



MARITIME SAFETY COMMITTEE
81st session
Agenda item 17

MSC 81/17/1
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ROLE OF THE HUMAN ELEMENT

Assessment of the impact and effectiveness of implementation of the ISM Code

Note by the Secretariat

SUMMARY

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| <i>Executive summary:</i> | This document provides the report of the study to assess the impact and effectiveness of implementation of the ISM Code |
| <i>Action to be taken:</i> | Paragraph 9 |
| <i>Related documents:</i> | MSC 75/24, MSC 79/14/7, MSC 79/23 and MSC 80/23 |

1 The Maritime Safety Committee (MSC), at its seventy-fifth session (15 to 24 May 2002), agreed that, after the second implementation phase of the ISM Code on 1 July 2002 covering the balance of the world's merchant fleet, an analysis to assess the impact of the ISM Code on the safety of ships should be carried out to provide a clear indication of its contribution to the enhancement of safety and quality of shipping.

2 In order to collect relevant data and information and have a meaningful assessment on the status of implementation of the ISM Code and its impacts, the Secretary-General established a Group of Independent Experts selected from administrations, organizations, academia and the shipping industry. The Group was tasked to analyse the impact of the ISM Code and its effectiveness in the enhancement of safety of life at sea and protection of the marine environment and submit its report to the Secretary-General.

3 The Chairman of the Independent Group of Experts, Mr. Peter Hinchliffe (ICS), submitted the report of the Group on 18 November 2005, as set out in annex. The main findings of the report are summarized in the following paragraphs.

4 The Group, at its three meetings held at IMO, recognized that the so called 'hard data' to be collected, for example from PSC detention records, would have serious limitations in indicating any effects of ISM Code implementation. Therefore, the Group recognized the need to rely on the experts' judgement on the impact of the ISM Code based on collectively gathered subjective opinions from various levels of the shipping industry.

5 The Group developed four questionnaires for shipboard personnel, shore-based personnel, shipping companies and Administrations. All data received in response to the questionnaires was collated by the World Maritime University (WMU) and submitted to the IMO Secretariat for preliminary analysis. The Group was then invited to scrutinize and validate the data and preliminary analysis.

6 The Group found that the overwhelming majority of responses were supportive of the ISM Code and this was widely discussed. The consensus among the Group was that interest in being part of the study was highest amongst those that had generally enjoyed some benefit from the implementation of ISM. It was the Group's considered opinion that whilst the results cannot be claimed to be a representative sample from across the industry, they nevertheless represented a model of collective experience from amongst those that support the Code. The Group also agreed that this was a limitation in the methodology of the data gathering exercise and believed that it could only be addressed by investing in a study employing researchers in the field to ensure that the views of non-supporters could be specifically captured.

7 Based on the data collected, the Group concluded that:

- .1 where the ISM Code is embraced as a positive step toward efficiency through a safety culture, tangible positive benefits are evident;
- .2 ISM Code compliance could be made easier through a reduction in the administrative process by:
 - .1 streamlining and reducing the paper work that supports ISM compliance, particularly the SMS;
 - .2 greater use of technology and IT to reduce paperwork;
 - .3 identifying common areas in the ISM Code and for example the ISPS Code and integrating documentary requirements;
 - .4 motivating seafarers to use the reporting and monitoring systems in the improvement of safety management systems;
 - .5 involving the seafarers in the development and continuous improvement of ISM manuals;
 - .6 increased integrated training for all concerned;
 - .7 exploring measures to reduce the cost of compliance; and
 - .8 improving ISM compliance monitoring and developing performance indicators; and
- .3 the impact of PSC in this area was not explored but certainly appears to merit further study.

8 The Group recommended that:

- .1 a further study should be undertaken, at a later date, specifically to examine:
 - .1 cause and effect between ISM implementation and flag State safety record;
 - .2 the relationship between PSC and ISM compliance; and
 - .3 whether textual changes in the requirements of the Code could make compliance easier and lead to an improved safety culture,

- .2 in response to data produced for this study:
 - .1 methods to streamline the implementation of the Code through technology and increased use of IT should be explored;
 - .2 the alignment of ISM and ISPS in shipboard documentation should be considered;
 - .3 a reduction in paperwork should be encouraged;
 - .4 guidelines for Administrations should be revised to make them more user friendly; and
 - .5 new guidelines to assist companies to implement the Code should be developed,
- .3 the results of the study be given widespread publicity across the industry in order to show how positive attitudes to ISM can yield tangible operational, financial and safety benefits.

Action requested of the Committee

- 9 The Committee is invited to note the above information and take action as appropriate.

ANNEX



**STUDY ON
THE IMPACT OF THE ISM CODE
AND ITS EFFECTIVENESS
IN THE
ENHANCEMENT OF SAFETY OF LIFE AT SEA
AND PROTECTION OF THE MARINE ENVIRONMENT**

ISM CODE

EXECUTIVE SUMMARY

The International Safety Management (ISM) Code's origins go back to the late 1980s, when there was mounting concern about poor management standards in shipping. Investigations into accidents revealed major errors on the part of management and in 1987 the IMO Assembly adopted resolution A.596(15), which called upon the Maritime Safety Committee to develop guidelines concerning shipboard and shore-based management to ensure the safe operation of ro-ro passenger ferries.

The ISM Code evolved through the development of the Guidelines on Management for the Safe Operation of Ships and for Pollution Prevention, adopted in 1989 by the IMO Assembly by resolution A.647(16), and the Guidelines adopted two years later by resolution A.680(17), revised to its current form, the International Management Code for the Safe Operation of Ships and for Pollution Prevention (International Safety Management) (ISM) Code), which was adopted in 1993 by resolution A.741(18).

The principles and objectives of the ISM Code provide an international standard for the safe management and operation of ships and for pollution prevention. The success of its implementation depends to a great extent, on the continued commitment, competence, attitudes and motivation of individuals, at all levels, in the company and on board ships to which the ISM Code applies.

The Maritime Safety Committee (MSC), at its seventy-fifth session (15 to 24 May 2002), agreed that, after the second implementation phase of the ISM Code on 1 July 2002 covering the balance of the world's merchant fleet, an analysis to assess the impact of the ISM Code on the safety of ships should be carried out to provide a clear indication of its contribution to the enhancement of safety and quality of shipping. The Committee instructed the Secretariat to collect information from regional port State control (PSC) MoUs/Agreements, IACS and industry organizations on the impact of the ISM Code *vis-à-vis* detentions, serious deficiencies, casualties, etc. as well as their assessment of the impact of the ISM Code and its effectiveness on ships to which it applies and to submit a summary of such information and assessment to MSC 80.

In order to collect relevant data and information and have a meaningful assessment on the status of implementation of the ISM Code and its impacts, the Secretary-General established a Group of Independent Experts selected from administrations, organizations, academia and the shipping industry. The group was tasked to analyse the impact of the ISM Code and its effectiveness in the enhancement of safety of life at sea and protection of the marine environment and submit its report to the Secretary-General.

The Group held three meetings at IMO on 12 November 2004, 20 January 2005 and 4 October 2005. The Group at its second meeting unanimously elected Mr. Peter Hinchliffe (ICS) as its Chairman.

The Group recognized that the so called 'hard data' to be collected, for example from PSC detention records, would have serious limitations in indicating any effects of ISM Code implementation. The most significant problem that the Group faced would be isolation of the effect of ISM implementation from the impact of other contemporary legislative and

administrative requirements. Therefore, the Group recognized the need to rely on the experts' judgement on the impact of the ISM Code based on collectively gathered subjective opinions from various levels of the shipping industry; these included companies, ship masters, engineers, etc.

The Group developed four questionnaires for shipboard personnel, shore-based personnel, shipping companies and Administrations. The questionnaires related to shipboard personnel and shore-based personnel were circulated through various industry organizations, non-governmental organizations, professional bodies, as well as being posted on the IMO web site. The questionnaire related to Administrations was circulated by means of circular letter No.2625 of 2 March 2005. The questionnaire related to companies was circulated by the shipping organizations.

All of the data received in response to the questionnaires was collated by the World Maritime University (WMU) and passed to the Group for analysis. The Group analyzed the data based on the preparatory work carried out by the IMO Secretariat.

The Group found that the overwhelming majority of responses were supportive of the ISM Code and this feature of the results was the subject of much discussion. The Group had to take a view on why the results obtained appeared to be generally supportive of the Code's impact, a result that was not borne out by the Group's collective experience with ISM implementation. The consensus among the Group was that interest in being part of the study was highest amongst those that had generally enjoyed some benefit from the implementation of ISM. It was the Group's considered opinion that whilst the results cannot be claimed to be a representative sample from across the industry, they nevertheless represented a model of collective experience from amongst those that support the Code. The Group also agreed that this was a limitation in the methodology of the data gathering exercise and believed that it could only be addressed by investing in a study employing researchers in the field to ensure that the views of non-supporters could be specifically captured.

Based on the data collected, the Group concluded that:

- where the ISM Code is embraced as a positive step toward efficiency through a safety culture, tangible positive benefits are evident;
- ISM Code compliance could be made easier through a reduction in the administrative process by:
 - streamlining and reducing the paper work that supports ISM compliance, particularly the SMS;
 - greater use of technology and IT to reduce paperwork;
 - identifying common areas in the ISM Code and for example the ISPS Code and integrating documentary requirements;
 - motivating seafarers to use the reporting and monitoring systems in the improvement of safety management systems;

- involving the seafarers in the development and continuous improvement of ISM manuals;
 - increased integrated training for all concerned;
 - exploring measures to reduce the cost of compliance; and
 - improving ISM compliance monitoring and developing performance indicators; and
- the impact of PSC in this area was not explored but certainly appears to merit further study.

The Group recommends that:

- a further study should be undertaken, at a later date, specifically to examine:
 - cause and effect between ISM implementation and flag State safety record;
 - the relationship between PSC and ISM compliance; and
 - whether textual changes in the requirements of the Code could make compliance easier and lead to an improved safety culture,
- in response to data produced for this study:
 - methods to streamline the implementation of the Code through technology and increased use of IT should be explored;
 - the alignment of ISM and ISPS in shipboard documentation should be considered;
 - a reduction in paperwork should be encouraged;
 - guidelines for Administrations should be revised to make them more user friendly; and
 - new guidelines to assist companies to implement the Code should be developed,
- the results of the study be given widespread publicity across the industry in order to show how positive attitudes to ISM can yield tangible operational, financial and safety benefits.

BACKGROUND AND INTRODUCTION

1 BACKGROUND

1.1 The International Safety Management (ISM) Code's origins go back to the late 1980s, when there was mounting concern about poor management standards in shipping. Investigations into accidents revealed major errors on the part of management and in 1987 the IMO Assembly adopted resolution A.596(15), which called upon the Maritime Safety Committee to develop guidelines concerning shipboard and shore-based management to ensure the safe operation of ro-ro passenger ferries.

1.2 The ISM Code evolved through the development of the Guidelines on Management for the Safe Operation of Ships and for Pollution Prevention, adopted in 1989 by Assembly resolution A.647(16), and the Guidelines adopted two years later by resolution A.680(17), revised to its current form, the International Management Code for the Safe Operation of Ships and for Pollution Prevention (International Safety Management (ISM) Code), which was adopted in 1993 by resolution A.741(18).

1.3 The Maritime Safety Committee developed requirements for Contracting Parties to the International Convention for Safety of Life at Sea, (SOLAS) 1974, whereby compliance with the ISM Code became mandatory through the 1994 amendments to SOLAS 74 and the introduction of a new chapter IX. These amendments entered into force on 1 July 1998 and resulted in the Code becoming mandatory for passenger ships, tankers and bulk carriers. Chapter IX was amended by resolution MSC.99(73), which was accepted on 1 January 2002 and entered into force in 1 July 2002. This was the date on which the ISM Code became mandatory for a wider range of cargo ships and for mobile offshore drilling units. The Code was amended in December 2000 by resolution MSC.104(73). This resolution was accepted on 1 January 2002, and the amendments entered into force on 1 July 2002.

2 INTRODUCTION

2.1 The International Safety Management (ISM) Code came into force in two implementation phases for passenger ships, tankers, bulk carriers and cargo high speed craft over 500 gross tonnage on 1 July 1998 and for other cargo ships and mobile offshore drilling units over 500 gross tonnage on 1 July 2002, and, has been in force for just over three years.

2.2 The principles and objectives of the ISM Code provide an international standard for the safe management and operation of ships and for pollution prevention. The success of its implementation depends to a great extent, on the continued commitment, competence, attitudes and motivation of individuals, at all levels, in the company and on board ships to which the ISM Code applies.

2.3 The implementation of the ISM Code envisages the development and continuous improvement of a safety culture throughout the industry. Some variance is to be expected in the degree of application by shipping companies based on their own management strategies and operational policy. Evidence of the enhancement of a safety culture and acknowledgement of its benefits would, therefore, be a measure of the global impact of the ISM Code on safety in the shipping industry. In implementing the ISM Code, shipping companies, classification societies and industry organizations can be expected to gain significant experience in the application of its requirements and the manifest benefits and drawbacks.

2.4 The Maritime Safety Committee (MSC), at its seventy-fifth session (15 to 24 May 2002), agreed that, after the second implementation phase of the ISM Code on 1 July 2002 covering the balance of the world's merchant fleet, an analysis to assess the impact of the ISM Code on the safety of ships should be carried out to provide a clear indication of its contribution to the enhancement of safety and quality of shipping. The Committee instructed the Secretariat to collect information from regional PSC MoUs/Agreements, IACS and industry organizations on the impact of the ISM Code *vis-à-vis* detentions, serious deficiencies, casualties, etc. as well as their assessment of the impact of the ISM Code and its effectiveness on ships to which it applies and to submit a summary of such information and assessment to MSC 80.

2.5 In order to collect relevant data and information and have a meaningful assessment on the status of implementation of the ISM Code and its impacts, the Secretary-General established a Group of Independent Experts selected from administrations, organizations, academia and the shipping industry. The group was tasked to analyse the impact of the ISM Code and its effectiveness in the enhancement of safety of life at sea and protection of the marine environment and submit its report to the Secretary-General. The list of participants of the Expert Group is set out in annex 1.

3 MEETINGS OF THE EXPERT GROUP

3.1 The Group held three meetings at IMO Headquarters on 12 November 2004, 20 January 2005 and 4 October 2005. The Group at its second meeting unanimously elected Mr. Peter Hinchliffe (ICS) as its Chairman. The deliberations and decisions of the Group are summarized in the paragraphs below.

Terms of reference

3.2 The Group agreed that the terms of reference for the Group should be based, in broad terms, on the draft proposed by the Secretariat, but should be left open ended to be modified as and when required as the Group progressed with its work. The terms of reference for the Independent Expert Group are set out in annex 2.

Work methods for data collection

3.3 The Group recognized that, for a meaningful analysis, the following main data would be required:

- data which would indicate how the shipping industry managed to comply with the requirements of the ISM Code; and
- data which would indicate what kind of effect the implementation of the ISM Code had achieved so far.

3.4 The Group further recognized that the so called 'hard data' to be collected, for example from PSC detention records, would have serious limitations in indicating any effects of the implementation of the ISM Code. The most significant problem that the Group faced would be isolation of the effect of ISM implementation from the impact of other contemporary legislative and administrative requirements. Therefore, the Group recognized the need to rely on the experts' judgement on the impact of the ISM Code based on collectively gathered subjective opinions from various levels of the shipping industry; these included administrations, companies, designated persons ashore, ship masters, engineers, etc.

3.5 At its first meeting, the Group gave preliminary consideration to the suggested list of 'hard data' to be collected, as presented by the IMO Secretariat. The Group agreed that it was premature to finalize that list at that early stage. The Group further agreed to provide their comments thereon by 30 November 2004 for consideration at the next meeting. The Group also agreed that it would be useful to invite a representative from the International Group of P&I Clubs, who could consider the provision of any data that might be held.

3.6 The Group also gave preliminary consideration to four draft questionnaires developed by the IMO Secretariat to collect subjective 'soft data' from shipowners, designated person ashore (DPA), masters and chief engineers. The Group agreed that while these questionnaires provided a good starting point, they would need to be developed further to ensure that meaningful data could be gathered for the analysis. It was agreed that Members of the Group would correspond intersessionally through the Secretariat to develop these questionnaires with a view to finalize them by the end of January 2005.

Review of objectives

3.7 The Group agreed that the objective of this study was to identify:

- trends in safety and pollution prevention; and
- impact of the ISM Code.

