(a) it is in a fit state as to condition of hull and equipment, boilers and machinery, stowage of ballast or cargo, number and qualifications of crew including officers, and in every other respect, to encounter the ordinary perils of the voyage then entered upon; and

(b) it is not overloaded.

Serious deterioration of the hull structure, overloading or defective equipment such as life-saving, radio and fire-fighting equipment would be considered cause to render a ship unseaworthy. Vessels which seriously breach the provisions of Australia's Marine Orders/Part II (which implements the spirit of ILO147) may also be detained if considered to be substandard. AMSA surveyors use their professional judgement to determine if a ship should be formally detained under the Navigation Act.

In 1993 72 ships registered in ~~23~~ 21 countries were observed to have deficiencies sufficiently serious to impair their seaworthiness and warrant detention. Table 2b gives the number of ships detained, according to flag State and the total number of deficiencies noted. The detention rate when expressed as a percentage of the total number of ships inspected was 3.59%. This is very similar to the last year's detention rate of 3.54%. Bulk carriers accounted for 66.67% of the ships detained in 1993.

The dominance of bulk carriers in the Australian statistics is again a reflection of the large numbers of this type of ship visiting Australia, the rigorous conditions under which they operate and their age. The total vessel detention time for the year appears in Tables 4 to 6 according to ship category.

Deficiencies

A deficiency is recorded where the condition of a ship's hull or its equipment does not conform to the requirements of the relevant IMO safety or pollution prevention conventions or where hazards to the health or safety of the crew exist which are considered to be in breach of ILO 147.

Deficiencies arise from:

- the absence of equipment or arrangements required by conventions;
- non-compliance of equipment or arrangements with the appropriate specifications of the relevant convention; and,
- substantial deterioration of the ship or its equipment, such as lifesaving appliances, fire-fighting equipment or radio equipment.

The 7186 deficiencies observed on ships in 1993 are categorised in Table 7. The number of deficiencies in each category expressed as a percentage of the total deficiencies is also shown.

Relatively minor deficiencies are found on many ships. These may not pose an immediate hazard to the safety of the ship or its crew or passengers and may be rectified during the ship's normal stay in port and without disruption to its schedule. Details of all deficiencies have been recorded in this report even though, when viewed in isolation, some may be considered as relatively minor. AMSA surveyors take into account the nature of the deficiency before deciding upon remedial action to be taken.

It will be noted that 2010 deficiencies were observed in life-saving appliances and 1558 in fire-fighting equipment. Deficiencies observed in life-saving appliances and fire-fighting equipment account for nearly half (49.65%) of the total number of deficiencies observed in 1993. Though this figure is decreased slightly from 1992, it is still alarming in view of the equipment's importance in the event of fire or a ship safety incident. It is believed many deficiencies might have been prevented with proper maintenance. Lack of maintenance may be due to inadequate management of ships by owners or operators, inadequate inspection or concern on the part of ships' officers or crew, inadequate provision of resources for adequate rectification or inadequate inspections by the flag State or inadequate surveys being undertaken by classification societies authorised by the flag State to perform inspections on its behalf.

Total Inspections by Port

TABLE 1

	NUMBER OF INSPECTIONS		
PORT	1991	1992	1993
ABBOT POINT	0	4	10
ALBANY	0	2	1
ARDROSSAN	3	0	0
BELL BAY	11	4	7
BRISBANE	68	122	120
BUNBURY	0	6	6
BUNDABERG	0	2	2
BURNIE	10	13	9
CAIRNS	6	22	17
CAPE CUVIER	0	2	0
DALRYMPLE BAY	0	6	36
DAMPIER	72	202	224
DARWIN	9	16	26
DEVONPORT	2	1	3
FREMANTLE	29	48	45
GEELONG	10	39	60
GERALDTON	0	2	1
GLADSTONE	88	120	113
HAY POINT	0	5	57
HOBART	1	3	1
KURNELL	0	0	12
KWINANA	66	86	118
LAUNCESTON	1	0	0
MACKAY	5	10	30
MELBOURNE	60	168	128
MOURILYAN	1	2	9
NEWCASTLE	48	237	232
OTHER	0	0	4
POINT WILSON	0	2	0
PORT ADELAIDE	76	104	66
PORT ALMA	3	2	2
PORT BOTANY	52	69	96
PORT GILES	0	4	1
PORT HEDLAND	26	128	139
PORT KEMBLA	20	70	158
PORT LINCOLN	4	4	5
PORT PIRIE	2	5	9
PORT STANVAC	0	5	3
PORT WALCOTT	11	45	46
PORTLAND	4	25	26
SPRING BAY	0	1	1
SYDNEY	82	102	127
THEVENARD	3	3	4
TOWNSVILLE	2	4	26
USELESS LOOP	1	0	0
WALLAROO	2	7	6
WEIPA	0	1	1
WESTERN PORT	4	14	14
WHYALLA	0	3	2
YAMPI SOUND	1	0	0
TOTAL	783	1720	2003

Total Foreign Ship Inspection by Flag

Table 2

Flag	1991	1992	1993	Flag	1991	1992	1993
Antigua and Barbados	0	5	6	Luxemburg	1	1	2
Antilles Netherlands	7	5	10	Malaysia	22	23	32
Austria	0	0	1	Malta	4	8	16
Bahamas	18	65	63	Isle of Man	2	1	6
Bangladesh	1	0	0	Marshall Islands	1	6	7
Belgium	1	2	4	Mauritius	1	2	3
Bermuda	3	5	9	Mynamar (Burma)	0	18	11
Brazil	1	2	2	Netherlands	14	20	27
Bulgaria	0	5	1	New Zealand	3	11	7
Cayman Islands	0	0	5	Norway	61	93	104
Chile	0	2	1	Panama	101	273	298
China, People's Republic	53	106	107	Papua New Guinea	1	0	1
Colombia	0	1	0	Philippines	64	161	169
Cyprus	19	40	55	Poland	1	2	3
Czechoslovakia	1	0	1	French Polynesia	0	0	2
Denmark	4	23	21	Portugal	0	0	1
Egypt	3	15	12	Qatar	0	0	1
Estonia	0	0	1	Romania	2	0	6
Fiji	2	1	5	Russia	0	0	8
France	3	12	10	Saint Vincent and Grenadines	5	17	12
Germany	9	20	31	Samoa	0	1	0
Gibraltar	1	4	2	Saudi Arabia	5	8	3
Greece	54	119	143	Singapore	16	60	69
Honduras	2	1	4	Sri Lanka	1	1	1
Hong Kong	26	57	95	Suriname	0	0	1
India	15	23	48	Sweden	1	2	3
Indonesia	4	5	9	Switzerland	1	1	3
Iran	9	9	28	Taiwan	12	32	35
Ireland	0	0	1	Thailand	2	1	4
Israel	2	1	2	Tonga	6	3	5
Italy	6	5	10	Turkey	4	11	11
Japan	44	90	109	Union of Soviet Socialist Republic	34	48	40
Jordan	0	0	1	United Arab Emirates (UAE)	2	1	1
Korea, Democratic People's Rep.	1	10	13	United Kingdom	6	23	21
Korea Republic	13	36	48	United States of America	1	0	1
Kuwait	4	5	6	Vanuatu	6	12	16
Lebanon	1	5	3	Venezuela	0	0	2
Liberia	77	170	199	Yugoslavia	10	5	1
				Others	9	26	4
				TOTAL	783	1720	2003

Most Frequent Inspections According to Flag

Table 2a

INSPECTION BY FLAG	1991	1992	1993
Panama	101	273	298
Liberia	77	170	199
Philippines	64	161	169
Greece	54	119	143
Japan	44	90	109
People's Republic of China	53	106	107
Norway	61	93	104
Hong Kong	26	57	95
Singapore	0	60	69
Bahamas	18	65	63
Total	**498**	**1194**	**1356**

Total Ships Detained by Flag

Table 2b

Table 2b

DETENTION BY FLAG	Number of Ships Detained	Number of Deficiencies*	Number of Ships Inspected	Detentions as a % of ships Inspected
Saint Vincent and the Grenadines	4	32	12	33
Honduras	1	13	4	25
Malta	3	38	16	19
Indonesia	1	72	9	11
Antilles, Netherlands	1	2	10	10
People's Republic of China	10	99	107	9
Turkey	1	15	11	9
Egypt	1	27	12	8
India	4	62	48	8
Philippines	13	106	169	8
Malaysia	2	17	32	6
Union of Soviet Socialist Republics (Russia & Ukraine)	2	13	40	5
Cyprus	2	32	55	4
Korea Republic	2	16	48	4
Panama	12	62	298	4
Norway	3	14	104	3
Hong Kong	2	18	95	2
Japan	2	9	109	2
Liberia	3	16	199	2
Greece	2	18	143	1
Singapore	1	1	69	1
Total	**72**			