Development and circulation questionnaires

3.8 At its second session, the Group developed four questionnaires for shipboard personnel, shore-based personnel, shipping companies and Administrations.

3.9 The Group agreed that the questionnaires relating to shipboard personnel and shore-based personnel should, in addition to those being circulated by various industry organizations and non-governmental organizations, be posted on the IMO website to assist those interested in on-line completion. The Group also agreed that the questionnaire related to companies would be circulated by industry associations and that related to Administrations by means of an IMO circular letter.

3.10 Accordingly, the questionnaires related to shipboard personnel and shore-based personnel were circulated through various industry organizations, non-governmental organizations, professional bodies, as well as being posted on the IMO web site. The questionnaire related to Administration was circulated by means of circular letter No.2625 of 2 March 2005. The questionnaire related to companies was circulated by the shipping organizations.

Methodology for analyses of questionnaires

3.11 World Maritime University (WMU) agreed to undertake the work related to data processing; to set up a database to key in the data received; and to provide the primary analysis for consideration by the Group.

The Group agreed that the cut-off date for receiving data related to:

- shipboard personnel would be 31 July 2005;
- shore-based personnel would be 30 June 2005;
- shipping companies would be 31 July 2005; and
- Administrations would be 31 July 2005.

COLLECTION OF DATA

4 GENERAL

The Group agreed that statistical data related to detentions, claims, accidents etc., should be collected from IACS, PSC, MoUs, P&I Clubs and Accident Investigators, and instructed the Secretariat to communicate with these organizations accordingly.

5 CONSIDERATION OF RESPONSES OF QUESTIONNAIRES

General

5.1 *The data collected for this study was based on the responses to the questionnaires received from various sectors of the industry and was not representative of the entire industry.*

5.2 The Group at its third session, appreciated the work of the WMU in collating the data received in response to the questionnaires circulated by the Group and the IMO Secretariat for the preparatory work on the data input provided by WMU for the basis of discussions of the Group.

5.3 The Group noted that 257 responses to the questionnaire for seafarers showed evidence of duplication or direction in their completion and accordingly WMU had prepared two sets of data for the Group's consideration. The Group, noting that even after elimination of the 257 duplicate responses, there was no significant change in the statistical analysis and also noting that the data was unreliable, decided not to take them into consideration.

Consideration of consolidated responses of questionnaire to Seafarers

5.4 The Group considered the consolidated analysis related to the questionnaire to seafarers prepared based on the data collated by WMU and agreed that since it was based on the initial data consolidated from 1,363 questionnaires, it needed to be updated and validated for all the 2,959 completed questionnaires. Mr. Molloy (IACS), Mr. Mellebye (ICS) and Mr. Bainbridge (ITF) updated the data and validated the analysis.

Consideration of consolidated responses of questionnaire to Shore-based personnel

5.5 89 shore-based personnel responded to the questionnaire related to shore-based personnel. The Group considered the consolidated analysis prepared based on the data collated by WMU and agreed that it needed to be validated. Mr. Markides (OCIMF) and Mr. Bond (ICS) scrutinised the data and validated the analysis.

Consideration of consolidated responses of questionnaire to Companies

5.6 39 Companies responded to the questionnaire related to companies. The Group considered the consolidated analysis prepared based on the data collated by WMU and agreed that it needed to be validated. The Chairman and Mr. Lomas (INTERCARGO/INTERTANKO) scrutinised the data and validated the analysis.

Consideration of consolidated responses of questionnaire to Administrations

5.7 32 Administrations representing nearly half the world's convention fleet subject to the provisions of SOLAS chapter IX by gross tonnage responded to the questionnaire related to Administrations. The Group considered the consolidated analysis prepared based on the data collated by WMU and agreed that it needed to be validated. Mr. Rasmussen (Denmark), Mr. Tatman (United Kingdom) and Mr. Lee (Singapore) scrutinised the data and validated the analysis.

5.8 The final validated analysis for all four questionnaires was circulated electronically to all members for approval with a view to form a part of the report.

CONSIDERATION OF PORT STATE CONTROL, IACS AND P AND I CLUBS DATA

Port State Control Data

5.9 The Group was informed that the Secretariat had requested all port State control MoUs to provide data and statistics for the purpose of this study and so far no data had been received. The Group noted with regret that no tangible data had been received from these PSC MoUs. The Secretariat presented preliminary data collected from the web sites of various PSC MoUs. The Group noted that the preliminary data could be misleading as sometimes the number of inspections had increased on account of concentrated campaigns and instructed the Secretariat to include the total number of inspections against the reported ISM deficiencies so as to ensure that a balanced picture was presented.

5.10 Accordingly, the Secretariat as instructed by the Group, collated the PSC Inspection data related to ISM Code for the following Memorandum of Understandings (MoUs) and the US Coast Guard, based on information collected from the respective web sites.

Total inspections and ISM related deficiencies

Regional MoUs	2002		2003		2004	
	Total inspections	Number of deficiencies	Total inspections	Number of deficiencies	Total inspections	Number of deficiencies
USCG	10,518	109	11,955	86	11,054*	84
Paris	19,766	3,210	20,309	3,539	20,316	2,794
Black Sea	2,967	39	5,228	137	5,653	458
Tokyo	19,588	2,762	20,124	3,441	21,400	2,803
Indian Ocean	5,452	273	5,093	440	5,690	667
Viña del Mar	4,530	130	4,484	255	5,049	375

Sources: Memorandum of Understanding on Port State Control (Annual report 2004)

*USCG Safety inspections only

The Group agreed that it was difficult to draw any conclusion or to identify any trend from the limited Port State Control data that could be gathered.

IACS data

5.11 Mr Molloy (IACS) informed the Group that, for a variety of reasons, any data or information that IACS may have at its disposal would be unlikely to contribute usefully to the specific objective of determining the overall effectiveness of the ISM Code in the shipping industry as a whole. Not only have the IACS societies collected and analysed data for reasons other than assessing the global impact of the Code, but the nature of the data and the analyses applied to them have changed considerably during the period under consideration as experience has been gained and interpretations have evolved. As a result, it would not be possible to identify trends or make comparisons in which the Group would be able to place any confidence, and any conclusions drawn from them would be unreliable.

P and I Club data

5.12 The Group, at its first meeting, decided that the International Group of P&I Clubs (IG) should be invited to join the Group and invited to provide any data felt relevant. It was however recognized that 'hard' data of this kind would have serious limitations in ascertaining the impact of the Code.

5.13 The IG was pleased to accept the invitation and undertook to provide the data requested, that is the number of cargo and pollution damage claims recorded by Clubs since 1995. However it also expressed the view that the data would be of very limited value in assisting the Group in meeting its objective.

5.14 After careful consideration of the collated data provided by the IG, the Group agreed that the data could not assist it in determining the impact of the Code.

ANALYSIS OF RESPONSES TO QUESTIONNAIRES

6 QUESTIONNAIRE FOR ADMINISTRATIONS

Introduction

6.1 162 questionnaires were sent out by letter to National Maritime Administrations. 32 Administrations responded. This summary is based on the responses of those 32 Administrations to a 27-question survey to determine the effectiveness of the ISM Code as perceived by them, and to gather suggestions about its future development. Not all Administrations responded to all 27 questions and the report makes it clear where this occurred.

FACTUAL INFORMATION

6.2 The Administrations who responded ranged from small to very big administrations. Those that responded had volunteered information, and had 'self-selected' themselves to reply. 9 of the 32 registered less than 50 ships; 10 registered 30-200 ships; 2 registered 200-500 ships; 7 registered 500-1000 ships and the remaining 4 registered more than 1000 ships. 27 of 31 Administrations indicated that they were members of a Port State Control Memorandum of Understanding. Their fleets included almost all types of cargo ships, tankers and passenger ferries. The average age of the ships was around 15 years. These 32 Administrations had between them issued Document of Compliance (DOC)s to some 3,000 ship operating companies, although 20 Administrations issued fewer than 36 DOCs. 17 Administrations had created a special entity to deal with ISM related issues taking on an average of 3.7 additional people.

6.3 Among the ships, 14% were below 500 GT; 39% were 500 – 10,000 GT; 38% were 10,000 – 100,000 GT and the remaining 9% ships were >100,000 GT.

6.4 26 Administrations had delegated ISM-related work to Recognized Organizations (RO). On average each Administration recognized 4 ROs and the highest number recognised was 10. 24 Administrations had a written agreement with the ROs, and 4 did not; there were 4 that did not reply to this question. 6 Administrations had asked other Contracting Governments to SOLAS to carry out ISM-related activities on their behalf. The response did not indicate how often this has been the case.

6.5 11 Administrations had applied the ISM requirements to ships other than those covered by SOLAS, using national legislation; 19 had not. 12 Administrations promoted the reporting of near-misses through national legislation.

6.6 16 Administrations had actually withdrawn ISM-related certificates.

Summary

6.7 32 Administrations responded on a voluntary basis, varied from large to small Administrations, and 27 out of the 31 were participants in a Port State Control MoU. Administrations represented most ship types and sizes. The responding Administrations represented almost half the world SOLAS convention fleet tonnage and had issued ISM certificates to some 3,000 ship operating companies. Of these, 12 made up the bulk of the issuing Administrations, with 20 Administrations covering 35 or fewer operating companies. 19 of the Administrations registered fewer than 200 ships each although 17 had identified

specific staff to deal with the ISM task; it is not clear what proportion of these were additional people, or people drawn from other tasks. In addition, 26 had delegated all or most ISM-related tasks to Recognised Organizations. The survey did not identify the extent to which these delegations involved vessels with the same Recognised Organization dealing with both Classification and ISM audit. 16 Administrations had, at some stage withdrawn ISM certificates issued to companies and ships. Some Administrations stated that they were using their national legislation to promote near-miss reporting and to extend the application of the ISM Code to other ships within their domain not covered under SOLAS. The survey did not seek amplifying details to these questions such as encouraging near miss reporting on a voluntary basis.

EVALUATION OF THE ISM CODE

6.8 15 Administrations experienced a decrease in their ships being detained by PSC after the implementation of the ISM Code in 1998, and 17 after its application to all ships in 2002. 11 and 9 respectively (1998 and 2002) experienced no change in detentions, and 2 and 4 respectively suffered an increase. The survey did not investigate the reasons for these changes.

6.9 Similar trends were observed in the number of marine casualties under those administrations. 18 (since 1998) and 15 (since 2002) experienced a decrease in casualties; 11 and 11 observed no change at all, and 1 and 5 observed an increase in marine casualties.

6.10 A similar trend was observed in the number of 'serious workplace accidents' on the ships under these Administrations.

6.11 The survey did not attempt to gather 'cause and effect' information to establish a direct link between ISM implementation and the variations discussed above.

Summary

6.12 Many Administrations said that they had observed a decrease in the number of detentions, marine casualties and 'serious workplace accidents' since 1998. The trend was less clear from 2002 although this is a short time frame (to mid-2005) for this kind of data. This is a very positive outcome although the survey did not attempt to link 'cause and effect.'

PORT STATE CONTROL (PSC) RELATED INFORMATION

6.13 27 out of 31 responding Administrations were members of PSC MoUs. 28 out of 31 carried out PSC inspections. Of these, 13 reported a decrease in the detentions in their ports since 1998, 6 reported no change, and 8 an increase. The same data from the 2002 extension to the ISM Code are 9 decrease, 8 no change and 10 increase.

Summary

6.14 This survey paints a mixed picture that merits further investigation. It is just as important to observe that PSC and ISM regimes are aimed at different aspects of maritime safety and are prone to both divergence and convergence. Indeed, at ISM implementation stages there may have been a focus of PSC inspections on ISM deficiencies that has diminished with time, or the converse could be true that non-ISM deficiencies have led PSC inspections to conclude that they are due to ineffective ISM implementation, and this too may have varied over time. The relationship between ISM and Port State Control could be investigated further prior to recommending changes to the ISM Code.

GENERAL ASSESSMENT OF THE ISM CODE

6.15 It was difficult to frame questions to produce tangible and specific answers; ISM was seen to involve the promotion of a safety culture, and a vehicle for continuous improvement and for integrating people into the safety management system. These were not easy factors to measure. However, some responses warrant reporting.

6.16 13 Administrations found the Code 'very useful', 17 'useful, and 1 'of limited use'. 23 thought that the Code was largely working, 6 partly working, and 1 'working perfectly'. Of the 7 responses that indicated challenges with the effectiveness of the Code, there were 5 which mentioned management commitment, and 4 of training shortfalls. 26 administrations felt that the ISM Code had achieved its objective, and 4 that it had not.

Summary

6.17 Administrations indicated that the Code was generally useful, and certainly starting to achieve its objectives. These results must again be taken in the context of those Administration that 'self selected' to respond, and of the degree to which they can be taken to represent the global maritime regulatory body.

AREAS FOR IMPROVEMENT OF THE ISM CODE

6.18 2 Administrations called for substantial modification to the ISM Code, 21 wanted some modification, and 8 stated their preference for no change to the Code.

6.19 Administrations were asked to note, from 1 to 5, the areas where they thought that implementation of the ISM Code could be developed to improve safety. The views expressed were as follows, in order of priority:

- more systematic training;
- having an ISM Code performance measurement scheme;
- more monitoring of compliance;
- integrating into employment requirements; and
- involving more people, especially seafarers, in writing ISM manuals.

Summary

6.20 While the Administrations were fairly satisfied with the Code and felt that the objectives were starting to be met, most of them wanted some modification to the ISM Code. The survey did not reveal in which areas this might be wanted. Administrations were able to prioritise methods to improve the implementation of the ISM Code.

CONCLUSIONS

6.21 The following conclusions are based on the responses received from 32 Administrations which represents nearly half the world convention fleet by gross tonnage.

6.22 Of the responses received, anecdotal signs that the Code is useful and starting to work were received. However, the survey was not able to link improvements in detention and accident rates directly to the implementation of the ISM Code.

6.23 The survey produced mixed results about the ability of Port State Control to measure ISM effectiveness. The links between the ISM Code and the Port State Control regime were complex and further work was required to understand them fully.

6.24 Administrations felt that the Code might benefit from some form of modification, although they were not given the opportunity to be more specific. They did, however, provide a list of actions that might improve the implementation of the existing ISM Code.

6.25 Administrations returned few unsupportive or critical responses. It can be concluded that general support for the ISM Code is strong among the respondents, and that some areas for improvement have been identified.

7 QUESTIONNAIRE FOR SHIPPING COMPANIES

Introduction

7.1 The Expert Group devised a questionnaire for shipping companies around the world and this was distributed by the shipowner associations represented in the Group. A total of 39 Shipping Companies responded to the questionnaire and the analysis that follows is based upon these responses. A total of 30 questions were posed in the survey to determine the effectiveness and future of the ISM Code as perceived by shipping companies.

FACTUAL INFORMATION

7.2 The Companies who responded represent a good geographic spread from around the world. Whilst most of the companies had less than 25 ships, a few very large companies also responded.

7.3 Amongst the 39 shipping companies a total of 1,283 ships were represented; averaging 33 ships per company. The ship types represented were split; tankers (24%), bulk carriers (18%), passenger ships (11%) and other kinds of cargo ships (47%).

7.4 There was also a good variation in the size of the ships represented. 66% of the ships were less than 10,000 GT; 23% were in the range 10,000 – 50,000 GT; 10% ranged from 50,000 – 150,000 GT and the remaining 1% were above 150,000 GT.

7.5 84% of the vessels were engaged in international trade world-wide and the remainder were engaged in regional trade.

7.6 Turning to the practical implementation of the Code, the companies showed a spread of the date when ISM work commenced, and when the DOC was obtained, from 1994 onwards. The momentum picked up as they approached 1998, when it became mandatory for Passenger Ships,

Oil/Chemical/Gas Tankers, Bulk Carriers and High Speed Craft of 500GT or more. 1996 was the year when biggest group of companies started with the implementation process and 1998 was the year when most companies obtained their DOC. After that there was a slight lull and the momentum again slowly picked up towards 2002 when it became mandatory for all other cargo ships and Mobile Offshore Drilling Units of 500 GT or more. Only 1 company claimed that the DOC was obtained in 2003, after the implementation date.

7.7 55% of the companies were ISO 9001 certified; 18% Companies were ISO 14001 Certified and 27% were ISMA Code Certified (ISMA – International Ship Managers Association).

COMPANIES' ISM COMPLIANCE

Initial implementation required the advice of a large number of dedicated professionals together with significant financial resources. Even post-ISM, companies needed to have personnel and resources to sustain the process and to deliver continuous improvement.