* Number of deficiencies only refer to ships detained

Total Foreign Ships Inspected By Vessel Type

Table 3

Vessel Type	1991	1992	1993
Chemical Tankship	21	55	54
Combine Oil/Chemical	0	1	5
Containership	60	128	144
Dry Bulk Carrier	430	1027	1296
Dynamically Supported Craft	0	1	0
Factory Ship	0	0	1
Ferry	13	18	10
Fishing Vessel	0	1	3
Gas Carrier	15	14	39
General Dry Cargo	78	138	128
Heavy Load Carrier	3	6	9
Livestock Carrier	9	19	17
Oil Tankship	43	68	92
Ore/Bulk/Oil Carrier	10	48	26
Other Type	19	32	8
Pallets Carrier	0	1	0
Passenger V/L	0	0	11
Refrigerated Cargo Carrier	0	0	28
Research Ship	0	0	1
Ro-Ro Cargo Ship	13	37	42
Special Purpose Vessel	1	1	2
Supply Ship	0	5	4
Survey Vessel	1	1	1
Tankship - Other Types	10	21	21
Tug/Towing Vessel	3	3	6
Vegetable Oil Tankship	2	1	1
Vehicle Carrier	16	32	39
Woodchip Carrier	0	0	15
TOTAL	**783**	**1720**	**2003**

Bulk Carrier Inspections

Table 4

PORT	Inspections Without Deficiencies						Inspections With Deficiencies						Hours delayed due to Deficiencies		
	NUMBER			PERCENTAGE			NUMBER			PERCENTAGE					
	1991	1992	1993	1991	1992	1993	1991	1992	1993	1991	1992	1993	1991	1992	1993
Abbot Point		1	4		25.00	44.44		3	5		75.00	55.56			
Albany								1	1		100.00	100.00			
Ardrossan	1			33.33			2			66.67					
Bell Bay	3	1		33.33	25.00		6	3	6	66.67	75.00	100.00			
Brisbane	8	20	5	23.53	38.46	12.20	26	32	36	76.47	61.54	87.80			
Bunbury		3	1		60.00	16.67		2	5		40.00	83.33			102
Bundaberg								2	1		100.00	100.00			
Burnie	4	2	2	80.00	22.22	28.57	1	7	5	20.00	77.78	71.43			
Cairns		1			8.33			11	10		91.67	100.00			72
Cape Cuvier								2			100.00				
Dalrymple Bay		2	10		33.33	28.57		4	25		66.67	71.43		17	
Dampier	9	70	51	14.06	38.67	25.12	56	111	152	85.94	61.33	74.88	500	978	1092
Darwin	2		2	40.00		40.00	3	3	3	60.00	100.00	60.00			
Devonport			1			50.00			1			50.00			
Eden									1			100.00			
Fremantle	2	2	1	66.67	33.33	20.00	1	4	4	33.33	66.67	80.00			
Geelong			2			6.25	6	21	30	100.00	100.00	93.75		120	168
Geraldton		1			50.00			1	1		50.00	100.00			114
Gladstone	42	63	25	50.00	59.43	26.88	42	43	68	50.00	40.57	73.12	168	13	995
Gove			1			50.00			1		50.00				
Groote Eylandt									2		100.00				
Hay Point		2	21		66.67	36.84		1	36		33.33	63.16			
Hobart								1			100.00			144	
Kwinana	22	21	24	44.90	33.87	27.59	27	41	63	55.10	66.13	72.41			408
Lucinda			1			100.00									
Mackay	3	2	11	60.00	22.22	39.29	2	7	17	40.00	77.78	60.71			
Melbourne	1	1	2	6.67	3.70	11.76	14	26	15	93.33	96.30	88.24			
Mourilyan	1			100.00				2	7		100.00	100.00			
Newcastle	5	45	44	12.50	21.13	19.91	35	168	177	87.50	78.87	80.09	627	1527	65
Point Wilson								2			100.00				
Port Adelaide	3	2	7	7.89	4.17	16.67	35	46	35	92.11	95.83	83.33	1		
Port Botany	1		2	50.00		100.00	1	1		50.00	100.00				

Table 4 Continued

PORT	Inspections Without Deficiencies						Inspections With Deficiencies						Hours delayed due to Deficiencies		
	NUMBER			PERCENTAGE			NUMBER			PERCENTAGE					
	1991	1992	1993	1991	1992	1993	1991	1992	1993	1991	1992	1993	1991	1992	1993
Port Giles			1			100.00		4			100.00				
Port Hedland	4	12	2	18.18	10.34	1.53	18	104	129	81.82	89.66	98.47	8	303	529
Port Kembla	2	10	45	11.76	16.67	31.03	15	50	100	88.24	83.33	68.97	2159	1332	7
Port Lincoln			1			20.00	4	4	4	100.00	100.00	80.00			
Port Pirie							2	5	8	100.00	100.00	100.00			
Port Walcot	2	12	13	22.22	40.00	34.21	7	18	25	77.77	60.00	65.79	44	587	
Portland	1			50.00			1	15	20	50.00	100.00	100.00		144	
Spring Bay		1			100.00										
Sydney	2	5	6	14.29	25.00	37.5	12	15	10	85.71	75.00	62.5		140	
Thevenard							1	2	4	100.00	100.00	100.00			
Townsville							1	3	16	100.00	100.00	100.00			
Useless Loop							1			100.00			84		
Wallaroo							2	7	5	100.00	100.00	100.00			
Weipa								1	1		100.00	100.00			
Western Port							1	4	2	100.00	100.00	100.00			
Whyalla		1			33.33			2	2		66.67	100.00			817
Yampi Sound	1			100.00											
TOTAL	**119**	**280**	**285**				**332**	**779**	**1033**				**3591**	**5305**	**436**

Tanker Inspections

Table 5

PORT	Inspections Without Deficiencies						Inspections With Deficiencies						Hours delayed due to Deficiencies		
	NUMBER			PERCENTAGE			NUMBER			PERCENTAGE					
	1991	1992	1993	1991	1992	1993	1991	1992	1993	1991	1992	1993	1991	1992	1993
Barrow Is	1			100.00											
Bell Bay								1			100.00				
Brisbane	6	4	10	42.86	18.18	28.57	8	18	25	57.14	81.82	71.43			70
Bunbury								1			100.00				
Burnie								1	1		100.00	100.00			
Cairns							3	1	1	100.00	100.00	100.00			
Darwin		1	2		50.00	66.67		1	1		50.00	33.33			
Fremantle	1		2	100.00		100.00		2			100.00				
Geelong	6	2	3	42.86	18.18	23.08	8	9	10	57.14	81.82	76.92			
Gladstone		11	14		61.11	58.33	2	7	10	100.00	38.89	41.67			
Kurnell			8			72.73			3			27.27			
Kwinana	4	8		50.00	66.67		4	4	2	50.00	33.33	100.00			24
Mackay		1			100.00										
Melbourne	5	2	13	33.33	4.00	32.50	10	48	27	66.67	96.00	67.50	10	1	
Newcastle									1			100.00			
Port Adelaide		1			20.00		2	4		100.00	80.00				
Port Botany	6	7	19	50.00	46.66	67.86	6	8	9	50.00	53.33	32.14			18
Port Hedland								3	1		100.00	100.00			
Port Stanvac		1			20.00			4			80.00				
Portland									1			100.00			
Sydney	5	5	18	62.50	38.46	47.37	3	8	20	37.50	61.54	52.63	999	31	
Townsville									1			100.00			
Western Port	3	1	5	42.86	33.33	38.46	4	2	8	57.14	66.67	61.54			
TOTAL	**37**	**44**	**94**				**50**	**122**	**121**				**1009**	**32**	**112**