Costs

7.8 The majority (58%) of companies spent between US\$ 3000 – 8000; with a very few spending more than US\$30000. This meant that, on average, companies spent about US\$8,500 – 9,000 per ship for the initial implementation. Furthermore, 36% of the companies already had a SMS in place before the ISM Code; 41% followed a system similar to the SMS and only 23% of the companies had previously worked without any kind of SMS.

7.9 Turning to annual costs per ship, the majority (59%) spent up to US\$5000; but the cost ranged from \$1000 to more than \$10,000. Therefore, on average, the companies spent between US\$4000 – 4500 per ship annually to maintain ISM compliance. This cost appeared to be fairly equally allocated to documentation; human resources; training; and auditing.

Human Resources

7.10 On average 2.5 dedicated shore-based positions had to be created to ensure effective ISM compliance. Most of the companies responded that whilst no extra personnel were allotted on board ships to ensure compliance of ISM, additional training for ship-board personnel ensured compliance. Very few companies allotted additional personnel on board. According to the statistics, 55% of the seafarers were trained each year on ISM issues when it was first implemented. Even today the training continues and 45% of the seafarers received training every year from the companies. This training varied from 1 day to more than 5 days with an average of approximately 2.5 days. This training was either conducted on board by senior officers/superintendents or conducted ashore at training institutes.

Designated Person ashore

7.11 Designated Person ashore (DPA) was seen to be the main driving force behind the implementation and the success of the ISM Code by about 50% the companies; 25% felt that it was the top management; and 20% felt that it was the seafarers. 50% felt that compared to the initial implementation, the effort to sustain ISM successfully was now more intense; 25% felt not much change in the effort; and 25% felt that reduced effort was required.

7.12 There was evidence that the number of reported near misses is slowly increasing with time, whilst the general trend shows a reduction in accidents and incidents. However, this area is worthy of separate investigation.

Summary

7.13 A large amount of investment (in the form of effort, human resources and money) went into the initial implementation of the ISM Code and it continues to require annual budgeting. Hence, most of the companies clearly wanted to see results in the form of efficiencies (reduced incident, accident costs; lower insurances, etc.). Most companies already had some kind of SMS in place prior to ISM compliance, but the ISM Code has helped them streamline their processes. Companies were also committed to the training of their employees; and there is evidence of continuous improvement through increased reporting of near misses, incidents and accidents. Summarizing, it can be deduced that Companies are seeing benefits in the system and are quite clearly committed to continuous improvement.

MAIN BENEFITS FROM THE ISM COMPLIANCE

7.14 Relating to the benefits from ISM compliance, the following observations were made:

- Many companies felt that there were no major problems with ISM compliance however almost 25% responded that no major noticeable benefit had been observed;
- 25% claimed that the biggest benefit of ISM Compliance was that it helped in the evaluation of hazardous tasks before they were undertaken and delivered better control of the outcomes; and
- less than 20% felt that analysis of near misses/incidents and accidents, and the related investigations resulted in determination of the root cause and preventative measures;
- about 17% felt that the SMS created an atmosphere whereby hazardous occurrences and near misses were less likely to happen on board; and

7.15 The most positive impact was an improvement in communications between the ship and the shore; this was followed by a reduction in personnel injuries, pollution claims and cargo damages. Benefits were also found due to more structured planned maintenance systems and documentation.

7.16 The majority of companies identified that, in addition to the ISM Code, enhanced technology had also been responsible for improvements in safety performance. Other contributory factors identified were ISO quality systems, PSC inspections, and increased training of personnel on board.

7.17 A few companies were not convinced of the benefit of ISM or particularly satisfied with the current situation. These companies identified contributory factors which could be said reflected their own implementation and these included:

- top management had yet to be convinced of the benefits of the Code; and
- the high cost of compliance had yet to yield commensurate benefits.

Summary

7.18 Though a majority of the companies are seeing some good results in terms of safety and performance, some are not convinced that this can be correlated to the role of the ISM Code in isolation. Not surprisingly, this leads some to question whether the initial and continuing investment of both time and effort was justifiable. However, many companies responded that they had seen considerable benefit out of the ISM Compliance and that cost benefit was being delivered through a reduced level of incidents.

7.19 Amongst suggested improvements was a need to simplify and streamline the Code, to reduce paperwork and to improve motivation ashore and afloat.

GENERAL ASSESSMENT AND FUTURE DEVELOPMENT OF THE ISM CODE

7.20 40% of the companies found the Code 'very useful'; 56% found it 'somewhat useful' and only 5% felt that it was of limited use. In the case of the latter group, the reasons were felt to be:

- lack of commitment from the top management;
- lack of proper training;
- cultural change that will take time to implement;
- too complicated especially for those at sea;
- at the moment it was not a part of the job requirement and it was suggested that incorporation with STCW might assist; and
- the crew find increased documentary requirements burdensome.

7.21 The cost of continued implementation varied between companies. 50% of companies felt that the cost was going up every year; 32% felt that they it was relatively constant and 19% felt that it was reducing year on year.

7.22 80% of the companies also felt that as the years passed by, the benefit of ISM Code was increasing. Only 5% felt that the benefits actually decreased and the rest felt that there was no change.

7.23 54% wanted the Code to be changed (out of which 10% want substantial changes); while the remaining 46% felt that no change was necessary. 50% wanted major changes in the procedures; and 25% each wanted changes in the philosophy and content of the Code.

7.24 Most companies wanted reduced paperwork; simplification/streamlining of procedures; effective use of modern communication methods and IT; and integration of ISM with other systems like ISPS to reduce cost.

7.25 In order to enhance the benefits of the Code, most felt that it could be done by (in the order of priority):

- involving the seafarers in writing SMS related manuals to ensure that they were operationally aligned;
- integrating ISM into employment requirements;
- using ISM Compliance as a Performance Indicators;
- more monitoring of ISM Compliance; and
- more integrated training provided to all involved.

Summary

7.26 Most companies wanted some changes in the application of the Code to make it more functional and to reduce the annual compliance cost. They also wanted to improve training provided; boost motivation; reduce the paperwork involved; and simplify and streamline the ISM Code.

CONCLUSIONS

7.27 Most of the shipping companies that responded were convinced of the value of the ISM Code. They had started the initial implementation early and obtained their DOC in good time before the due dates. They had also invested in resources to create and implement the SMS, to train existing staff and employ dedicated personnel for implementation. These resources were viewed as an investment for the future. They hoped to deliver fewer operational disruptions; lower insurance premiums and higher morale among the crew.

7.28 Whilst most companies were clearly experiencing benefits and took a positive view, many felt that the return on investment was taking longer than expected. But clearly most companies also felt that after 7 years the process for implementing the ISM Code needed some changes to increase its effectiveness. Some of the suggested changes are:

- reduced paperwork from the present level;
- better training to ensure high quality of human resources;
- greater involvement of seafarers in preparing the SMS Manual;
- integration of ISM with other systems to drive the auditing/compliance costs down; and
- improvement of compliance measures.

8 QUESTIONNAIRE FOR SHORE BASED SHIPPING PERSONNEL

Introduction

8.1 A total of 89 shore based shipping personnel have responded to the questionnaires sent out for the purpose of this survey. Hence, the results of this report are based on these responses. A total of 18 questions were asked in the survey to determine the effectiveness of the ISM Code as perceived by the respondents.

FACTUAL INFORMATION

8.2 Almost all of the personnel who responded to the survey were highly placed in their organization with clearly a high level of responsibility. They included Marine and Technical Superintendents, Operations Managers, Designated Persons, QA Managers, Fleet Managers, Risk Managers, Safety Managers, SMS Superintendent, etc. Very few of the personnel were not in a position to comment upon the effectiveness of the ISM Code.

8.3 58% of those surveyed worked in companies with less than 15 Ships; 34% in companies with 15-50 Ships and the rest in companies with 50+ Ships. On average, companies had between 20-25 ships each and would therefore be defined as fairly large shipping companies. Among these companies, they managed Tankers (37%), Bulk Carriers (18%), Passenger Ships (17%), Container Ships (16%) and Ferries (12%). Almost 60% of these ships traded worldwide, while the rest were trading locally in certain European Regions.

8.4 Internal Audits were mostly covered by Company Superintendents or Safety/Training Officers covering 83% between them. The rest of the auditing was carried out by Ship's Officers' (auditing other departments) or outside consultants.

8.5 For the position of the Designated Person ashore (DPA), the most popular choices seemed to be the Safety Manager (31%) and Senior Managers of the company (25%). In no case was the ship-owner the DPA. The Technical Manager (12%), Managing Director (8%) and the Superintendents (5%) were the next popular choices. Others (19%) included Fleet Manager, Crewing Manager and in some cases a dedicated function.

8.6 DPAs came from a diverse background of companies, and among them handled many kinds of ships. They generally belonged to medium to large sized shipping companies and held diverse positions of responsibility within the company.

8.7 Hence it can be deduced that those surveyed form a representative sample of the shipping fraternity.

EFFECTIVENESS OF SMS

8.8 99% of those surveyed felt that the Company SMS that was introduced through the ISM Code was 'useful' to 'very useful'. Only 1% felt that it had a limited use and none felt that it had no use at all.

8.9 Furthermore, 55% of those surveyed felt that the SMS was very beneficial in ensuring safe operations on board. 40% felt that SMS was the right thing to do and the rest 5% felt that SMS was of some use. None of those questioned felt that SMS was of no help at all.

8.10 As far as the SMS is seen to be working in accordance with the principles of the ISM Code, only 22% felt that it was working perfectly; and 77% felt that it was largely working. Only 1% felt that it was working only sometimes in accordance with the ISM Code. Some of the reasons offered, by those surveyed, for the SMS not working perfectly were:

- lack of proper training on the SMS (29%);
- the SMS being too large and complicated (29%);
- lack of support from the top management (21%); and
- cultural differences between the crew members on board (21%).

8.11 Coming on to the issue of training, 31% received 1 day of SMS training per year; 53% received 2 to 5 days and only 16% received more than 5 days of training per year.

8.12 On being questioned on who they considered the driving force of the SMS to be in the company, most believed it was the Designated Person Ashore and the Top Management (63%) while only 27% believed it was Superintendents, Technical Managers, Seafarers, ISM Department, etc.

Summary

8.13 Largely the sentiment of the personnel surveyed seemed to be in favour of the ISM Code. The SMS appeared to be useful and working towards improving safety. Though most felt that the Company SMS was working well on the principles of the ISM Code, there was room for improvement. These included:

- making the SMS simpler and easier to use;
- imparting proper training; and
- having all people, especially seafarers, involved in developing the SMS.

8.14 They were also of the opinion that support and confidence from the top management was the key to the success of the ISM Code.

CORRECTIVE ACTIONS PROCEDURE

It is essential that the SMS continues to make improvements over time based on the feedback received from the seafarers, auditors, shore based personnel, audit reports that include non-conformities and incident reports. Continuous improvement is a feature of ISM compliance.

8.15 Hence the Shore Based Personnel were questioned on the system their company uses to incorporate improvements. 98% responded that their company had a well defined system in place to recommend improvements. Only 1% responded that their company did not have such a well defined system and the remaining 1% responded that they did not know of such a system in place.

8.16 When questioned whether the corrective actions related to non-conformances, incidents and near misses are closed out by verification, 98% responded that they were and the remaining 2% did not know about it.

Summary

8.17 Clearly, it is evident that almost all the companies have a defined system to incorporate improvements in their SMS. This is a very positive sign that the SMS incorporates a workable continuous improvement process.

EFFECTS OF THE ISM CODE

Some questions were asked in the survey to find out whether the immediate effects expected out of the ISM Code were being observed or not.

8.18 On the manning issues, 75% of those questioned responded that their companies did not have to increase the shipboard manning levels in response to the SMS introduced under the ISM Code. This implied that the existing sea staff took up various roles as required by the SMS. 23% responded that they had to increase the manning levels by 1-3 personnel and 2% responded that the increase in the on-board manning was more than 3 personnel.

8.19 To support one of the salient features of the ISM Code, 90% felt that near misses, accidents and incidents can be reported by everyone without the fear of punishment. 9% partially agreed with this and only 1% felt that this was not the case. This would indicate that a majority of companies do welcome incident reports to improve the Safety and Environmental Management on board.

8.20 One of the questions the ISM Code has brought out is the relative positions of the 'Safety' and 'Commercial Interest' on the priority scale. Historically the 'Commercial Interests' have been given priority over 'Safety', but today with Risk Management being practiced widely by shipping companies, it is stressed that in many cases 'Safety' surely has priority. On being questioned whether this was actually the case, 74% replied that 'Safety' was indeed given priority over 'commercial interests' in times of conflict between the two. 19% partially agreed with this fact and only 7% disagreed. This is again a very positive sign that the shipping companies are realising the importance of safety in daily operations and the benefits that it can produce.

8.21 One of the main objectives of the ISM Code was to reduce the number of incidents and accidents happening on board the ships. When questioned whether this was actually the case, only 9% felt that the incidents have greatly reduced; a majority (72%) felt that they have somewhat decreased; 18% observed no change; and only 1% actually found the number of incidents going up. This indicates that the effects of the ISM Code are slowly becoming visible. Given the short period of time since the ISM Code has been implemented, this is a welcome trend.

Summary

8.22 Generally it can be observed that the ISM Code appears to be working well. It has not imposed too much financial pressure on the shipping companies in the sense the manning levels onboard are pretty much the same as pre-ISM levels. SMSs are also being updated continuously in general; safety is given a priority over 'commercial interests' in times of conflict and the incidents/accidents are actually reducing slowly over a period of time. This goes to show that the ISM Code is a step forward in the Management of Safety and Environment on board.

RECOMMENDATIONS FOR IMPROVEMENT

8.23 The responses indicate the following recommendations:

- little more than 25% felt that a ‘more systematic training programme’ in the ISM Code will go a long way in improving the effects of the Code;
- 23% felt that by involving more people, especially the seafarers, in writing the SMS will ensure that it is more practical in nature and the end users (who are the seafarers) will feel ownership of the system and use it to improve on safety and environmental management;
- 16% felt that more monitoring is needed compared to the present level in the compliance of the Code;
- 15% felt that ‘streamlining the SMS’ would be beneficial and make it simpler to use;
- 15% felt that it was essential to incorporate the ISM Code into the ‘Employment Requirements’ of the employees to have an effect; and
- a minority felt that having an implementation based performance scheme will motivate people to pay more attention to the SMS.

Summary

8.24 It is clear that some people want changes in the present system of implementation of the ISM Code. There are four main areas for improvement:

- systematic training programme;
- streamlining SMS and making it more practical to use;
- effective implementation and monitoring techniques be devised; and
- having all concerned people involved in writing the SMS.

CONCLUSIONS

8.25 Based on the findings of this survey, it is clear that the ISM Code is being appreciated by the shore-based shipping personnel. The benefits from the implementation of the Code are already being seen and there seems to be an enthusiasm to impart some changes to the Code and improve it and make it more relevant in the future. Some of the observations were:

- SMS (based on the ISM Code) was working well along the principles of the Code;
- most companies have a systematic procedure for making amendments to the SMS;

- companies were experiencing a decrease in incidents/accidents on board their ships; and
- improvements were needed to provide systematic training, streamlining SMS and making it more practical to use, and development of effective implementation and monitoring techniques.

9 QUESTIONNAIRE FOR SEAFARERS

Introduction

9.1 A total of 2,959 seafarers have responded to the questionnaires sent out for the purpose of this survey. A total of 33 questions were asked in the survey to determine the effectiveness of the ISM Code as perceived by the seafarers.

FACTUAL INFORMATION

9.2 A total of 2959 responses were received, of which 257 were rejected as being spoiled or duplicate returns.

9.3 Approximately 46% (1247) of the responses were submitted electronically either through email or via the IMO web site. The remainder were submitted on paper having been completed by hand. Some of these were returned by individuals who had printed the questionnaire from the web site, and some were distributed and collected in batches by shipping companies and seafarer organizations.

9.4 The questionnaire consisted of 33 questions. For each question the seafarer was required to select one from a list of several predetermined responses. It was intended to elicit from the seafarers their perceptions of the effectiveness of the ISM Code.

9.5 Thirteen of the questions carried supplementary questions, each of which invited the respondents to add to or expand on their answer to the preceding multiple-choice question. These additional, open questions were intended to add richness to the data obtained from the responses to the questionnaire. It was not possible to add supplementary comments when submitting the questionnaire electronically. Time constraints have prevented a systematic analysis of these additional responses.

9.6 A statistical summary and analysis of the responses to each of the questions is followed by an analysis and commentary on the reliability of the method, the validity of the data and the representativeness of the sample.

Statistical Summary

Basic Information about the Respondents

9.7 55% of the seafarers were employed by manning agencies, which suggests that many would have been sailing on different ships operated by different companies for a large part of the time. Nevertheless, it is not uncommon for agencies to manage dedicated pools of seamen for particular operators, and for crew members to return to the same ship or fleet many times. Some of them, therefore, will have had as much opportunity to observe the longer term implementation of a management system in a company as those employed directly by shipping companies.

9.8 Furthermore, 75% of the respondents had been serving for more than three months on the ship on which they completed the questionnaire, while 60% had been serving for more than 4 months, which indicates that they would have had sufficient time to form an impression of the ship and its operation.

9.9 60% of those directly employed by the ship operator had been with the company for more than 5 years.

9.10 Figure 5 of annex 6 shows that the sample obtained was representative of all categories of seafarers.

Management System Documentation and Information

9.11 99% of respondents stated that:

- they were familiar with their company's safety and environmental protection policy;
- their duties and responsibilities were clearly stated in the company's manuals, procedures and work instructions;
- they had ready access to all the documents they need in order to carry out their duties; and
- they receive sufficient information on the safety and environmental aspects of their work in their own language or a language they understand well.

9.12 92% believed that the shipboard documentation was clearly written and easy to use. Only 1% said that it was difficult to use, and none said that it was very difficult to use.

9.13 89% said that they found all or most of the procedures, work instructions, forms and checklists that they use in the course of their work to be useful. Only 2% said that they found few of them useful, and no one said that none of them was useful.

Training, Drills and Exercises

9.14 95% of those who replied said that the familiarisation training they received on joining their present ship had been good or very good.

9.15 95% agreed or strongly agreed to the proposition that they received sufficient training in the rules, regulations, codes and guidelines that are relevant to their work.

9.16 According to 95% and 97% of respondents respectively, drills and exercises carried out on board are realistic, and are followed by "wash-up" meetings to identify any lessons to be learned.

9.17 96% are confident or very confident that they and their colleagues are adequately prepared to respond to potential emergencies.

9.18 As for general training requirements, 90% felt that their companies were moderately or very supportive in identifying training needs and providing training. Only 1% said that their companies were moderately unsupportive and only 1% said that their companies were very unsupportive.

Communications

9.19 When asked how well they and their colleagues were able to communicate in carrying out their duties, 99% said that they were able to communicate moderately well or very well.

9.20 86% felt that communications between shipboard and shore-based staff had been improved by the ISM Code, while 14% believed that the Code had made no difference in this respect.

Motivation of the Crew

9.21 96% of respondents said that they were encouraged or strongly encouraged to report accidents, near misses and unsafe practices, and 92% were satisfied or very satisfied with the responses of the companies.

9.22 Similarly, 95% said that they were encouraged or strongly encouraged to suggest improvement in working practices, and 88% were satisfied or very satisfied with the responses of the companies.

9.23 94% of respondents said that they and their colleagues were encouraged or strongly encouraged to participate in meetings, briefings or other gatherings at which safety and environmental matters are discussed.

Living and Working Conditions

9.24 When asked how they would describe the condition of their ships' working and accommodation areas and the general standard of maintenance of the ship and its equipment, 96% replied good or very good.

9.25 99% said that the ships' working and accommodation areas provide safe working and living environments.

Audits, Non-conformities and Corrective Action

9.26 Internal and external audits were seen as being either effective or very effective by 92% and 90% of the respondents respectively.

9.27 59% said that they were always informed of the results of audits of activities in which they were involved, while 30% said that they were usually involved. 86% said that they were always or usually involved in the correction of non-conformities.

The Overall Impact of the ISM Code

9.28 95% said that ships are now safer places to work, while 5% said that the ISM Code had made no difference. Although 74% believed that the ISM Code had made their ships' working

environments a lot safer, only 57% said that the ISM Code had a strongly positive effect on the way in which they did their jobs.

CONCLUSIONS

9.29 These results appear to indicate that a large majority of the respondents believe that the ISM Code has had a significant positive effect on the way in which operations are conducted on board their ships, and that their lives are considerably safer as a result. 99% stated that they are well informed, familiar with their companies' requirements and had no difficulty in using the corresponding management system documentation which, on the whole, they found useful.

9.30 Majorities, almost as large, believe that they are well trained, well supported by their companies, and that they are encouraged to participate in the reporting and resolution of safety and pollution prevention problems. They report that their ships are in good or very good condition, and 99% are of the opinion that their living and working environments are safe. The same proportion says that they communicate well with their colleagues.

9.31 Between 95% and 97% of the respondents stated that drills and exercises held on board were realistic, that they were followed by de-briefings and reviews to identify lessons to be learned, and that they and their colleagues were adequately prepared to respond to any emergencies that may occur.

9.32 It is noteworthy that very few negative responses were received at all.

9.33 On the face of it, these almost unanimously positive results constitute overwhelming support for the proposition that the ISM Code has been effective.

9.34 However, the Group felt that these results did call into question the representativeness of the sample. It must be concluded that only those with a favourable attitude toward the implementation of the ISM Code appear to have responded and that this in itself has validity as a response. It is believed that the results indicate that the seafarers believed that the ISM Code had been effective in the companies in which they were working at the time of the survey. Whilst it is difficult to generalize from the sample to the rest of the industry, it is possible to view the results as showing that the ISM Code *can* bring about positive changes in safety and pollution-prevention in shipboard operations, and *can* be made to work for the benefit of seafarers.

CONCLUSIONS AND RECOMMENDATIONS

METHODOLOGY OF THE EXPERT GROUP

10.1 The Group understood, from its first meeting, that its work would be limited by its non-funded status and the relatively short time that would be available for analytical work. It was decided in the early stages that two broad areas of investigation could be followed; invitations to appropriate bodies to contribute their informed impressions of the effectiveness of ISM implementation; and questionnaires targeted at various groups intimately involved in the operation of safety management systems at sea. This approach would also provide an opportunity to the members of the Group to add value, based upon their own experience of the Code's implementation.

10.2 Initially, the Group was concerned that given the opportunity to respond to an anonymous questionnaire, respondents could be expected to return a full range of opinions of the ISM Code from fully supportive to completely negative. However, this did not prove to be the case when the data was analysed.

10.3 Preliminary analysis of results at WMU, identified a number of returns from shipboard personnel where evidence of collaboration or duplication was quite plain. The forms identified in this category displayed a broadly similar spectrum of opinions as did the remaining responses, that is, almost entirely supportive. The Group checked the impact on the overall analysis with, and without, the suspect forms and took the decision to remove 297 forms from the data to be analysed.

10.4 The Group found that the overwhelming majority of responses were supportive of the ISM Code and this feature of the results was the subject of much discussion. The Group had to take a view on why the results obtained appeared to be generally supportive of the Code's impact, a result that was not borne out by the Group's collective experience with ISM implementation. The consensus among the Group was that interest in being part of the study was highest amongst those that had generally enjoyed some benefit from the implementation of ISM. It is the Group's considered opinion that whilst the results cannot be claimed to be a representative sample from across the industry, they nevertheless represent a model of collective experience from amongst those that support the Code. The Group also agreed that this was a limitation in the methodology of the data gathering exercise and believed that it could only be addressed by investing in a study employing researchers in the field to ensure that the views of non-supporters could be specifically captured.

10.5 The group recommends that in case a further study is undertaken in the future then the limitations recognised in the current study be taken into account. These must include; the possible limiting factor that the study was undertaken in the English language, any questionnaires used should be submitted for 'market research expert' assessment and statistical analysis should consider the impact of a self-selecting group of respondents.

10.6 Based on the data collected, the Group concluded that the results show that, for companies that are committed to a safety culture through ISM implementation, positive benefits will be delivered. These benefits included positive changes in safety and pollution prevention in shipboard operations and that these could be made to work for the benefit of the seafarer. Operational benefits were equally identifiable.

CONCLUSIONS

10.7 The following conclusions are drawn:

- Everyone agreed that, where the ISM Code is embraced as a positive step toward efficiency through a safety culture, tangible positive benefits are evident;
- ISM Code compliance could be made easier through a reduction in the administrative process by:
 - streaming-lining and reducing the paper work that supports ISM compliance, particularly the SMS;
 - the greater use of technology and IT to reduce paperwork;
 - identifying common areas in the ISM Code and for example the ISPS Code and integrating documentary requirements;
 - motivating seafarers to use the reporting and monitoring systems in the improvement of safety management systems;
 - involving the seafarers in the development and continuous improvement of ISM manuals;
 - increased integrated training for all concerned;
 - exploring measures to reduce the cost of compliance; and
 - improving ISM compliance monitoring and developing performance indicators; and
- the impact of port State control in this area was not explored but certainly appears to merit further study.

RECOMMENDATIONS

10.8 The Group recommends that:

- a further study should be undertaken, at a later date, specifically to examine:
 - cause and effect between ISM implementation and flag State safety record;
 - the relationship between Port State Control and ISM compliance; and
 - whether textual changes in the requirements of the Code could make compliance easier and lead to an improved safety culture,

- in response to data produced for this study:
 - methods to streamline the implementation of the Code through technology and increased use of IT should be explored;
 - the alignment of ISM and ISPS in shipboard documentation should be considered;
 - a reduction in paperwork should be encouraged;
 - guidelines for Administrations should be revised to make them more user friendly; and
 - new guidelines to assist companies to implement the Code should be developed,
- the results of the study be given widespread publicity across the industry in order to show how positive attitudes to ISM can yield tangible operational, financial and safety benefits.

ANNEX 1

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* * *

ANNEX 2

TERMS OF REFERENCE

**Independent Expert Group established by the Secretary-General
to study the impact the ISM Code and its effectiveness**

Pursuant to the decision of MSC 75 to assess the impact of the ISM Code on the safety of ships and its contribution to the enhancement of safety and quality of shipping, the Secretary-General intends to establish an expert group to undertake a study to assess and develop a practical way for IMO to address the impact of the ISM Code on safety and security of ships and protection of the marine environment. The goal of this exercise is to provide the Secretary-General with a report of an independent experts study on the impact of the implementation of the ISM Code and any recommendations for IMO's future activities for effective implementation of the ISM Code which should be further discussed at MSC and MEPC.

1 The Expert Group established by the Secretary-General, comprising of experts selected from administrations, universities and shipping industry organizations, assisted by officials from the Secretariat designated by the Secretary-General should:

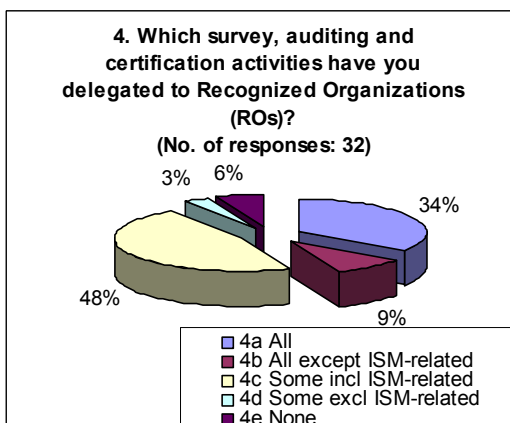
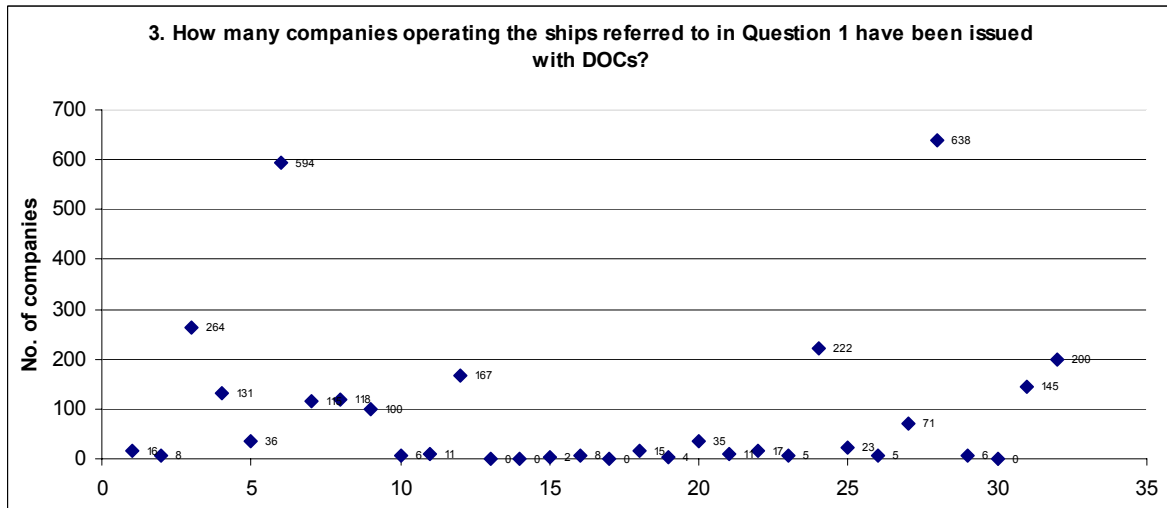
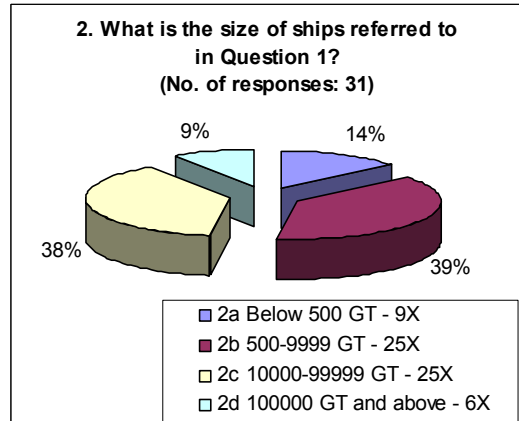
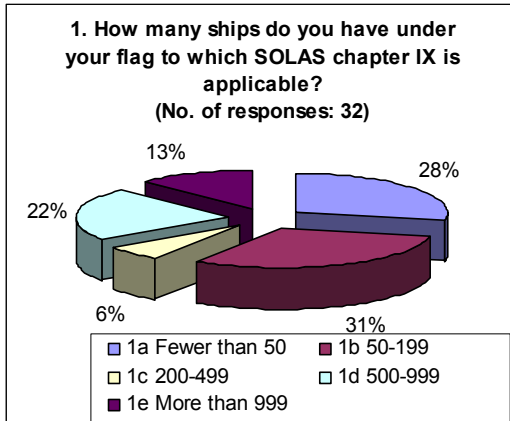
- .1 collate data, statistics and other impact assessment information within the domain of their organizations;
- .2 develop a draft Model Questionnaire to collate information pertaining to different types of vessels under possible criteria such as:
 - detentions,
 - serious deficiencies,
 - casualties,
 - recurring detentions and deficiencies, etc.,
 - commonly occurring deficiencies,
 - risk assessment analysis; and
- .3 on the basis of data collected, analyse the information, identify trends and assess the impact of ISM Code on the safety of life at sea and protection of the marine environment.