Other Type of Vessel Inspections

Table 6

PORT	Inspections Without Deficiencies						Inspections With Deficiencies						Hours delayed due to Deficiencies		
	NUMBER			PERCENTAGE			NUMBER			PERCENTAGE					
	1991	1992	1993	1991	1992	1993	1991	1992	1993	1991	1992	1993	1991	1992	1993
Abbot Point									1			100.00			
Albany								1			100.00				
Barrow Is								1			100.00				
Bell Bay	3			100.00					1			100.00			
Brisbane	7	28	38	21.21	36.36	41.30	26	49	54	78.79	63.64	58.7			180
Bundaberg									1			100.00			
Burnie	2	1	1	40.00	33.33	50.00	3	2	1	60.00	66.67	50.00			
Cairns	1	2		33.33	22.22		2	7	8	66.67	77.78	100.00			1
Dalrymple Bay			1			100.00									
Dampier	8	16	19	72.73	55.17	51.35	3	13	18	27.27	44.83	48.65			39
Darwin	4	1	6	80.00	7.69	31.58	1	12	13	20.00	92.31	68.42			221
Devonport	2	1	1	100.00	100.00	100.00									
Fremantle	9	9	20	34.62	21.95	51.28	17	32	19	65.38	78.05	48.72			
Geelong	3	2	3	50.00	13.33	11.54	3	13	23	50.00	86.67	88.46			
Gladstone		4	10		50.00	50.00	3	4	10	100.00	50.00	50.00			
Hay Point		1			50.00			1			50.00				
Hobart		2			100.00		1		1	100.00		100.00			
Kurnell			21			80.77			5			19.23			
Kwinana	14	43	44	66.70	66.15	69.84	7	22	19	33.33	33.85	30.16		72	
Launceston	1			100.00											
Mackay									2			100.00			
Melbourne	9	12	18	19.15	9.92	17.31	38	109	86	80.85	90.08	82.69	61	16	4
Mourilyan									2			100.00			
Newcastle	1	5	2	12.50	20.83	20.00	7	19	8	87.50	79.17	80.00			
Port Adelaide	6	5	4	16.22	9.26	15.38	31	49	22	83.78	90.74	84.62	148		
Port Alma		2	1		100.00	50.00	3		1	100.00		50.00			
Port Botany	18	23	61	94.73	31.08	60.40	1	51	40	5.29	68.91	39.60			
Port Bonython									1			100.00			
Port Giles								1			100.00				
Port Hedland		2	2		22.22	25.00	4	7	6	100.00	77.78	75.00			175
Port Kembla		2	5		18.18	33.33	3	9	10	100.00	81.82	66.67			195
Port Pirie									1			100.00			
Port Stanvac		3	2		42.86	28.57	1	4	5	100.00	57.14	71.43			
Port Walcot	1	5	2	50.00	33.33	25.00	1	10	6	50.00	66.67	75.00			
Portland							2	10	5	100.00	100.00	100.00		164	264
Spring Bay									1			100.00			
Sydney	28	20	76	38.89	22.73	60.32	44	68	50	61.11	77.27	39.68			30
Thevenard							2	1		100.00	100.00		186		
Townsville							1	1	10	100.00	100.00	100.00			48
Wallaroo									1			100.00			
Western Port	4	4	2	50.00	30.77	13.33	4	9	13	50.00	69.23	86.67			
TOTAL	**121**	**193**	**339**				**208**	**505**	**445**				**395**	**252**	**1157**

Total and Percentage of Deficiency Categories

Table 7

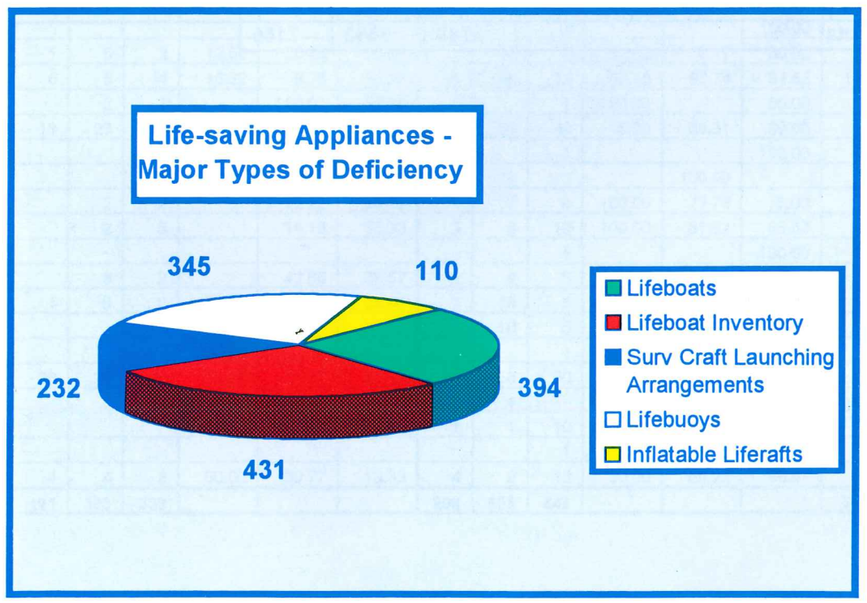
Deficiency Categories	Number of Occurrences			Percentage of Total		
	1991	1992	1993	1991	1992	1993
Life-saving Appliances	840	2920	2010	30.13	30.16	27.97
Fire Fighting Appliances	521	2088	1558	18.69	21.57	21.68
General Safety	269	897	919	9.65	9.26	12.79
Load Lines	258	915	695	9.25	9.45	9.67
Navigation Equipment	198	659	478	7.10	6.81	6.65
Propulsion and Auxiliary Machinery	138	374	316	4.95	3.86	4.40
Food and Catering	137	399	280	4.91	4.12	3.90
Accommodation	171	513	277	6.13	5.30	3.85
Cargo	61	148	137	2.19	1.53	1.91
Marpol Annex I (Oil)	11	79	109	0.39	0.82	1.52
Mooring Arrangements	11	76	97	0.39	0.78	1.35
Ship's Certificates	24	76	76	0.86	0.78	1.06
Radio	26	85	57	0.93	0.88	0.79
Crew Qualifications/Crew	20	59	42	0.72	0.61	0.58
Accident Prevention	13	73	40	0.47	0.75	0.56
Unknown Category Codes	38	178	37	1.36	1.84	0.51
Working Space	26	50	24	0.93	0.52	0.33
Tankers	4	31	18	0.14	0.32	0.25
Alarm Signals	8	29	9	0.29	0.30	0.13
Other Deficiencies	6	12	5	0.22	0.12	0.07
Marpol Annex II (Chemicals)	8	21	2	0.29	0.22	0.03
Total	**2788**	**9682**	**7186**			

DEFICIENCIES BY CATEGORIES

Life-saving Appliances

Life-saving appliances are essential to the survival of the crew and other on board personnel. It is therefore imperative that they be well maintained and ready for immediate use. The number of deficiencies observed in different types of life-saving equipment is given in Table 8. For 1993 this amounted to 27.97% of all deficiencies noted. The deficiencies found in individual items of equipment expressed as a percentage of all deficiencies is also given.

As was the case in 1992 more deficiencies were found in lifeboats and lifebuoys than any other type of life-saving appliance. Examples of deficiencies found in life-saving appliances include: holes in lifeboats; inoperative lifeboat engines; lifebuoy lights not working or missing; excessive wear on lifting hooks in lifeboats; life-jacket lights missing; retro-reflective tape missing from equipment; lifeboat engine mountings badly corroded; safety equipment not in lifeboats, and lifeboat launching systems inoperative.



Life Saving Appliances - Deficiencies

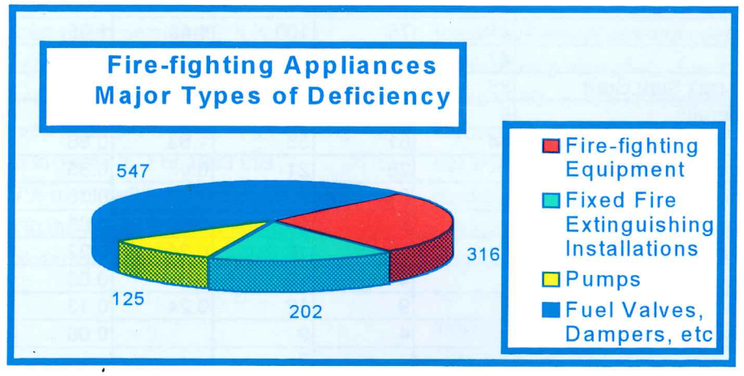
Table 8

ITEM	NUMBER OF OCCURRENCES			PERCENTAGE OF TOTAL DEFICIENCIES		
	1991	1992	1993	1991	1992	1993
Lifeboat Inventory	143	411	431	4.97	5.77	6.00
Lifeboats	173	447	394	6.02	6.28	5.48
Lifebuoys	191	433	345	6.64	6.08	4.80
Launching Arrg't for Surv Craft	61	189	232	2.12	2.65	3.23
Inflatable Liferafts	68	107	110	2.36	1.50	1.53
Distress Flares	41	75	100	1.43	1.05	1.39
Lifejackets	47	97	85	1.63	1.36	1.18
Embarkation Arrg't Surv.Craft	35	77	67	1.22	1.08	0.93
Stowage of Liferafts	8	65	61	0.28	0.91	0.85
Other	44	61	53	1.53	0.86	0.74
Training/Instruction Manual	2	25	21	0.07	0.35	0.29
Stowage of Lifeboats		25	20		0.35	0.28
Launching Arrg't for Rescue Boats	1	6	18	0.03	0.08	0.25
EPIRB's for Surv Craft	7	16	16	0.24	0.22	0.22
Means of Recovery of LSA		4	13		0.06	0.18
Line-Throwing Appliances	7	9	12	0.24	0.13	0.16
Embarkation Arrg't Rescue Boats		4	9		0.06	0.12
Rescue Boat			7			0.10
Immersion Suits	4	4	4	0.14	0.06	0.05
Thermal Protective Aids		4	3		0.06	0.04
Record of Inspect/Maintenance		2	3		0.03	0.04
Buoyant Apparatus	3	1	3	0.10	0.01	0.04
Emerg. Equip for 2-Way Commun		1	1		0.01	0.01
General Emergency Alarm		1	1		0.01	0.01
Rigid Liferaft			1			0.01
Portable Radio App.for Surv Craft	5	1	0	0.17	0.01	0.13
Rescue Boat Inventory		13			0.18	
Stowage of Rescue Boats		2			0.03	

Fire-fighting Appliances

Fire is perhaps the greatest hazard faced by ships' crews. It is therefore vital that appliances used to fight fires be well maintained and ready for immediate use. Table 7 shows that 21.68% of all deficiencies noted in 1993 were related to fire-fighting equipment. Table 9 shows the number of deficiencies noted in different types of equipment. The percentage of each when related to all deficiencies is also shown.