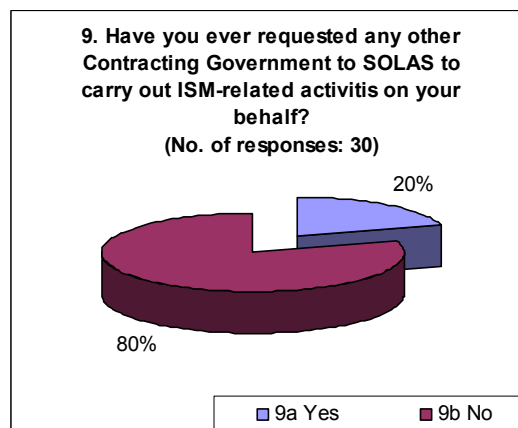
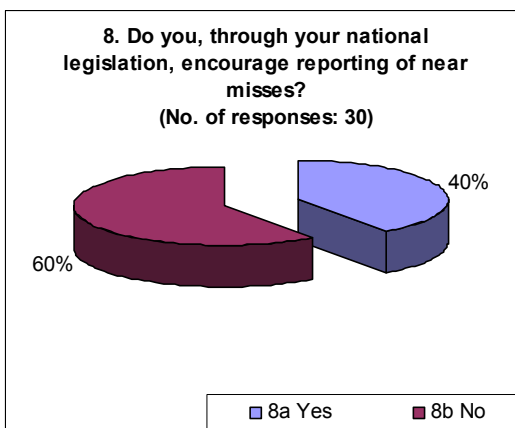
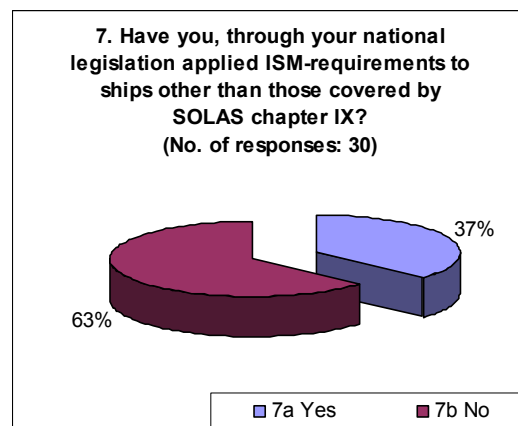
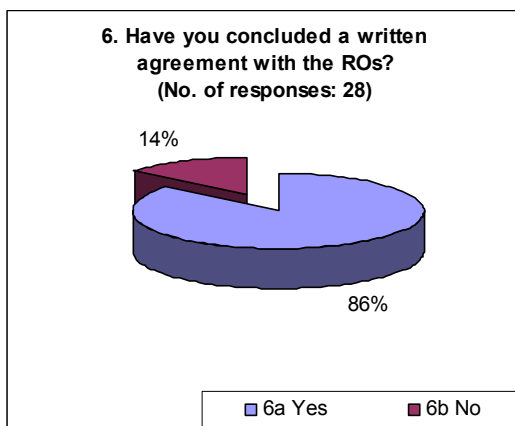
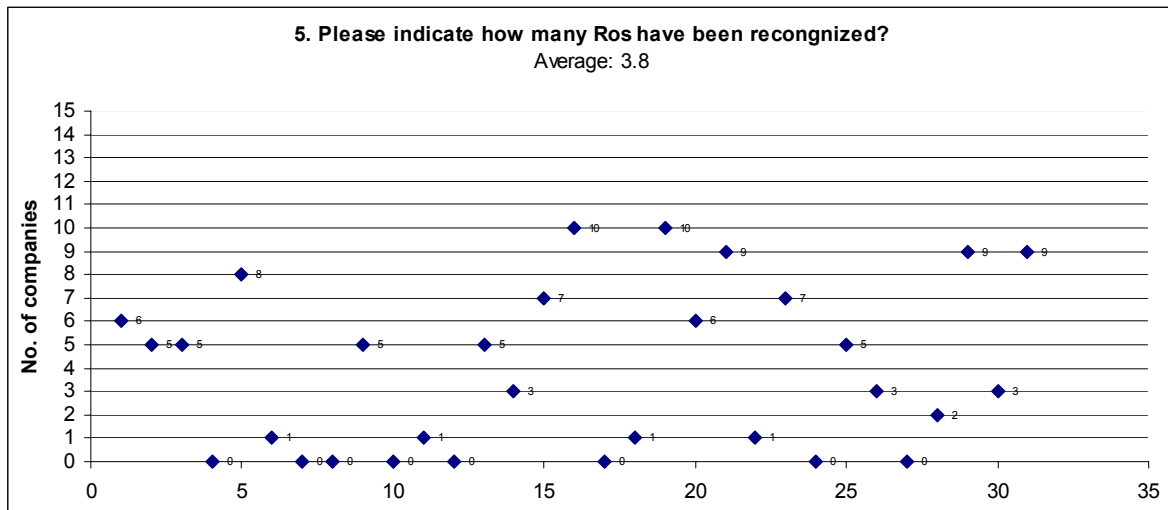
2 On completion of the study, submit a report of the study and any recommendations to the Secretary-General.

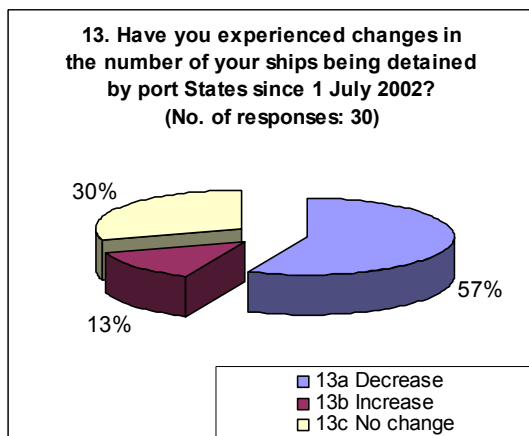
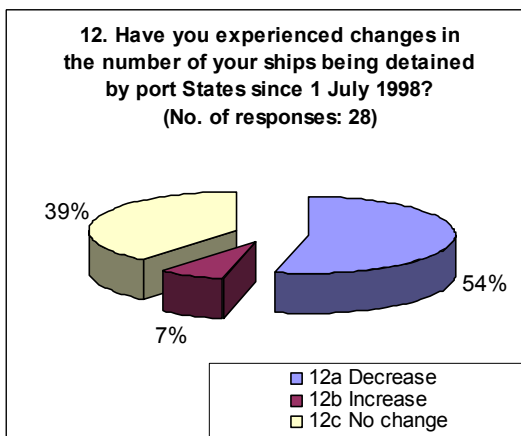
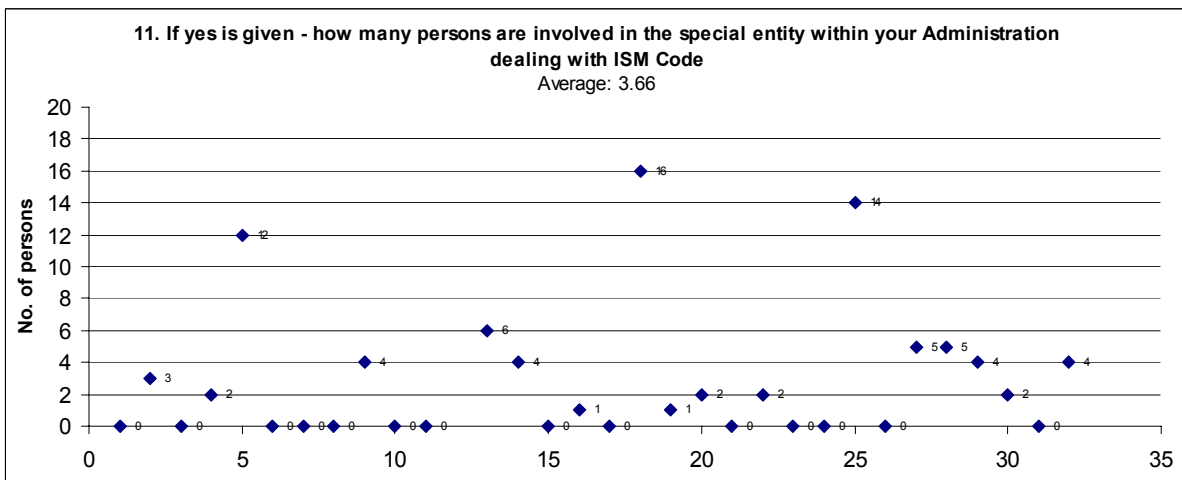
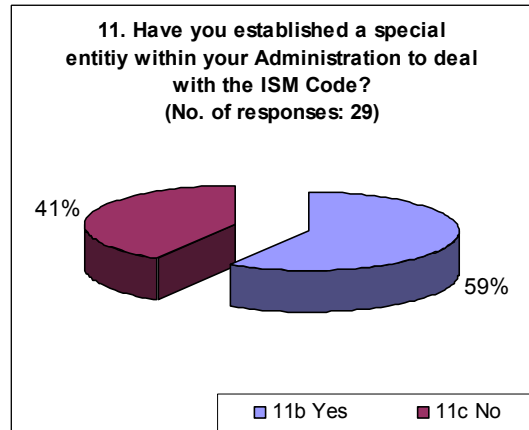
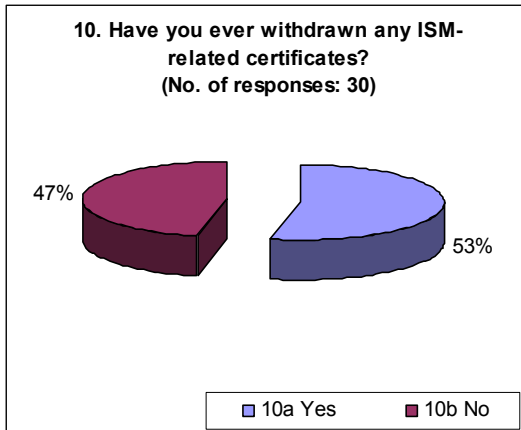
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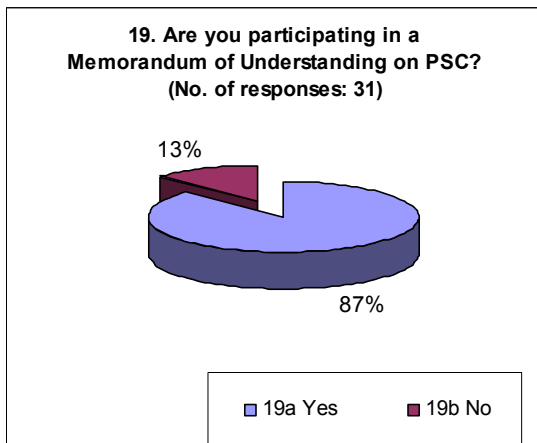
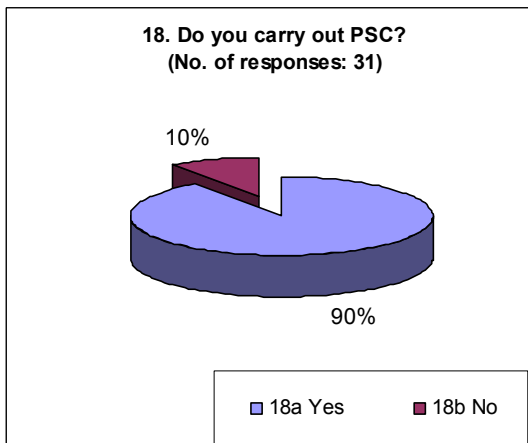
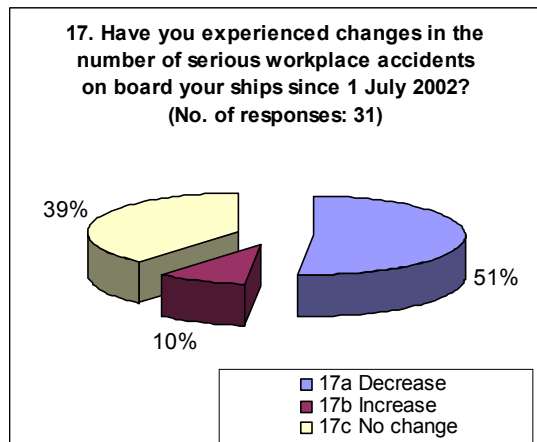
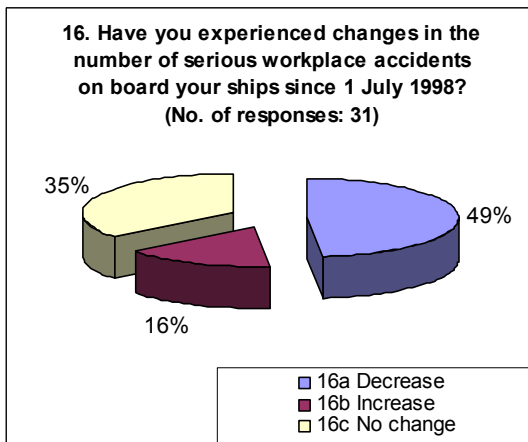
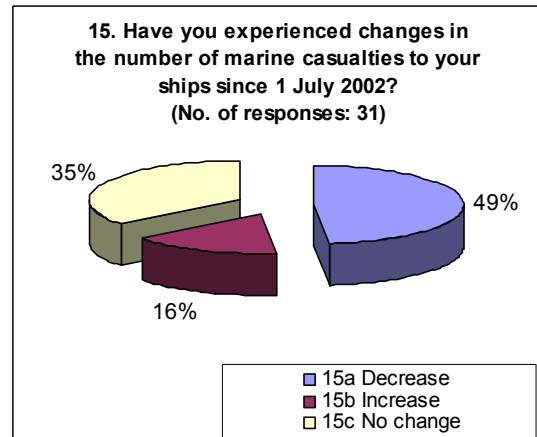
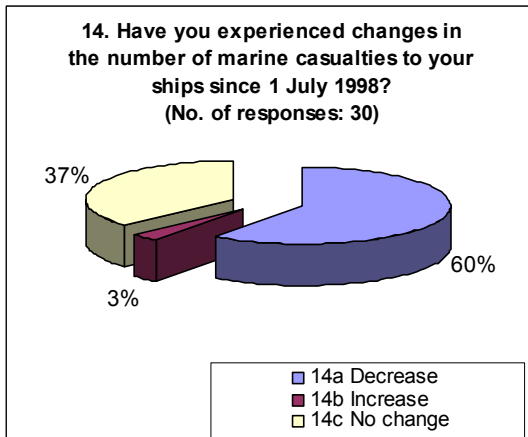
ANNEX 3

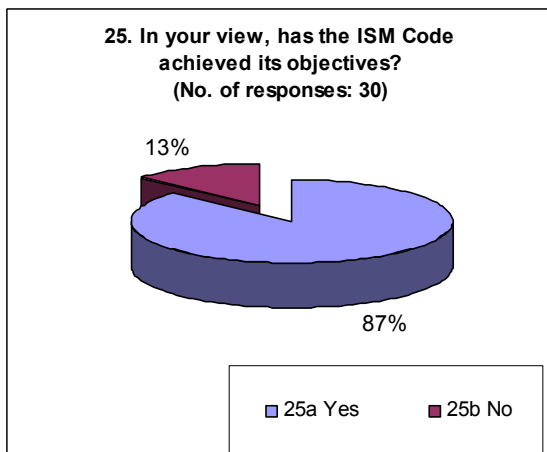
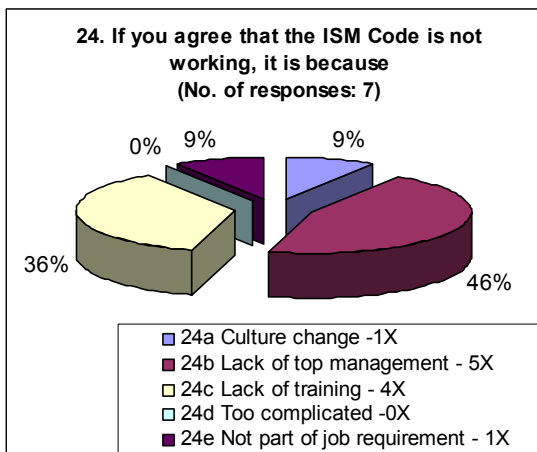
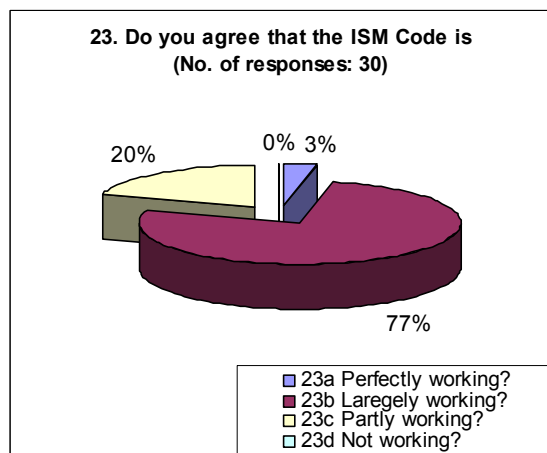
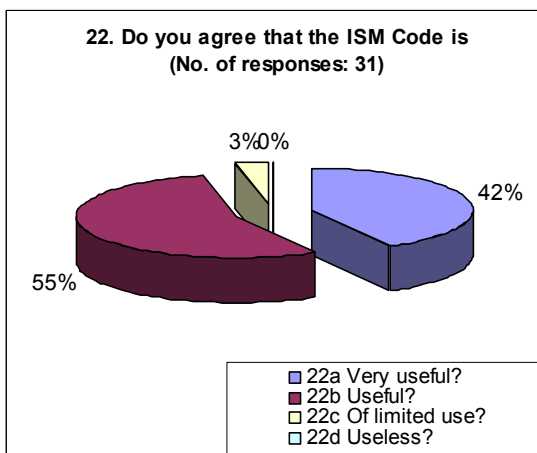
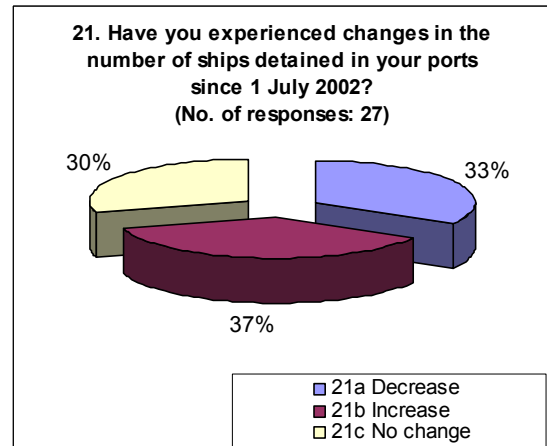
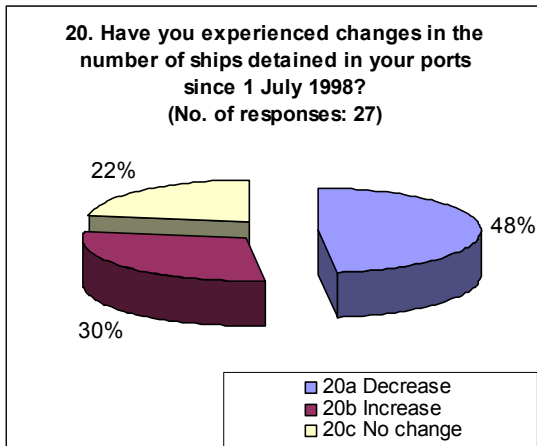
Charts for Administrations

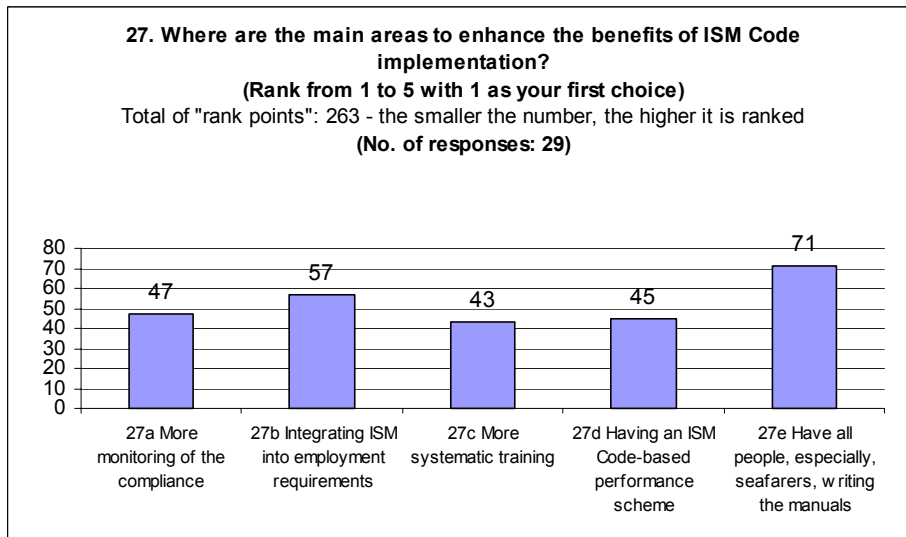
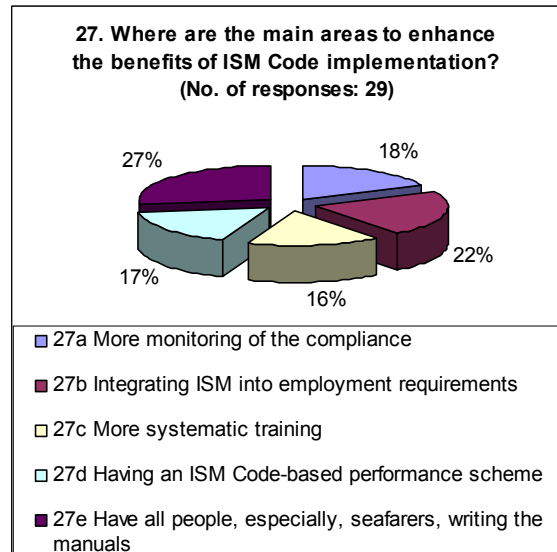
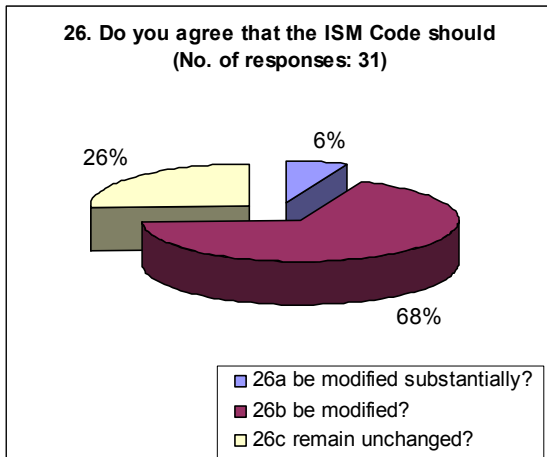








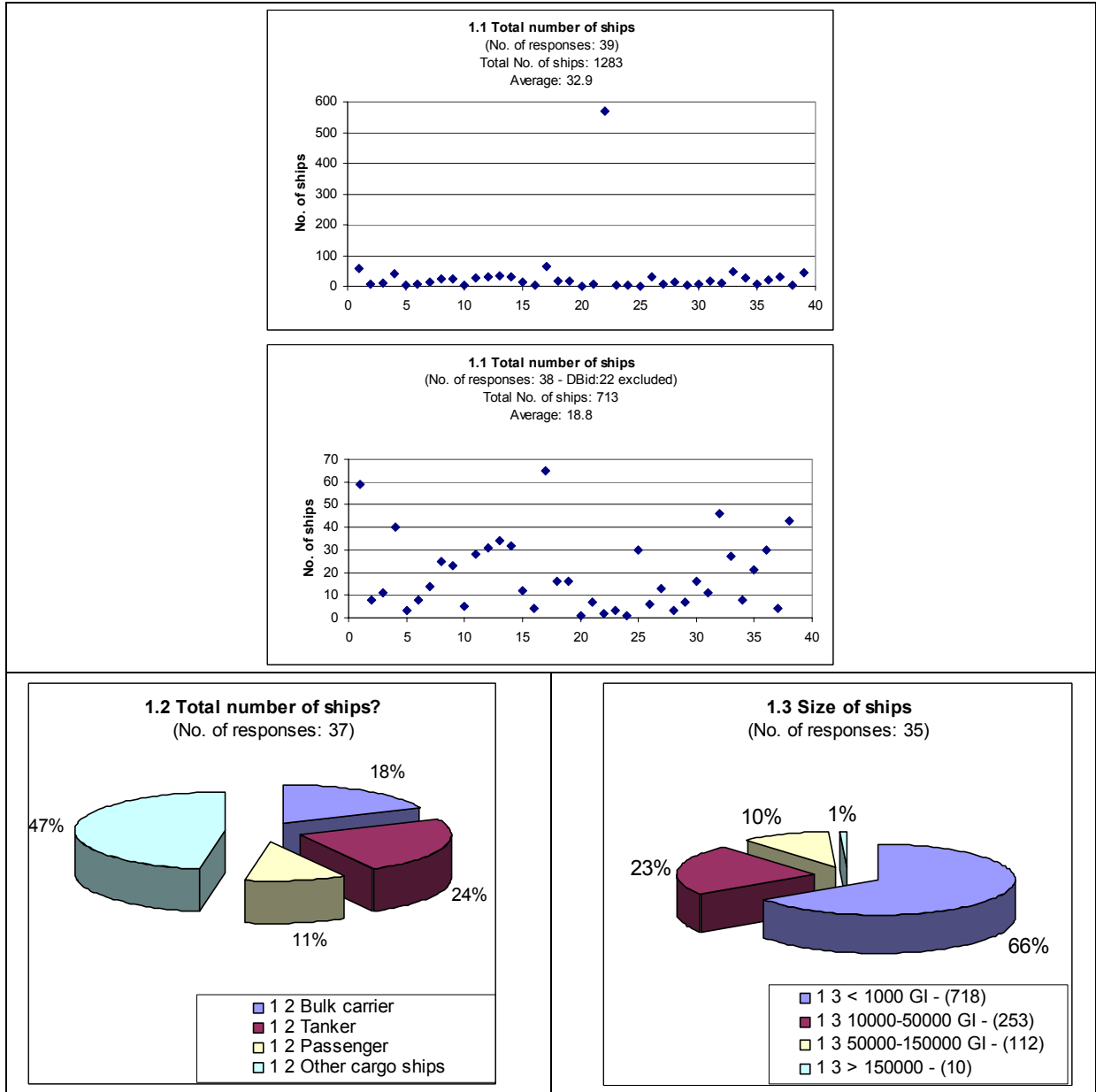


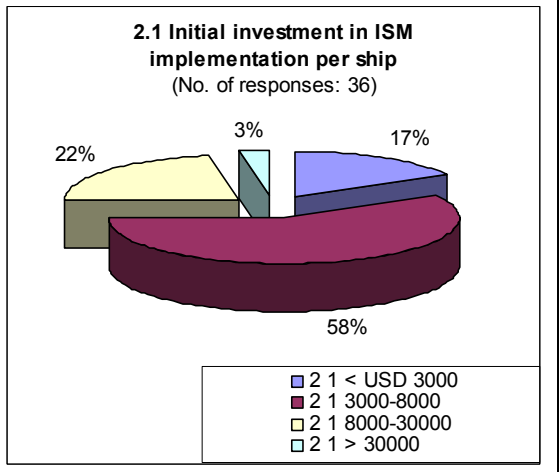
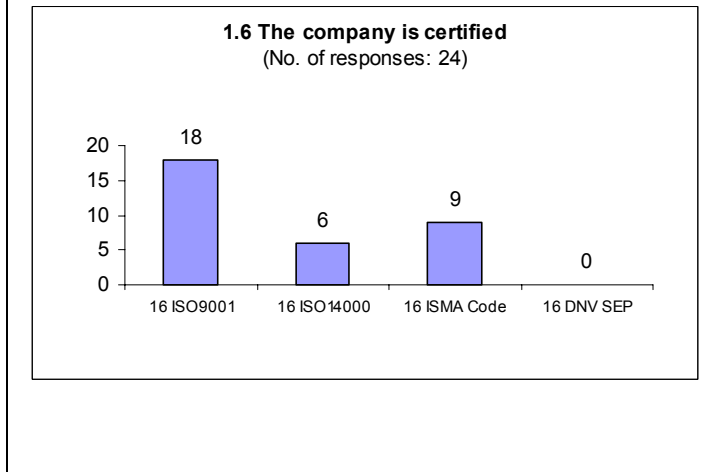
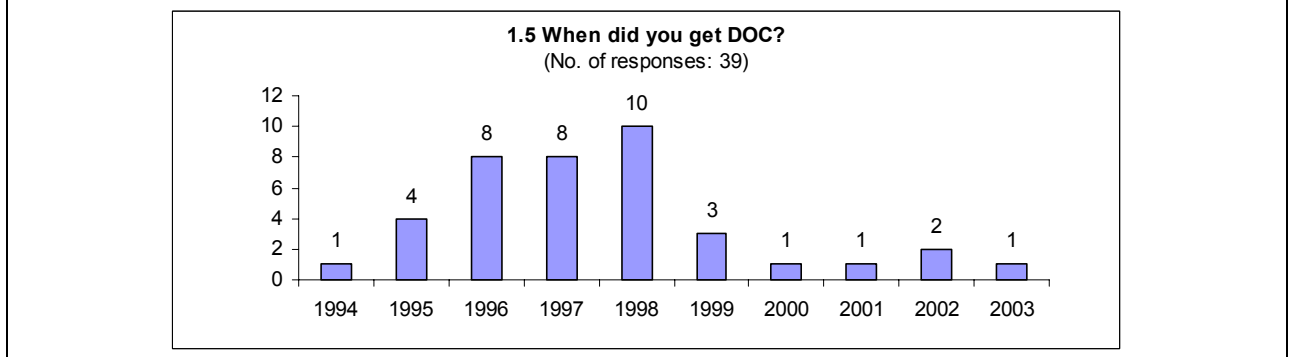
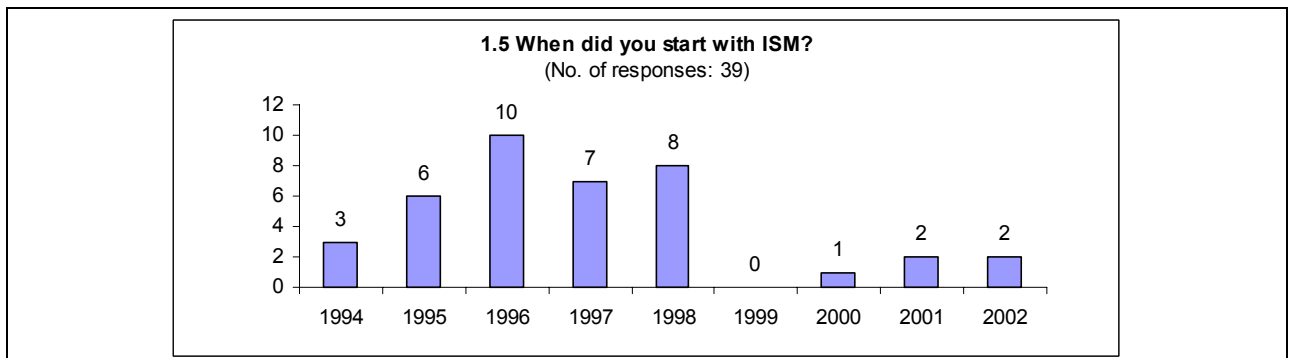
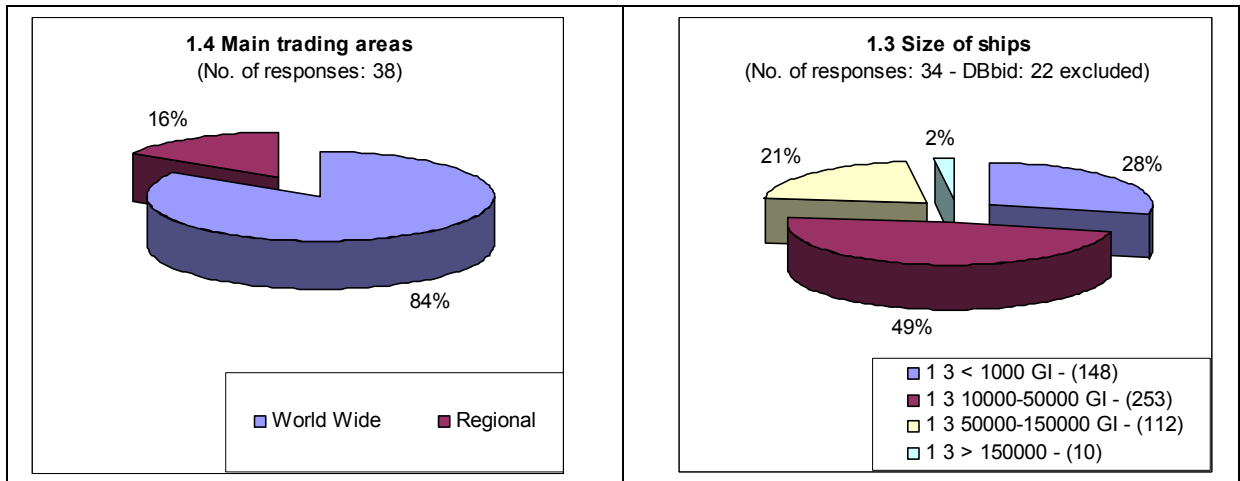