Typical examples of deficiencies related to the detection, extinction or risk of fire are: fire hoses missing; fire hose nozzles missing; defective breathing apparatus; excessive oil accumulation in machinery spaces; fire detectors broken; fire extinguishers missing or in poor condition; fire hoses holed; fire main holed; air exclusion flaps on ventilators serving cargo and machinery spaces broken, missing or inoperative.



Fire-fighting Appliances - Major Deficiencies

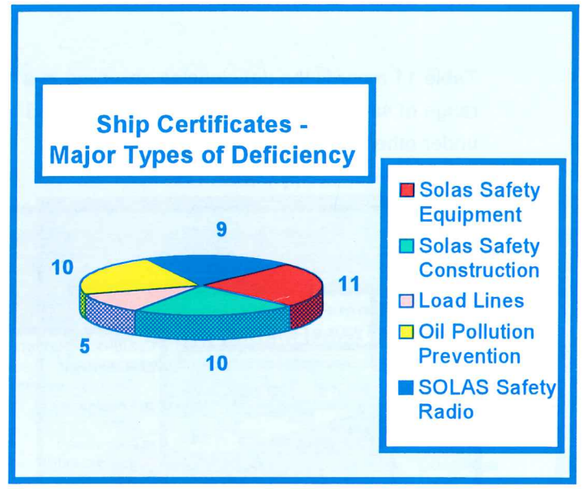
Table 9

ITEM	NUMBER OF OCCURRENCES			PERCENTAGE OF TOTAL DEFICIENCIES		
	1991	1992	1993	1991	1992	1993
Fuel Oil Valves, Dampers, etc	200	513	547	6.95	7.21	7.61
Fire-fighting Equipment	146	391	316	5.08	5.49	4.40
Fixed Fire Extinguishing Installations	33	205	202	1.15	2.88	2.81
Other	39	105	126	1.36	1.47	1.75
Pumps	29	112	125	1.01	1.57	1.74
Appliances (General Equipment)	37	77	81	1.29	1.08	1.13
Prevention	11	49	65	0.38	0.69	0.90
International Shore Connection	6	27	48	0.21	0.38	0.67
Personal Equipment	15	79	41	0.52	1.11	0.57
Detection (System)	3	5	5	0.10	0.07	0.07
Inert Gas System	2	4	2	0.07	0.06	0.03

Ship's Certificates

Certificates are issued to ships under the international conventions concerned with ship safety and prevention of marine pollution. They are important because they provide prima facie evidence of compliance with the requirements of the relevant convention. The number of deficiencies observed in certificates issued to ships amounted to some 1.06% (Table 7) of the total number of deficiencies observed.

Examples of deficient certification are: period of validity expired; overdue periodic inspections; failure to issue new certificates when a ship transfers from one flag State to another, and documents incomplete. Table 10 indicates the number of ships inspected with deficient or invalid certificates by certificate type.



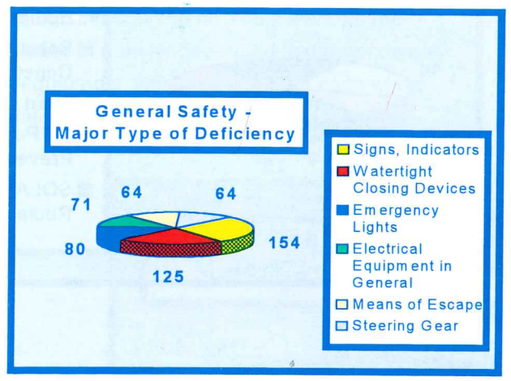
Ship's Certificates - Deficiencies

Table 10

ITEM	NUMBER OF OCCURRENCES			PERCENTAGE OF TOTAL DEFICIENCIES		
	1991	1992	1993	1991	1992	1993
Other	5	6	25	0.17	0.08	0.35
SOLAS Safety Equipment	4	18	11	0.14	0.25	0.15
SOLAS Safety Construction	1	11	10	0.03	0.15	0.14
Oil Pollution Prevention (IOPP)	5	7	10	0.17	0.10	0.14
SOLAS Safety Radio	6	2	9	0.21	0.03	0.12
Load Lines	3	8	5	0.10	0.11	0.07
Ship Log Book - Entries			2			0.03
Liquid Gases Bulk (COF/GC Code)			1			0.01
Liquid Gases Bulk (COF/IGC Code)			1			0.01
Minimum Safe Manning Certificate			1			0.01
D of C (Dangerous Goods)			1			0.01

General Safety

Table 11 records the deficiencies observed in a range of safety items other than those included under other specific categories. This category accounts for 12.79% (Table 7) of the total number of deficiencies observed. Of particular note is the structural category (hull, decks, bulkheads etc). This includes damage and deterioration of the hull which frequently rendered the ship unseaworthy. The number of structural deficiencies observed under this item amount to about 6% of the total number of deficiencies in this category. Damaged gangways, accommodation ladders, pilot ladders, improperly adjusted steering gear, corroded cable trays and trunking, safety plans not exhibited, faulty closing appliances and electrical systems, and serious wastage or fracture of hull side frames, transverse deck beams and deck plating are examples of deficiencies in this general category.



General Safety - Deficiencies

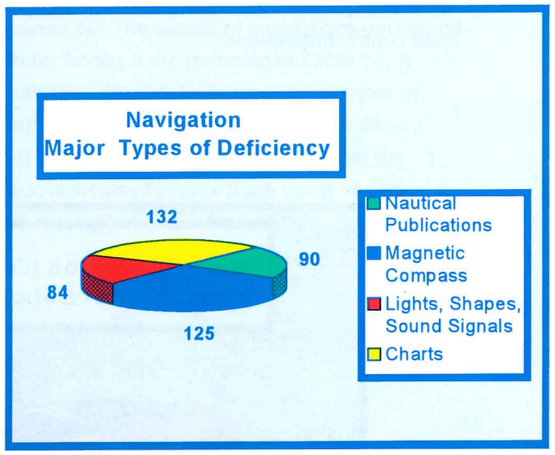
Table 11

ITEM	NUMBER OF OCCURRENCES			PERCENTAGE OF TOTAL DEFICIENCIES		
	1991	1992	1993	1991	1992	1993
Signs, Indicators	11	66	154	0.38	0.93	2.14
Other	35	94	127	1.22	1.32	1.77
Hydrl/Closing Devs/Watertight	24	71	125	0.83	1.00	1.74
Emergency Lights, Batts, Switches	27	57	80	0.94	0.80	1.11
Electric Equipment in General	10	53	71	0.35	0.74	0.99
Means of Escape	27	42	64	0.94	0.59	0.89
Steering Gear	6	32	64	0.21	0.45	0.89
Decks, Beams, Hull, Bulkheads	38	70	55	1.32	0.98	0.77
Gangway, Accommodation Ladder	31	60	48	1.08	0.84	0.67
Pilot Ladders	27	24	31	0.94	0.34	0.43
Musters and Drills	5	13	30	0.17	0.18	0.42
Stability/Strength	0	10	23	0	0.14	0.32
Ballast Fuel and Other Tanks	13	18	17	0.45	0.25	0.24
Safety Plans	10	17	17	0.35	0.24	0.24
Emergency Installations	4	1	8	0.14	0.01	0.11
Hull Damage Impairing Seaworthiness	1	0	5	0.03		0.07

Navigation

The availability of up to date charts and publications such as nautical almanacs, tide tables, sailing directions, lists of lights and radio signals, make an important contribution to ship safety. They enable a ship's position to be determined relative to geographical features and navigation hazards. Well maintained electronic equipment such as radar, depth indicators, gyro compasses also assists safe navigation and position finding. Radar, navigational lights and day signals and ship's whistles assist in the avoidance of collisions with other ships.