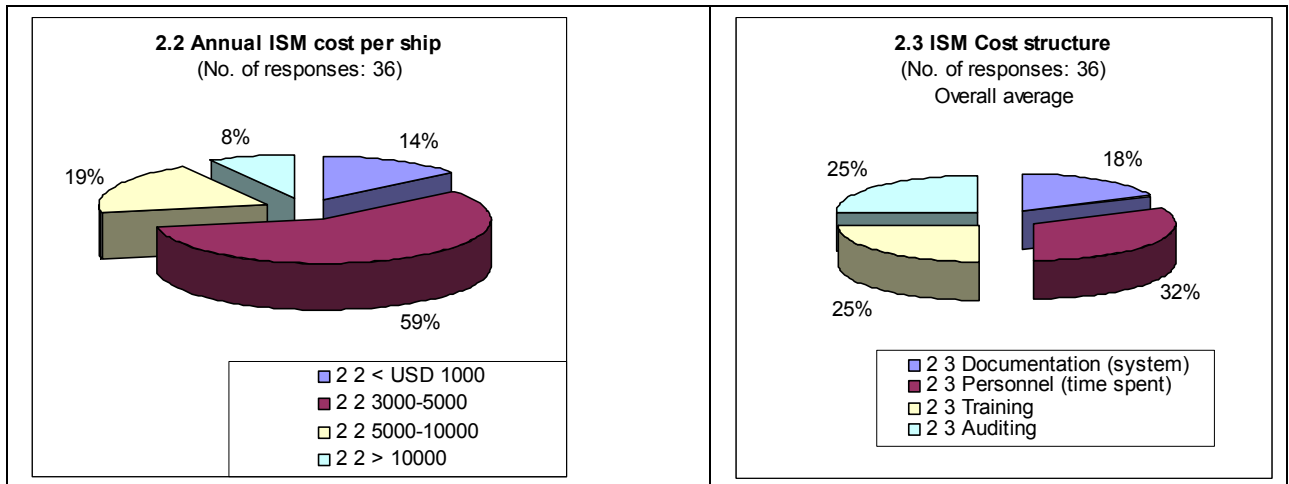
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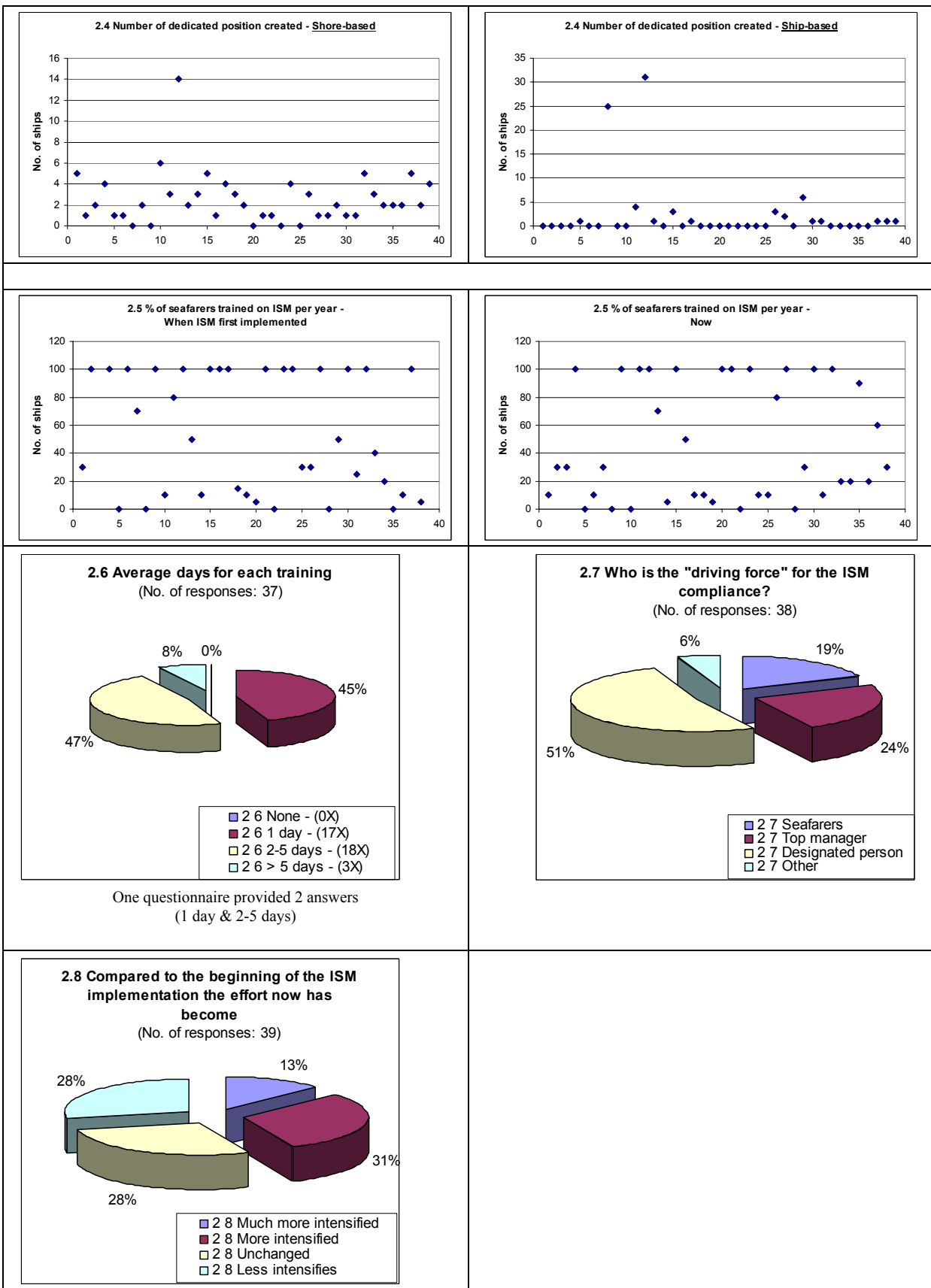
ANNEX 4

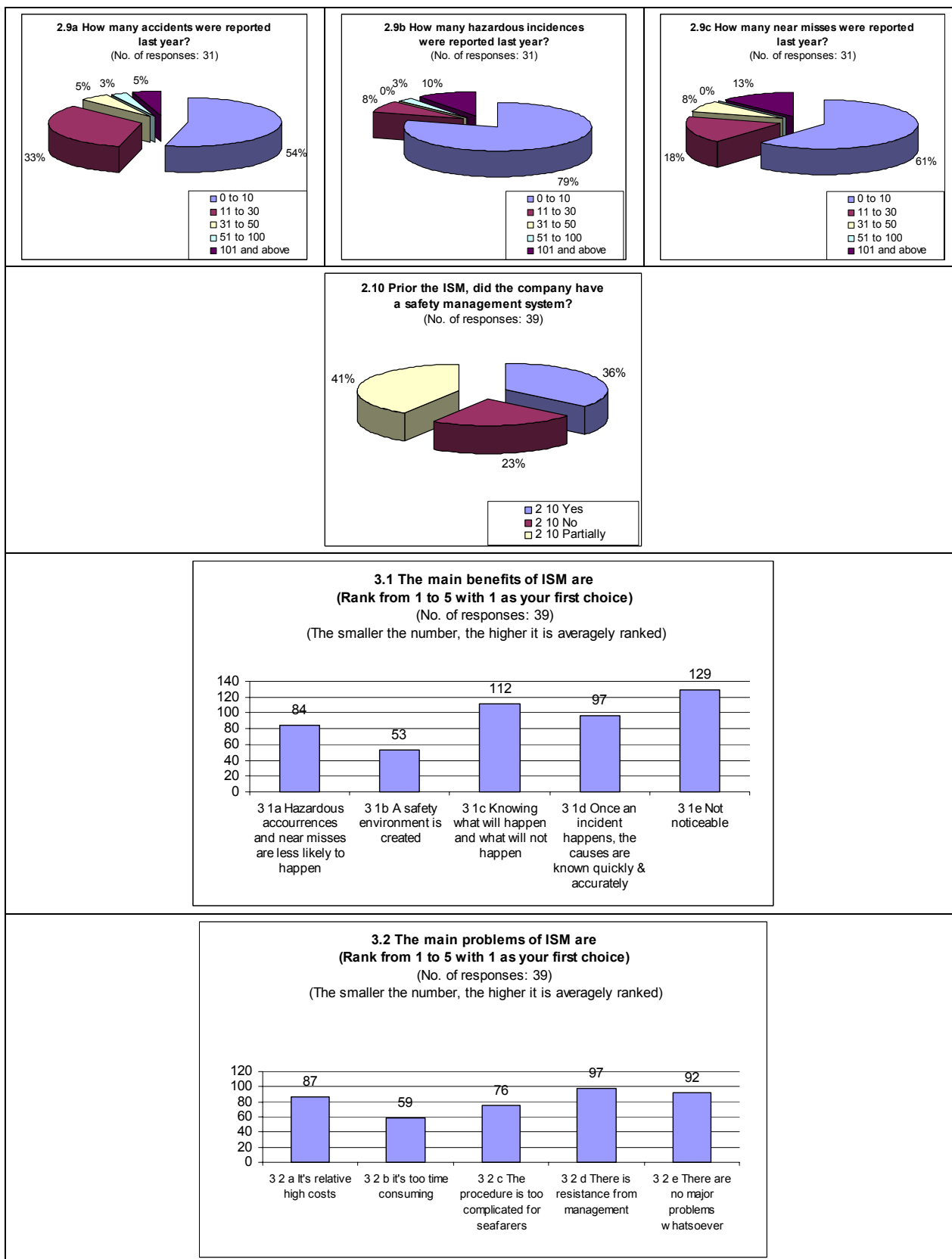
Charts for Companies









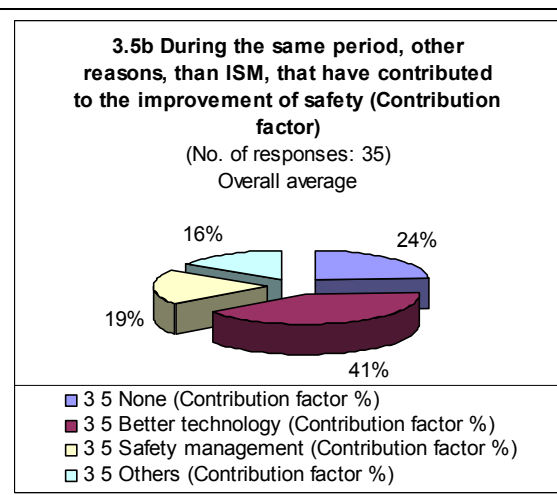
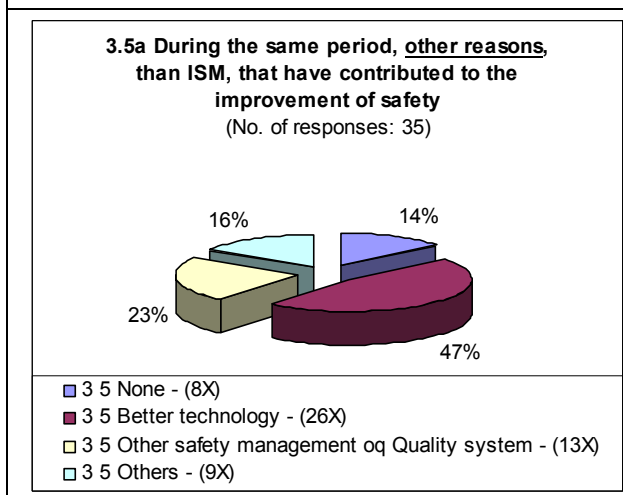
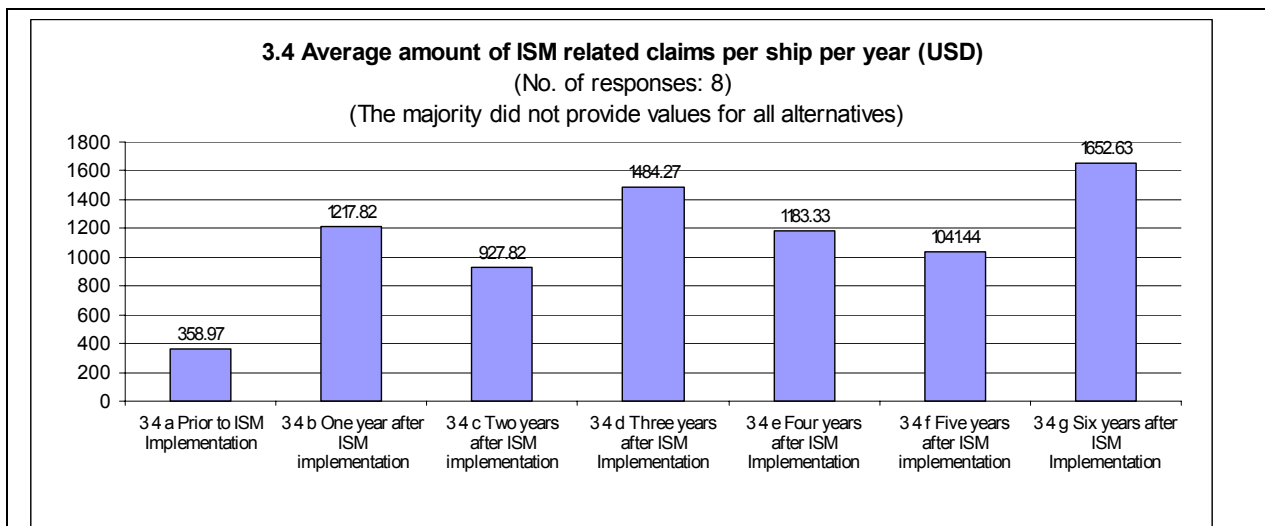


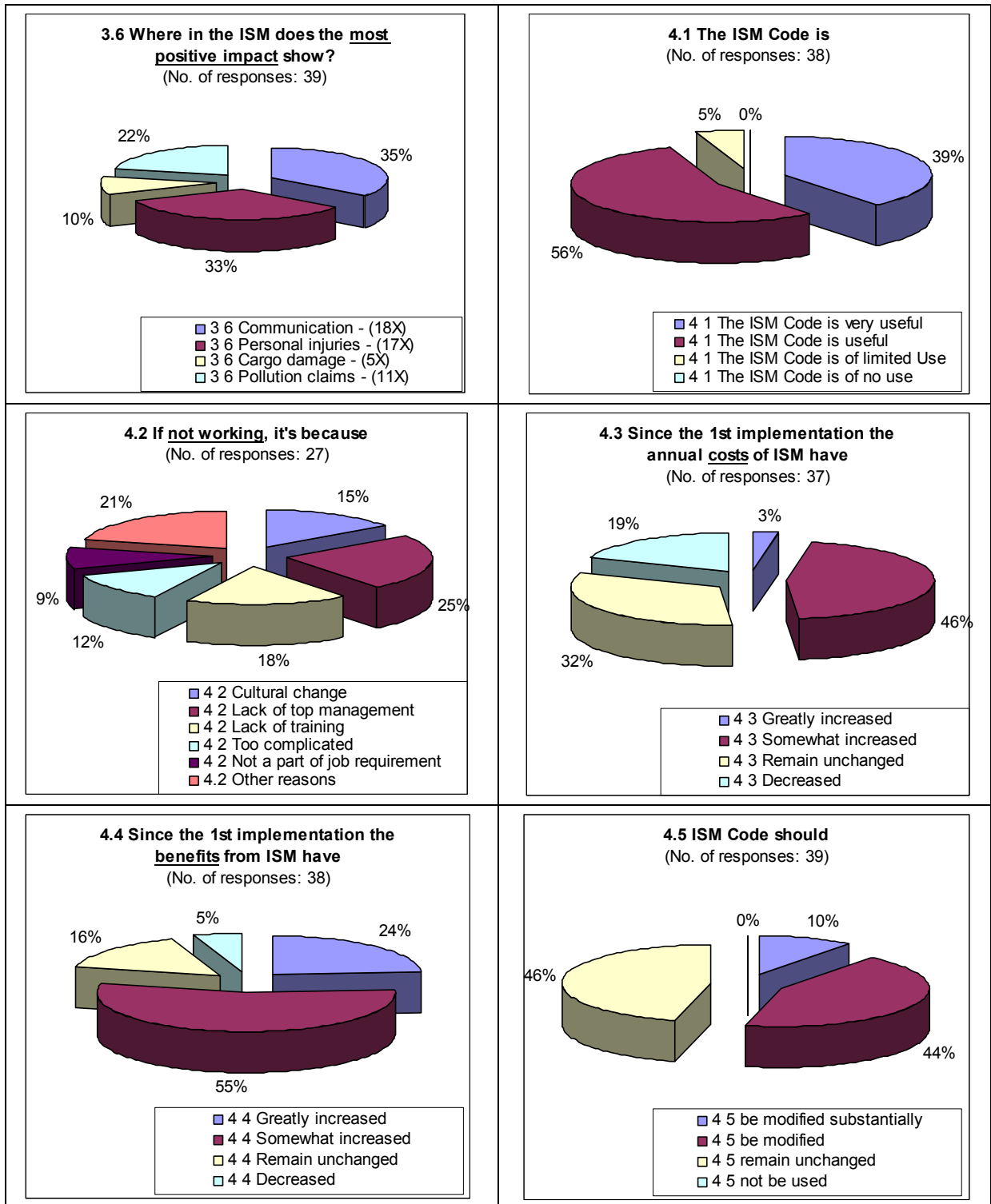
Number of accidents and hazardous occurrences and near misses reported per ship on average (please specify the number for each period)