The number of deficiencies observed in respect of each item are tabulated in Table 12, together with the corresponding percentage related to the total number of deficiencies. These deficiencies represented 6.65% of all deficiencies observed in 1993. Examples of typical deficiencies in this category are: out of date charts; insufficient charts for the intended voyage; magnetic compasses requiring correction; defective navigation lights; publications missing and direction finding equipment defective.



Navigation Equipment - Deficiencies

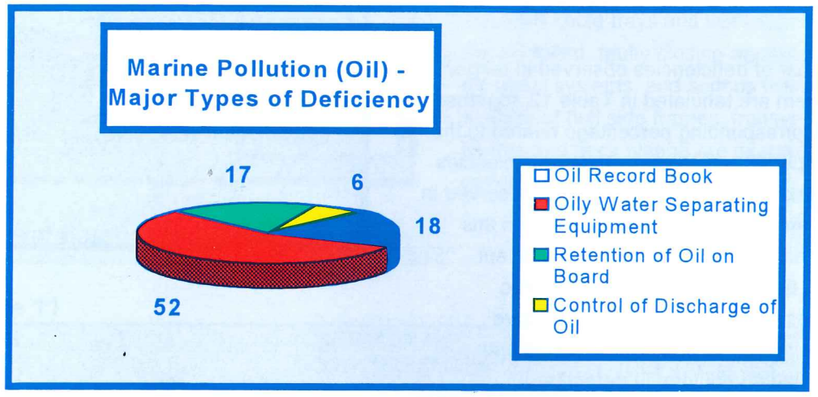
Table 12

ITEM	NUMBER OF OCCURRENCES			PERCENTAGE OF TOTAL DEFICIENCIES		
	1991	1992	1993	1991	1992	1993
Charts	47	134	132	1.63	1.88	1.84
Magnetic Compass	70	138	125	2.43	1.94	1.74
Nautical Publications	16	44	90	0.56	0.62	1.25
Lights, Shapes, Sound Signals	39	93	84	1.36	1.31	1.17
Other	4	13	13	0.14	0.18	0.18
Radar	8	11	12	0.28	0.15	0.16
Gyro Compass	3	3	7	0.10	0.04	0.10
Shipborne Navigational Equip	3	8	5	0.10	0.11	0.07
Signalling Lamp	2	9	4	0.07	0.13	0.05
Equipment	2	4	4	0.07	0.06	0.05
Echo Sounder	2	3	1	0.07	0.04	0.01
Revolution Counter			1			0.01
Log		1			0.01	
International Code of Signals	2			0.07		

Marine Pollution - Oil

Annex 1 of the International Convention for the Prevention of Pollution from Ships prescribes practices to be observed and equipment to be carried on ships to protect the world's oceans from pollution by oil discharged from ships. The requirements of Annex 1 are audited during port state control inspections.

Table 13 records the number of deficiencies observed in each category and the percentage of each in relation to the total number of deficiencies observed. For 1993 these deficiencies accounted for 1.52% of all deficiencies. Typical examples of the deficiencies observed in this category are: oil record book missing or entries not up to date; equipment for separating oil from water not in working order and devices for measuring the oil content of water not working.



Marpol - Annex 1 (Oil) - Deficiencies

Table 13

ITEM	NUMBER OF OCCURRENCES			PERCENTAGE OF TOTAL DEFICIENCIES		
	1991	1992	1993	1991	1992	1993
Oily Water Separating Equip	2	18	52	0.07	0.25	0.72
Oil Record Book	2	19	18	0.07	0.27	0.25
Retention of Oil on Board	2	3	17	0.07	0.04	0.23
Control of Discharge of Oil		8	6		0.11	0.08
Oil Disch. Monitor Cont. System		10	4		0.14	0.05
Pump Piping and Disch Arr't			4			0.05
15 ppm Alarm Arrangements		6	3		0.08	0.04
Other	2	2	3	0.07	0.03	0.04
Segregated Oil and Water Ballast	3		2	0.10		0.03
Standard Discharge Connection		2			0.03	

Marine Pollution - Chemicals

The purpose of Annex II of the International Convention for the Prevention of Pollution from Ships is to protect the seas from pollution by noxious liquid substances carried on chemical tankers. These substances may be harmful to human health and marine resources. Examples of noxious liquid substances are coal tar, hydrochloric acid, motor fuel anti-knock compounds and vegetable oils.

Annex II requires, amongst other things, that details of all operations involving cargo or ballast should be recorded in a Cargo Record Book.

This record is required to be kept on board ships engaged in the carriage of noxious liquid substances in bulk and made available for inspection. The results of inspections performed under Annex II are recorded in Table 14. A feature of the results is the small number of deficiencies observed, 2 or 0.03% of all deficiencies The results indicated that the requirements of Annex II are being observed by the majority of chemical tankers.

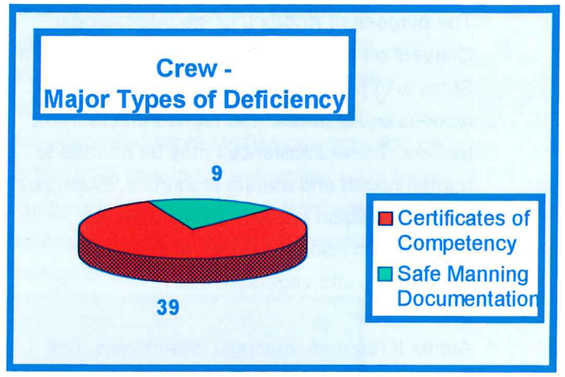
Marine Pollution - Chemicals - Deficiencies

Table 14

ITEM	NUMBER OF OCCURRENCES			PERCENTAGE OF TOTAL DEFICIENCIES		
	1991	1992	1993	1991	1992	1993
Other (Annex II)	7	9	1	0.24	0.12	0.01
Prohibited disch of NLS Slop			1			0.01
Cargo Record Book	1	3		0.03	0.04	
Tankwashing Equipment		1			0.01	
Cargo Heat/System Cat B Subs		1			0.01	
Pollution Report		1			0.01	

Crew

It is a requirement of the STCW Convention for the crews of ships to be properly trained and qualified. These elements of manning are important because the safety of a ship, its crew, passengers, cargo and the protection of the marine environment depend to a large extent on the training, experience and competence of the crew. The majority of deficiencies in this category relate to the minimum international standards for certificates issued under the STCW Convention. It is the responsibility of each flag State to determine the manning of ships under its jurisdiction and to issue each ship with a safety manning certificate.



Where the number and category of seafarers on a ship comply with such a document it is accepted as evidence that a ship is safely manned. If a ship does not carry such a document and doubt arises as to whether it is safely manned, the matter is resolved in consultation with the appropriate authority of the flag State concerned.

The types of deficiency in this category, their number and the percentage of each in relation to the total number of deficiencies observed in 1993 are recorded in Table 15. For 1993 these deficiencies accounted for 0.58% of all deficiencies. Examples of deficiencies in each category include navigational watches being kept by uncertificated officers; and officers' certificates not being endorsed for the particular type of ships they are serving on (eg oil tankers, gas carriers and chemical tankers).

Crew Qualification - Deficiencies

Table 15

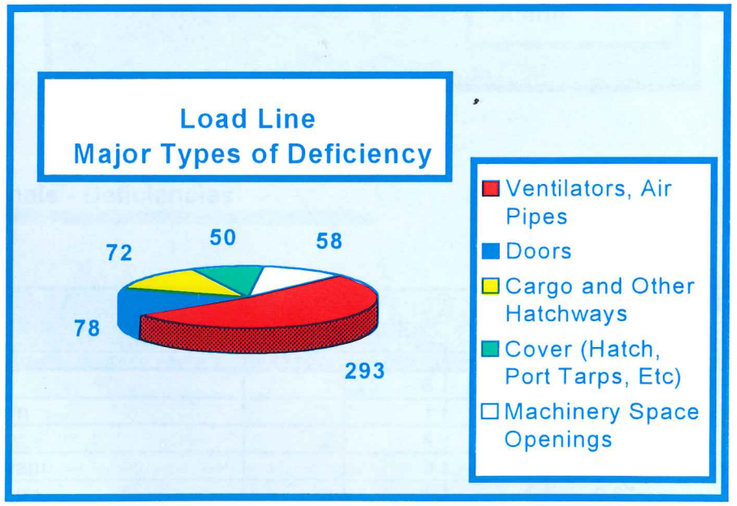
ITEM	NUMBER OF OCCURRENCES			PERCENTAGE OF TOTAL DEFICIENCIES		
	1991	1992	1993	1991	1992	1993
Certificates of Competency	16	24	33	0.56		0.46
Safe Manning	4	6	9	0.14	0.08	0.12
Other		9			0.13	

Load Line

The International Load Line Convention 1966 requires load lines to be marked on the sides of commercial ships. Load lines indicate the maximum permissible draft to which a ship may be loaded. Its observance prevents ships being overloaded and ensures that adequate reserve buoyancy is maintained. Another objective of the Convention is the provision of a safe working platform for the crew.

A ship's reserve buoyancy is dependent on openings through which water may enter the hull, being maintained in a watertight condition. Water entry may occur for example through port holes, doorways, cargo hatch openings, ventilators and air pipes. Features of a ship which contribute to achieving a safe working platform include well maintained bulwarks, external ladders and rails at ship sides.

The results of the inspections of load line matters in 1993 are tabulated in Table 16. These deficiencies amounted to 9.67% of all deficiencies observed. It will be noted that the condition of ventilators, air pipes, doors and hatchways on 443 occasions had deteriorated sufficiently to warrant repair. This represents 63.74% of the total number of deficiencies recorded in the load line category and some 6.01% of all deficiencies observed. Many of these could have been avoided by adequate maintenance. Examples of other deficiencies in this category are: cargo hatch cover securing devices missing or inoperable; sounding pipe caps missing; air pipes holed; securing devices on watertight doors missing; holes in cargo hatch covers; doors not watertight; manhole covers corroded; unsafe external ladders and rails at the side of ships broken or missing.



Load Line - Major Deficiencies

Table 16

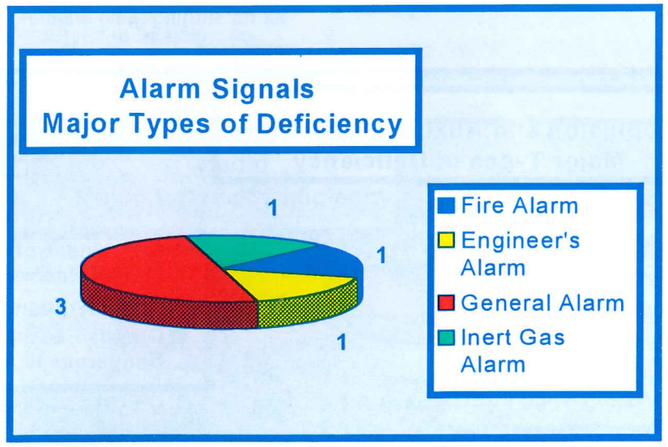
ITEM	NUMBER OF OCCURRENCES			PERCENTAGE OF TOTAL DEFICIENCIES		
	1991	1992	1993	1991	1992	1993
Ventilators, Air Pipes	91	280	293	3.16	3.93	4.08
Doors	46	120	78	1.60	1.69	1.09
Cargo and Other Hatchways	31	86	72	1.08	1.21	1.00
Machinery Space Openings	9	32	58	0.31	0.45	0.81
Cover (Hatch, Port Tarps, Etc)	18	34	50	0.63	0.48	0.70
Railings, Catwalks	18	37	43	0.63	0.52	0.60
Other	21	27	35	0.73	0.38	0.49
Windows, Side Scuttles	9	18	29	0.31	0.25	0.40
Freeboard Marks	5	9	15	0.17	0.13	0.21
Manholes/Scuttles	9	8	10	0.31	0.11	0.14
Scuppers, Inlets, Etc		6	10		0.08	0.14
Freeing Ports	1		1	0.03		0.01
Cargo Ports, Etc			1			0.01

Alarm Signals

Alarms indicate the existence of a potentially unsafe condition and consequently may contribute significantly to the safety of the ship. Alarms can be categorised as emergency and primary alarms. The former includes general and fire alarms. General alarms are used to alert persons on a ship to an emergency and to summon passengers and crew to muster stations. Fire alarms summon crews to fight fires.

Primary alarms alert the crew to a condition which requires prompt attention to prevent an emergency condition arising. Examples are flooding and machinery malfunction alarms.

Nine alarms of various types were found to be either inoperable or not working satisfactorily. This represented 0.13% of all deficiencies observed. Table 17 gives the distribution of deficiencies under this category.



Alarm Signals - Deficiencies

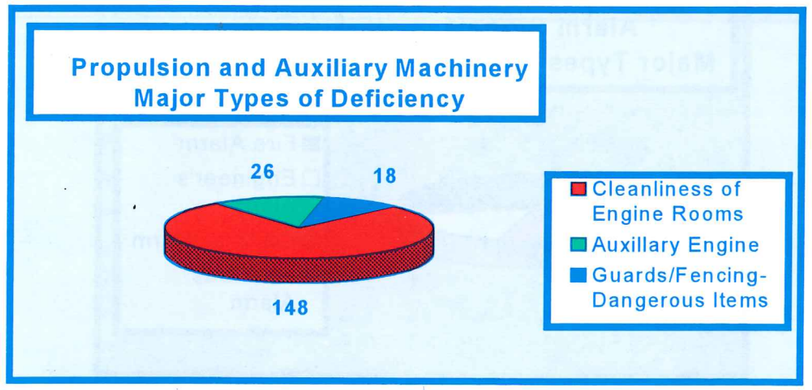
Table 17

ITEM	NUMBER OF OCCURRENCES			PERCENTAGE OF TOTAL DEFICIENCIES		
	1991	1992	1993	1991	1992	1993
Other	1	6	3	0.03	0.08	0.04
General Alarm	1	1	3	0.03	0.01	0.04
Fire Alarm	2	4	1	0.07	0.06	0.01
Engineer's Alarm		3	1		0.04	0.01
Inert Gas Alarm	2		1	0.07		0.01
Steering Gear Alarm	2	5		0.07	0.07	
Machinery Controls Alarm		1			0.01	
Boiler Alarms		1			0.01	

Propulsion and Auxiliary Machinery

The engine rooms of ships and other spaces containing machinery are high risk fire areas because of the presence of hot surfaces and combustible oil. It is therefore important that good 'house-keeping' practices be adopted to prevent the accumulation of oil and other combustible material in these spaces. The results of machinery space inspections are recorded in Table 18. For 1993 such deficiencies accounted for 4.40% of all observed deficiencies. The cleanliness of engine rooms was the major deficiency in this category.

This may be mainly attributed to the accumulation of oil impregnated cleaning cloths in machinery spaces and excessive amounts of oil on the floors and in the bilges of those spaces. Examples of other deficiencies observed in this category included inoperable remote controls on boiler safety valves; defective fuel oil valves on main and auxiliary engines; sea water inlet valves incapable of operating; defective generators; excess oil leakage from boiler fuel pumps and boiler fuel burners; and improperly maintained steering motors. Defective fuel oil pumps and air compressors (causing shortage of air for starting main engines) were also observed.



Propulsion and Auxiliary Machinery - Deficiencies

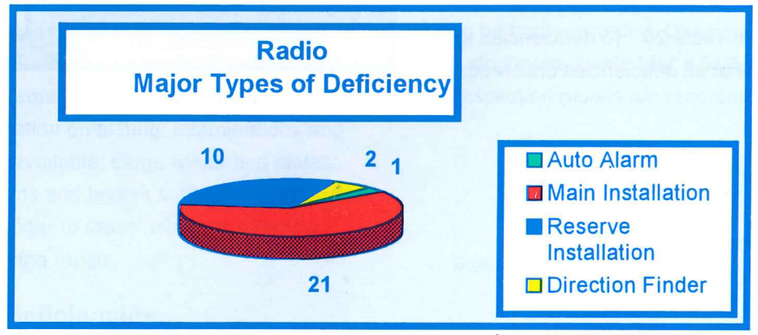
Table 18

ITEM	NUMBER OF OCCURRENCES			PERCENTAGE OF TOTAL DEFICIENCIES		
	1991	1992	1993	1991	1992	1993
Cleanliness of Engine Room	80	144	148	2.78	2.02	2.06
Other	23	40	83	0.80	0.56	1.16
Auxiliary Engine	13	14	26	0.45	0.20	0.36
Guards/Fencing-Dangerous Items	11	14	18	0.38	0.20	0.25
Insulation contaminated	2	9	14	0.07	0.13	0.19
Bilge Pumping Arrangements	2	9	13	0.07	0.13	0.18
Propulsion Main Engine	7	6	12	0.24	0.08	0.16
UMS - Ship			2			0.03

Radio

The ability to transmit and receive marine safety information is of vital importance to safety at sea. This information consists not only of distress messages but also receipt of weather forecasts, medical advice and warnings of navigation hazards. Deficiencies observed in radio equipment appear in Table 19. In 1993 these deficiencies accounted for 0.79% of all deficiencies observed. Major deficiencies recorded in this category were observed in main radiotelegraph transmission and reception equipment. In some cases the power output of transmitters was observed to be below an acceptable level causing a reduction in the range of transmissions.