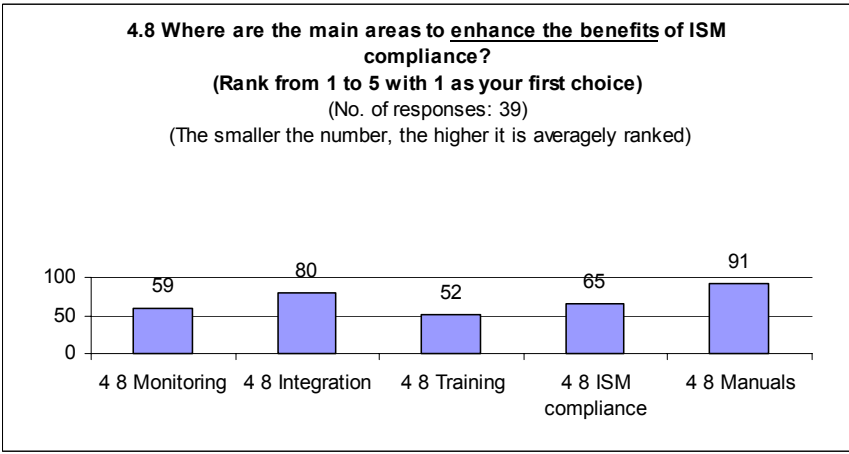
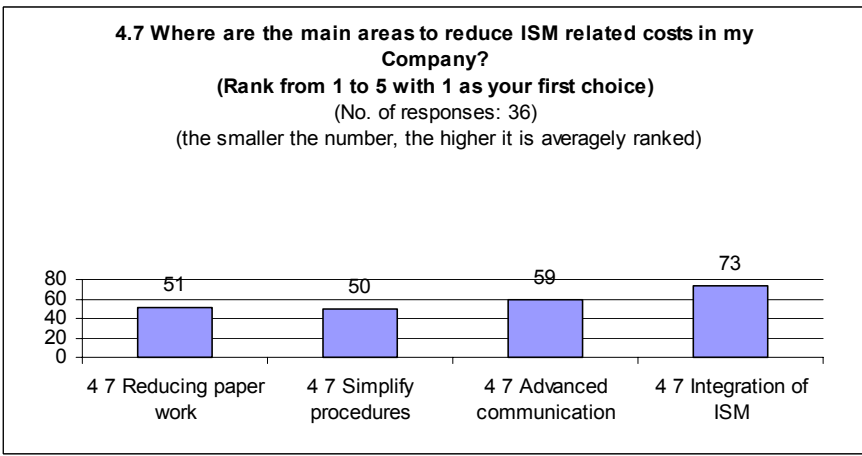
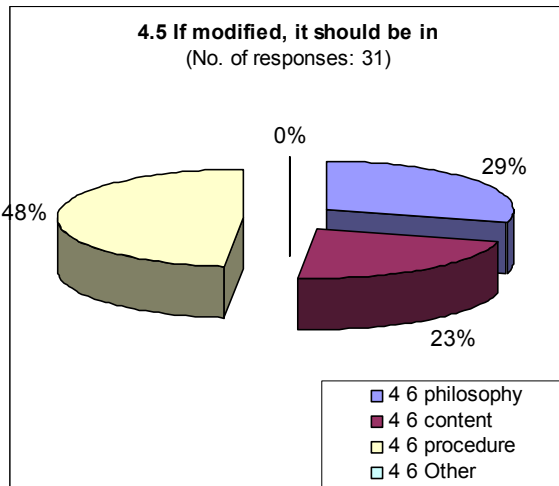
3.3

An overall average has been applied– Total No. of responses: 31 – Removed data

	<u>Accidents</u>	<u>Hazardous occurrences</u>	<u>Near-misses</u>
a) One year prior to ISM implementation	1.44	0.55	0.24
b) One year after ISM implementation	3.23	2.54	0.87
c) Two years after ISM implementation	4.11	1.74	1.22
d) Three years after ISM implementation	4.37	2.14	1.38
e) Four years after ISM implementation	5.15	1.57	2.24
f) Five years after ISM implementation	3.77	1.52	2.07
g) Six years after ISM implementation	3.52	1.24	3.25



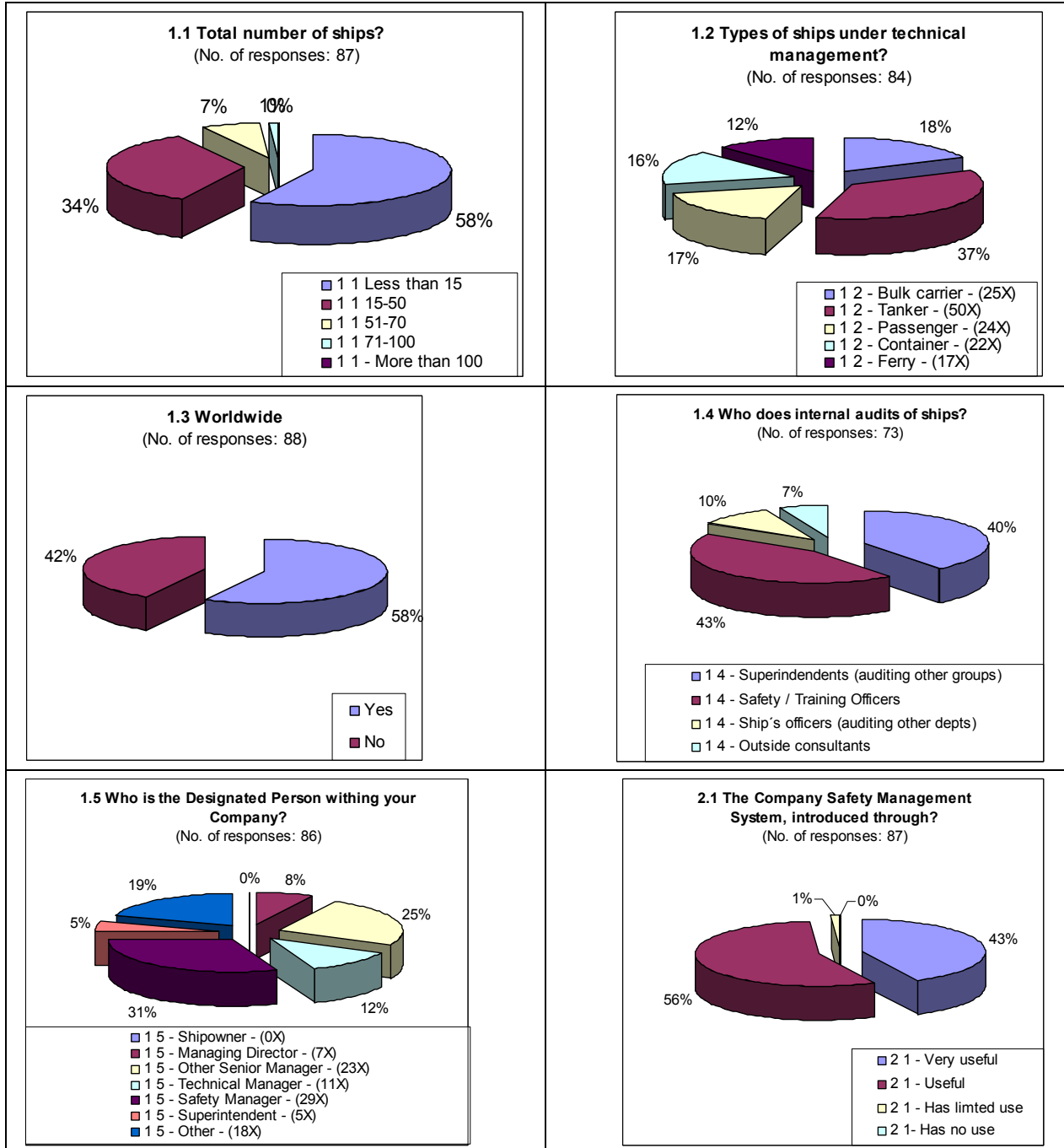


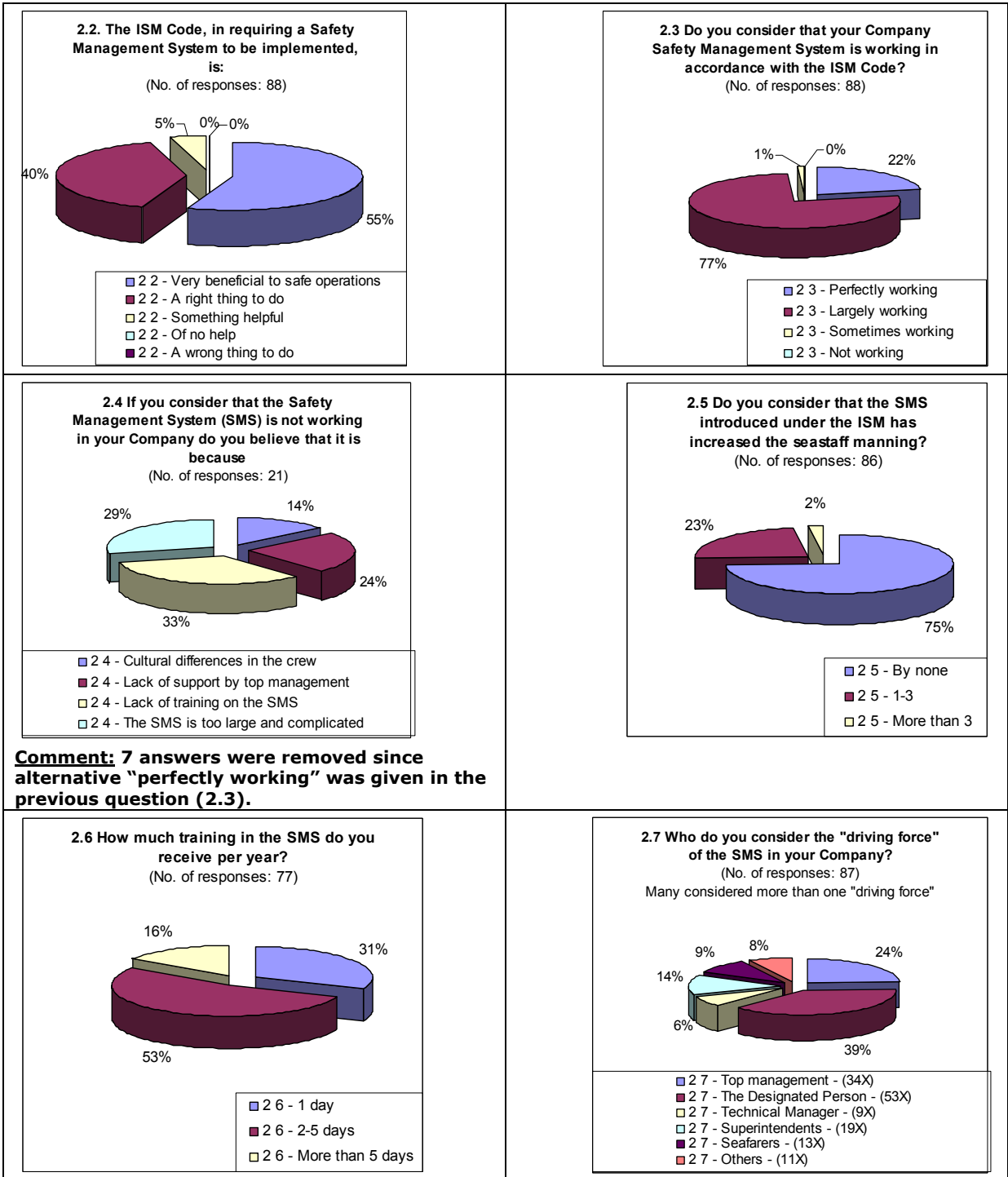


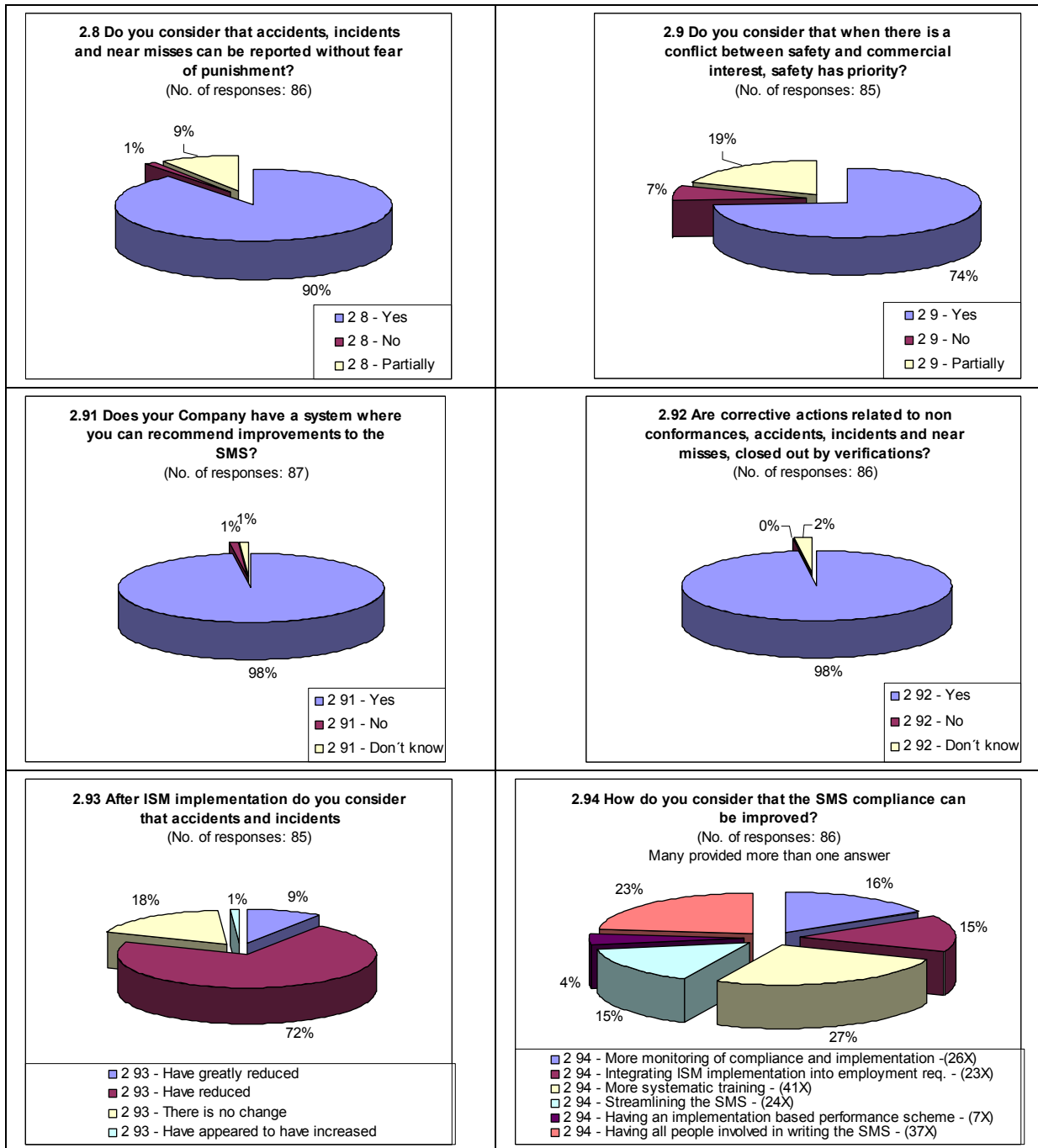
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ANNEX 5

Charts for shore-based personnel







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ANNEX 6

Charts for shipboard personnel