Faults observed in receiving equipment included unsatisfactory reception. Typical examples of other deficiencies in this category were deteriorated aerials; broken aerial insulators; improperly rigged aerials for very high frequency equipment ; inoperable automatic alarms; defective speakers and faulty emergency power sources.



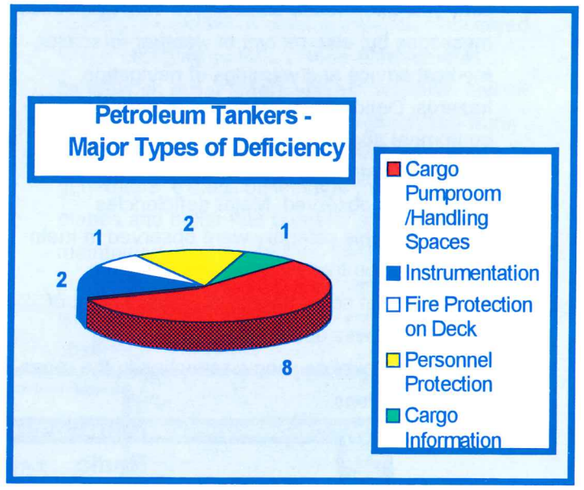
Radio - Deficiencies

Table 19

ITEM	NUMBER OF OCCURRENCES			PERCENTAGE OF TOTAL DEFICIENCIES		
	1991	1992	1993	1991	1992	1993
Other	10	20	22	0.35	0.28	0.31
Main Installation	10	14	21	0.35	0.20	0.29
Reserve Installation		10	10		0.14	0.14
Direction Finder		5	2		0.07	0.03
Auto Alarm	2	5	1	0.07	0.07	0.01
Portable Radio Installation	2	1	1	0.07	0.01	0.01
VHF Installation	1	2		0.03	0.03	
Radiotelegraph Motorlifeboat	1	1		0.03	0.01	
Radio Log		1			0.01	

Deficiencies Specific to Petroleum Tankers

A tanker's accommodation area contains equipment which is unsuitable for use in a flammable atmosphere. It is imperative that doors, windows and similar openings to the accommodation area, particularly those facing the cargo deck, be closed when cargo is loaded or unloaded or associated operations are carried out. Air conditioning or mechanical ventilation systems should be adjusted to prevent entry of flammable gas. Tankers are required to carry portable instruments for measuring oxygen and flammable gas concentrations. Protective clothing and breathing apparatus is required to be provided to protect personnel from the effects of radiant heat and fumes when fighting fires. Deficiencies observed in each of the above areas appear in Table 20. 18 deficiencies were noted or 0.25% of all deficiencies observed.



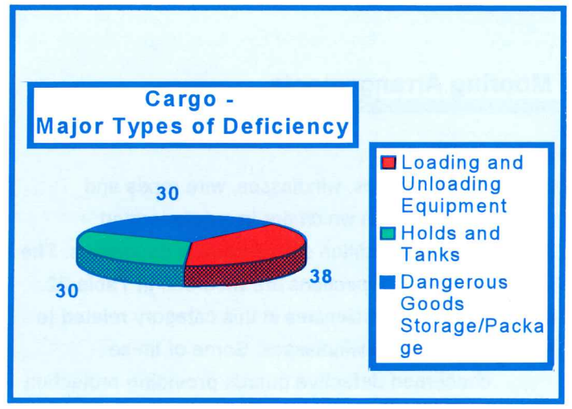
Deficiencies Specific to Tankers

Table 20

ITEM	NUMBER OF OCCURRENCES			PERCENTAGE OF TOTAL DEFICIENCIES		
	1991	1992	1993	1991	1992	1993
Cargo Pumproom/Handling Spaces		2	8		0.03	0.11
Other			4			0.05
Personnel Protection		14	2		0.20	0.03
Instrumentation		4	2		0.06	0.03
Spaces in Cargo Area		1	1		0.01	0.01
Cargo Transfer			1			0.01
Fire Protection Deck Area	2	2		0.07	0.03	
Cargo Information		2			0.03	
Vents-Accomd, Mach & Ctrl Area	1			0.03		

Cargo Gear

Derricks, cranes, winches, wire ropes, chains and similar equipment used in the loading and unloading of ships must be satisfactorily maintained if accidents with potential for serious injury or death are to be avoided. Motion limiting devices and devices to prevent lifting appliances being overloaded must also be properly maintained. Documentation recording the tests, examinations and periodic inspections carried out on cargo lifting appliances to ensure they are maintained in good working order is equally important. Access ladders to cargo spaces must also be well maintained to provide safe access.



It has been noted that approximately one third of deficiencies in this category were observed on equipment used to handle cargo. The deficiencies recorded included absence of identification marks on hooks, blocks, shackles and other small items of equipment; documentation on testing; examinations and testing unavailable; cargo winch bed plates; winch drums and brakes sufficiently corroded to pose a danger to those using the equipment and thus requiring repair.

Other deficiencies included in this category are ladders giving access to cargo holds or tanks, and hydraulic pipes on cargo winches observed to be badly corroded. Deficiencies in this category accounted for 1.91% of all deficiencies. Inspection results are recorded in Table 21.

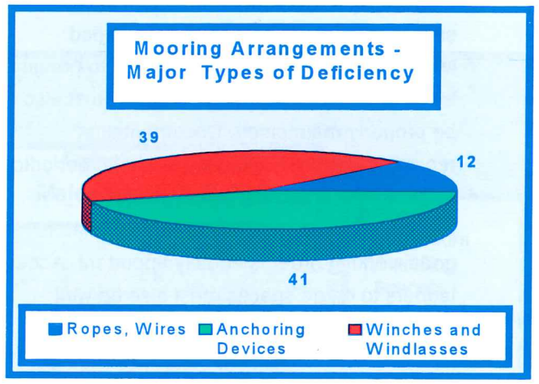
Cargo Gear Deficiencies

Table 21

ITEM	NUMBER OF OCCURRENCES			PERCENTAGE OF TOTAL DEFICIENCIES		
	1991	1992	1993	1991	1992	1993
Loading and Unloading Equipment	40	34	38	1.39	0.48	0.53
Other	3	10	34	0.10	0.14	0.47
Holds and Tanks	16	37	30	0.56	0.52	0.42
Stow/Pack Dangerous Goods		2	30		0.03	0.41
Other Cargo	1	2	3	0.03	0.03	0.04
Grain	1		2	0.03		0.03
Stowage of Cargo		1			0.01	
Liquified Gases in Bulk		1			0.01	

Mooring Arrangements

Anchor cables, windlasses, wire ropes and mooring lines which are in a deteriorated physical condition are potentially dangerous. The results of inspections are recorded in Table 22. 39 of the deficiencies in this category related to winches and windlasses. Some of these concerned defective guards providing protection from moving parts. Other deficiencies in this category related to missing anchors and chain and defective anchor chain. These deficiencies accounted for 1.35% of all deficiencies.



Mooring Arrangements - Deficiencies

Table 22

ITEM	NUMBER OF OCCURRENCES			PERCENTAGE OF TOTAL DEFICIENCIES		
	1991	1992	1993	1991	1992	1993
Anchoring Devices	3	34	41	0.10	0.48	0.57
Winches and Windlasses	7	22	39	0.24	0.31	0.54
Ropes, Wires	1	6	12	0.03	0.08	0.16
Other		3	5		0.04	0.07

Habitation - Living and Working Conditions

Deficiencies in this category relate to living and working conditions on board ships.

Ships on which the health or safety of the crew is not adequately safeguarded are classified as substandard. A substandard ship is defined by the Navigation Act as:

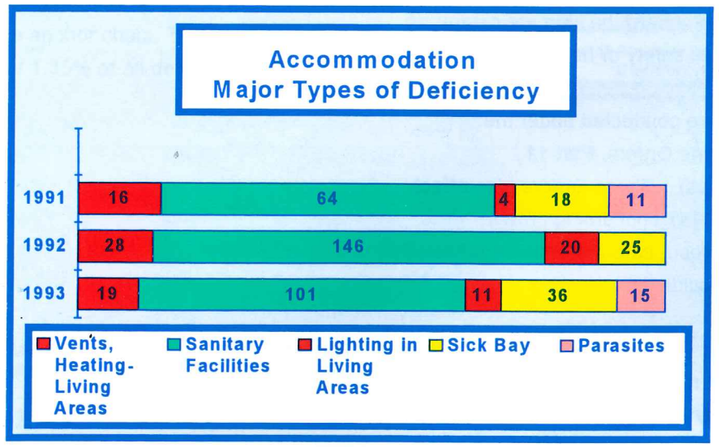
> 'A ship is, for the purposes of this Act, substandard if the ship is seaworthy, but conditions on board the ship are clearly hazardous to safety or health'.

The inspections are conducted under the provisions of Marine Orders, Part 11 (Substandard Ships). These Orders give effect to the spirit of ILO147 concerning crew accommodation, food, catering, and prevention of occupational accidents.

These inspections form part of the port state control inspection regime and are normally made concurrently with the inspections affecting seaworthiness.

Accommodation

The results of inspections of crew accommodation are recorded in Table 23. They show that most accommodation deficiencies involved sanitary facilities. Examples of deficiencies which are included in the crew accommodation category are: blocked drains; dirty hospitals and bathrooms; toilet flush water pipes leaking; shower nozzles and shower controls missing; basins broken; toilet bowls broken; light fittings broken; toilets inoperative; treads of internal stairs broken; deck coverings in accommodation and alleyways defective and ship's provisions stored in accommodation spaces.



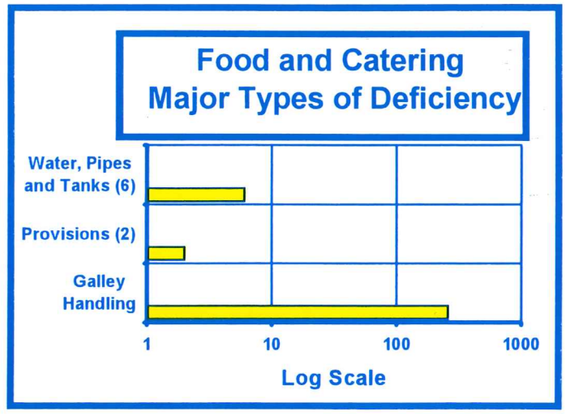
Accommodation - Deficiencies

Table 23

ITEM	NUMBER OF OCCURRENCES			PERCENTAGE OF TOTAL DEFICIENCIES		
	1991	1992	1993	1991	1992	1993
Sanitary Facilities	64	146	101	2.23	2.05	1.41
Other	45	99	82	1.56	1.39	1.14
Sick Bay	18	25	36	0.63	0.35	0.50
Vents, Heating - Living Areas	16	28	19	0.56	0.39	0.26
Parasites	11	13	15	0.38	0.18	0.21
Lighting in Living Areas	4	20	11	0.14	0.28	0.15
Drainage	7	5	8	0.24	0.07	0.11
Medical Equipment	1	5	4	0.03	0.07	0.05
Pipes, Insulation Accom	5	1	1	0.17	0.01	0.01

Food and Catering

The results of inspections are recorded in Table 24. The majority of deficiencies found in the food and catering arrangements related to galleys and food storage handling rooms. This was largely due to poor standards of cleanliness. Other deficiencies included in this category are insulation in galleys sufficiently deteriorated to pose a potential health hazard; heavy grease deposits in galley exhaust ventilation trunking creating a potential fire hazard; refrigeration machinery for cooling storerooms not working efficiently and insufficient food for the intended voyage.



Food and Catering - Deficiencies

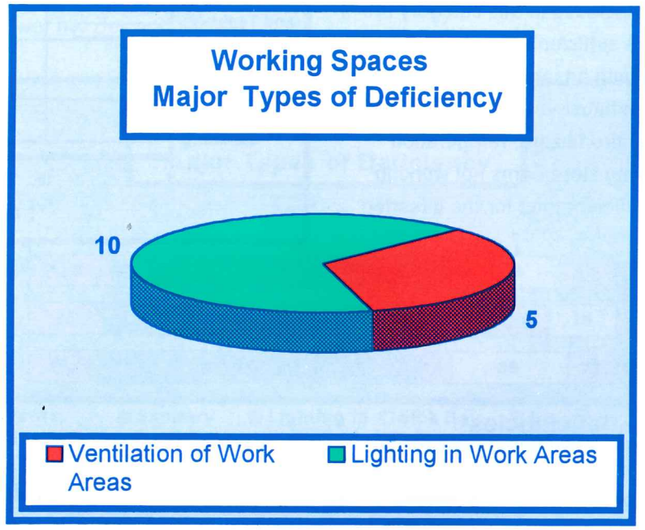
Table 24

ITEM	NUMBER OF OCCURRENCES			PERCENTAGE OF TOTAL DEFICIENCIES		
	1991	1992	1993	1991	1992	1993
Galley, Handling Rooms	122	235	258	4.24	3.30	3.59
Other	10	20	14	0.35	0.28	0.19
Water, Pipes and Tanks	3	4	6	0.10	0.06	0.08
Provisions	2	3	2	0.07	0.04	0.03

Working Spaces

The provision of adequate lighting and ventilation in spaces where people are required to work is essential for a safe working environment.

The results of inspections are recorded in Table 25. 24 deficiencies were noted in this category or 0.33% of all deficiencies observed.



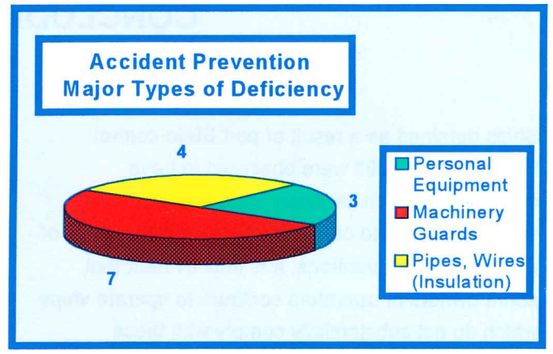
Working Spaces - Major Deficiencies

Table 25

ITEM	NUMBER OF OCCURRENCES			PERCENTAGE OF TOTAL DEFICIENCIES		
	1991	1992	1993	1991	1992	1993
Lighting in Work Areas	7	7	10	0.24	0.10	0.14
Other	11	6	9	0.38	0.08	0.12
Vents\Heating in Work Areas	8	11	5	0.28	0.15	0.07

Accident Prevention

The absence or deterioration of insulation on electrical cables, steam lines, exhaust pipes and other heated surfaces was observed on four occasions. Guards to protect operators from moving parts of machinery were observed to be missing or defective on seven occasions. In total, there were 40 deficiencies amounting to 0.56% of all deficiencies observed. Inspection results are recorded in Table 26.



Accident Prevention - Major Deficiencies

Table 26

ITEM	NUMBER OF OCCURRENCES			PERCENTAGE OF TOTAL DEFICIENCIES		
	1991	1992	1993	1991	1992	1993
Other	4	32	26	0.14	0.45	0.36
Protection Machines/Parts	2	18	7	0.07	0.25	0.10
Pipes, Wires (Insulation)	7	9	4	0.24	0.13	0.05
Personal Equipment		1	3		0.01	0.04

CONCLUDING REMARKS

Ships detained as a result of port State control inspections in 1993 were observed to have deficiencies which seriously impaired their seaworthiness and contravened the requirements of international conventions. It is thus evident that some owners or operators continue to operate ships which do not substantially comply with these conventions. The International Maritime Organization (IMO) has recognised that the problem has two aspects: inadequate ship management by the owner or operator and non-uniform application of convention standards by flag States.

The results of AMSA's port State control inspections demonstrate that there is a distinct need for owners, operators, flag States and classification societies to pay closer attention to the maintenance of ships and their equipment at all times and not just during scheduled surveys. Compared with previous years there are no apparent trends developing in the type of deficiencies or the number of ships with deficiencies. However, the majority of deficiencies continue to be with life-saving and fire-fighting appliances, indicating lack of maintenance of items not used during normal operations on board. This emphasises the continued need for the port State to carry out inspections under the existing convention provisions.

Given current economic conditions it is not difficult to predict that the general condition of ships would further deteriorate if port State control inspections were not carried out by AMSA and other responsible overseas maritime authorities.

Many deficiencies identified on ships not detained were relatively minor. Most defects were speedily rectified during the scheduled stay in port. The majority of ships inspected in 1993 complied substantially with requirements of the relevant conventions. However, many deficiencies observed could have been avoided by proper maintenance. The prime responsibility for ship maintenance lies with the owners or operators of ships. Flag States and organisations appointed by flag States also have responsibilities under international conventions.

AMSA is now giving increased priority to control inspections. The level of control inspections has been substantially increased in 1993. While the number of ships calling at Australia has remained fairly constant, the number of ships inspected has increased from 578 in 1990 to 2003 in 1993. Our activities have ensured that fewer ships depart Australia with undetected deficiencies. This has an immediate benefit for Australia in ensuring the safety of its transport system. In the wider context, everyone benefits, as unseaworthy vessels are identified, detained and relevant information relayed to other bodies with an interest in a safe transport system. This can only assist in achieving the IMO's objectives of safe ships and cleaner oceans.